CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CAXXXXXXX
ORDER R5-2020-XXXX

AEROJET ROCKETDYNE, INC.
GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS, ARGET, GET E/F, GET HA, GET J, GET KA, GET LA, GET LB, GET AB WHITE ROCK GET, SAILOR BAR PARK GET, GOLDEN STATE WATER WELLS AND LOW THREAT DISCHARGES

SACRAMENTO COUNTY

The following Discharger is subject to waste discharge requirements (WDR's) set forth in this Order:

Table 1. Discharger Information

Discharger:	Aerojet Rocketdyne, Inc.
Name of Facility:	Groundwater Extraction and Treatment Systems ARGET, GET EF, GET HA, GET J, GET KA, GET LA, GET LB, GET AB, White Rock GET, Sailor Bar Park Well, Golden State Water Wells and Low Threat Discharges
Facility Street Address:	Aerojet Road
Facility City, State, Zip:	Sacramento, CA 95913-6000
Facility County:	Sacramento County

The Discharger is authorized to discharge from the discharge points as set forth in Table 3 on page 2 of this order.

Table 2. Administrative Information

This Order was Adopted on:	**<Enter Adoption Date>**
This Order shall become effective on:	**<Enter Effective Date>**
This Order shall expire on:	**<Enter Expiration Date>**
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a NPDES permit no later than:	**1-year prior to Order expiration date**
The United States Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Minor discharge**

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **[Enter DATE]**.

PATRICK PULUPA, Executive Officer

Table 3. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
Outfall 001	Treated Groundwater from ARGET, GET EF, GET J, GET AB, White Rock GET, Cooling Tower 20019	38º, 38’, 00” N	121º, 16’, 07” W	Buffalo Creek to American River
Outfall 002	Treated Groundwater from GET LA	38º, 36’, 29” N	121º, 18’, 33” W	American River
Outfall 002A	Treated Groundwater from GET LB	38º, 37’, 31” N	121º, 18’, 13” W	Drainage Ditch to American River
Outfall 003	Outfall no longer proposed for use	38º, 36’, 53” N	121º, 18’, 10” W	Drainage Ditch to American River
Outfall 004	Treated Groundwater from GET KA and AC-6	38º, 36’, 07” N	121º, 19’, 02” W	Drainage Ditch to American River
Outfall 005	Treated Groundwater from AC-23	38º, 34’, 46” N	121º, 19’, 42” W	Boyd Station Channel to American River
Outfall 006	Treated Groundwater from GET HA and AC-18	38º, 32’, 18” N	121º, 18’, 59” W	Morrison Creek
Outfall 007	Treated Groundwater from Sailor Bar GET	38º, 37’, 59” N	121º, 14’, 21” W	Sailor Bar Pond
Outfall 008	Treated Groundwater from Various GETs	38º, 38’, 6” N	121º, 13’, 13” W	American River at Natomas Stilling Basin
Outfall 009	Treated Groundwater from Various GETs	38º, 38’, 12” N	121º, 12’, 11” W	Alder Creek – Tributary to the American River
Outfall 010	Treated Groundwater from White Rock Get to Morrison Creek	38º, 58’, 52” N	121º, 18’, 72” W	Morrison Creek

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I. FACILITY INFORMATION

Information describing the Aerojet Groundwater Extraction and Treatment Facilities is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

The following Discharger is authorized to discharge in accordance with the conditions set forth in this order:

Discharger	Aerojet Rocketdyne, Inc.
Name of Facility	Groundwater Extraction and Treatment Systems
Facility Address	Aerojet Road Sacramento CA 95813 Sacramento County
Facility Contact, Title, and Phone	Mr. Peter Kvam, (916) 355-4212
Mailing Address	P.O. Box 13222 Sacramento, CA 95813-6000
Type of Facility	Groundwater Extraction and Treatment Plants
Facility Design Flows	ARGET – 5.04 million gallons per day (mgd) – Discharge 001, Outfall 001 GET E/F – 11.52 mgd – Discharge 002, Outfall 001 GET HA – 3.9 mgd – Discharge 004, Outfall 005 and/or 006 GET J – 6.75 mgd – Discharge 005, Outfall 001 GET KA– 5.11 mgd – Discharge 007, Outfall 004 GET LA – 2.88 mgd – Discharge 008, Outfall 002 GET LB – 1.44 mgd – Discharge 009, Outfall 002 Sailor Bar Pond – 0.58 mgd – Discharge 010, Outfall 007 AC-6 – 1.08 mgd – Discharge 013, Outfall 004 AC-18 – 2.59 mgd - Discharge 014, Outfall 006 GET AB – 5.76 mgd- Discharge 016, Outfall 001 White Rock GET – 2.88 mgd-Discharge 017, Outfall 001and/or Outfall 010 Cooling Tower 20019, - 0.0008 mgd - Discharge 019, Outfall 001

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Central Valley Water Board), finds:

A. Background. The Aerojet Rocketdyne, Inc. (hereafter, Discharger) is currently discharging under Order No. R5-2011-088 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0083861. The Discharger originally submitted a Report of Waste Discharge, dated 11 April 2005 and supplemental information dated 28 April 2005 and 12 May 2005, and applied for a NPDES permit revision to discharge up to 39.09 mgd of treated groundwater from up to eleven groundwater extraction and treatment systems (GETs), with two of them being temporary.

The Discharger submitted a request dated 9 July 2007 to modify the effluent limitation for N-nitrosodimethylamine (NDMA) for GET J, and future treatment systems GET KA, GET LA and GET LB. The adopted permit at the time, Order No. R5-2006-013, contained an interim effluent limit for NDMA for GET J of 0.010 micrograms per liter (µg/L) to allow an evaluation of the technical and economic issues regarding removal of NDMA. The Discharger provided sufficient information to allow the effluent limitation for NDMA for GETs J, K, LA and LB to be set at 0.007 µg/L. Further detailed discussion of this issue is found in Attachment F. In addition, in June 2007 the California Office of Health Hazard Assessment revised the Public Health Goal for NDMA from 0.002 µg/L to 0.003 µg/L. The Regional Water Board revised the NPDES permit with the adoption of Order No. R5-2007-0165, modifying the effluent limitations for NDMA.

In 2008, the Discharger requested a revision to the effluent limitation for trichloroethylene (TCE) for the GET EF discharge (Discharge 002). The combination of treatment technologies at the GET EF system, utilizing the best available technologies for removal of volatile organics (which includes TCE), NDMA and perchlorate was demonstrated to not consistently meet the effluent limitation for TCE due to low concentrations of biosolids carryover from the perchlorate treatment system. The original effluent limitations for TCE were 0.5 µg/L for the monthly average and 0.7 µg/L for the daily maximum. The Primary Maximum Contaminant Level for TCE is 5.0 µg/L and the California Public Health Goal (one-in-a-million excess cancer risk) has been established by the California Office of Health Hazard Assessment at 1.7 µg/L. Resolution No. R5-2009-0016 revised the Effluent Limitation for TCE for GET E/F to1.5 µg/L. None of the other discharge effluent limitations for TCE covered by the order were modified. The same issue applies to cis-1,2-DCE, a breakdown product of TCE and subject to the same carryover issue. This order applies a limit of 1.5 µg/L for cis-1,2-DCE for the discharge from GET E/F. The MCL for cis-1,2-DCE is 6 µg/l and the Public Health Goal is 100 ug/L.

After adoption of Order No. R5-2007-0165, the Discharger completed the construction of GET K-A and discontinued the operation of interim GET K and interim GET H. The Discharger submitted a revised Report of Waste Discharge dated 21 May 2009 requesting the addition of three new discharges associated with municipal water supply wells and several minor modifications. Three municipal water supply wells will be equipped with treatment units to remove pollutants associated with plumes in groundwater emanating from the Discharger's property. The treated water would initially be discharged to the stormwater drainage system for two to four months prior to allowing the water to be supplied for potable purposes. One well would be operated on a continuous basis to help clean up the groundwater. Thus, at times, the treated

water from the well would be discharged to the storm drain when the water was not needed for potable supply. The other two wells would be operated on an as-needed basis with the water going to the distribution system. All the wells would have periodic discharges of 1-2 minutes in duration during well startup and shutdown to minimize pressure issues within the distribution system.

The minor changes requested by the Discharger included:

a. Changing the names of GET L-1 to GET LB, GET L to GET LA, and GET K to GET KA;
b. moving the outfall from GET LA to the American River (Outfall 002) approximately 1,900 feet downstream; and
c. moving the discharge from GET KA from Outfall 003 to Outfall 004 in response to a request from the City of Rancho Cordova.

In addition, the Discharger requested allowing removal of the perchlorate treatment system on the Chettenham well, while continuing to operate the well with discharge to the storm drain in order to evaluate the continued operation on groundwater pollution containment. The concentrations of perchlorate have dropped from a high of over 90 µg/L to less than 4 µg/L. The effluent limitation in the existing permit is 4 µg/L. The PHG and MCL for perchlorate are both 6 µg/L. The effluent limitation for perchlorate for the discharge from the Chettenham well treatment system is revised to 6 µg/L when there is no treatment system on the well. However, if treatment is subsequently restarted, the effluent reverts to the 4 µg/L value, based on best available technology.

After the adoption of Order No. R5-2010-0039, the Discharger constructed the three treatment systems on the three municipal supply wells, AC-6, AC-18 and AC-23 and commenced operation of the AC-6 and AC-18 well systems. The construction and potential operation of the three systems changed from what was anticipated in the 2010 revision to this permit.

Water is periodically discharged to the storm drain from each of these systems during startup and shutdown to ease pressure on the distribution system, and during ion exchange resin rinsing operations. These discharges are generally of low volume (1000-8000 gallons) and occur infrequently. There may be instances where the discharge will last up to four days if bacteria are found after resin change-out. These discharges fit within the parameters listed for Discharge Point 12.

During the initial testing of the treatment systems for AC-18 and AC-23, it was noted that fine particles entered the system during the first 10 minutes of startup of the water supply well. In order to prevent clogging of the ion exchange resin, the two systems were plumbed to allow the fines to dissipate prior to sending the water through the resin. Those first few minutes of flow are considered well purging and will be discharged to the storm drain under Discharge Point 12. More recently, the concentration of perchlorate at AC-18 exceeded the allowable discharge limitation for Discharge Point 12. As such, Aerojet eliminated the possibility to discharge to the storm drain prior to the ion exchange treatment. The Discharger is currently evaluating options to remove solids from this water during initial startup. During this time, startup water is being discharged to the sanitary sewer. Subsequent discharges that are not during well startup and shutdown are covered under Discharge Point 13 for AC-6,

Discharge Point 14 for AC-18 and Discharge Point 15 for AC-23. It is anticipated that these discharges will rarely occur.

The last change made to R5-2010-0039 was to the time schedule for compliance with the effluent limitation for the ARGET facility. As USEPA was delayed in its order to Aerojet to implement the Record of Decision for Operable Unit 5 (issued September 2011), that includes the ARGET facility, implementation of the remedy and upgrade of the ARGET facility was also delayed. It was estimated that the construction of the perchlorate treatment facility at ARGET would occur by 1 December 2013. The schedule was changed to reflect this information.

The Board adopted Order No. R5-2011-0088 in December 2011 to include the changes in the preceding four paragraphs. Aerojet submitted a revised Report of Discharge on

8 March 2013 requesting several new changes be made to the permit. Order No. R5-2013-0155 was adopted in December 2013 to modify the permit accordingly. Those modifications included two additional treatment facilities and associated discharge options with those treatment facilities and the modifications of GET E/F and ARGET. The first of the additional facilities was GET AB located on the southeastern side of Aerojet. Construction combined the GET A and GET B treatment facilities that were constructed in the mid1980's. The new single treatment system treats extracted groundwater to remove volatile organics, perchlorate and NDMA. Historically the effluent from the GET A and GET B facilities was discharged to Rebel Hill ditch where it percolated into the subsurface. The treated groundwater now has several different disposal options that could be used at any one time. The effluent can be placed into Aerojet's industrial water supply system, provided to Teichert Aggregates for use in the sand and gravel supply operation on Grant Line Road, discharged to Rebel Hill Ditch as has been done in the past, or discharged to Buffalo Creek on the Aerojet site. The discharge from Aerojet's industrial facilities that will utilize the water from GET AB is regulated by Order No. R5-2013-0156. The Teichert facility operates under Waste Discharge Requirements, Order No. R5-2002-0123. The Discharger may utilize any combination of the discharge options for GET AB at any given time. The GET AB facility was expanded to accommodate additional extraction wells with the construction of additional ultra-violet reactors and ion exchange vessels for the removal of volatile organic constituents, NDMA and perchlorate.

For the GET AB facility, the influent contains volatile organics consistently primarily of TCE, chloroform and Freon, perchlorate and NDMA. Concentrations in influent to the facility are up to 24 µg/L TCE, 55 µg/L 1,1-DCE, 4.7 µg/L NDMA, 64 µg/L perchlorate and 190 µg/l Freon 113.

The second additional treatment system was the White Rock GET. The White Rock GET is designed to intercept the downgradient portion of the groundwater contamination extending south from the former White Rock Road North Dump. The extraction system for the former dump has two separate components. The component at the southern edge of the former landfill is utilized to capture the high concentrations of volatile organics associated with the septage receiving facility on the dump. A chlorine system has been installed at this location to assist with preventing biofouling of these wells. The extracted groundwater from this component is piped (after

chlorination) to the GET AB facility for treatment and discharge. The second component consists of two extraction wells farther to the south to capture the leading edge of the plume. The extracted groundwater is piped to the White Rock North Dump Treatment Facility. The water is treated to remove volatile organics and perchlorate. The treatment system also receives water from the Teichert water supply well. The White Rock North Dump Treatment facility and discharge was brought under Order R5-2013-0155. The treated water is supplied to the Teichert Aggregate Processing Plant on Grant Line Road for their sand and gravel supply operations or piped to GET AB for discharge.

For the White Rock GET the two extraction wells currently have VOCs – primarily TCE and cis-1,2-DCE, and perchlorate. NDMA is found in monitoring wells upgradient and non-detect (<0.39 ng/L) in the White Rock GET extraction wells. Aerojet is developing a plan to provide containment prior to the extraction wells. The permit requires sampling and effluent limits for NDMA in the event that capture is not provided in time. Recent data shows concentrations of TCE at 67 µg/L, 5.8 µg/L cis-1,2-DCE and 25 µg/L perchlorate in the extraction wells for the White Rock GET.

The extraction wells on the White Rock North Dump that are treated at GET B are experiencing biofouling problems. Prior to the permit revision, and while the discharge was going to Rebel Hill Ditch for infiltration, the Discharger evaluated the addition of sodium hypochlorite at the wells and measured the concentration in the discharge from GET AB. This evaluation showed that the addition of 50 mg/L of 12.5% sodium hypochlorite solution into each of the wells did not result in a chlorine residual greater than 0.01mg/L in the GET B effluent. An effluent limitation for chlorine and a requirement for monitoring chlorine were included for GET AB.

GET EF was modified to allow an increase in treatment capacity. This modification was needed to handle additional extraction wells to control plume migration. The expansion included the addition of ion exchange vessels to remove perchlorate, an air stripping tower and bag filters to bring the treatment capacity to 8,000 gpm. The ion exchange units are used on the flow from those extraction wells that have low concentrations of perchlorate while the higher concentrations continue to be treated with the existing biological system. The modifications also include the addition of a screw press to dewater the biosolids generated by the biological perchlorate treatment system. A cationic emulsion-based polyamide polymer used in drinking water treatment is used to assist in the dewatering of the solids in the screw press. The residual liquid from the screw press is returned to the influent to the clarifier, as described below in the facility descriptions section.

The ARGET facility was modified to allow it to receive the flows from the extraction wells that used to be connected to the GET D facility. That facility was removed from service to allow for future development of the property. The ARGET modifications include bag filters and ion exchange vessels to remove perchlorate.

R5-2013-0155 also allowed an increase in flow at the Sailor Bar GET discharge to Sailor Bar Pond from 250 gpm to 400 gpm to allow for additional extraction wells for capture of the groundwater contaminant plume in that area. Since then, Aerojet connected the Sailor Bar system to the ARGET facility so only the amount of water

necessary to keep the Sailor Bar Pond full is sent through the Sailor Bar treatment system. The remainder will be treated at ARGET.

On 7 April 2014 the Discharger submitted a revised Report of Waste Discharge requesting the addition of an additional discharge and discharge point. The Discharger is in the process of constructing additional extraction wells in the area served by the GET J treatment facility. In order to provide some of the treatment capacity at GET J to treat the flow from the new extraction wells, the Discharger requested that extraction Well 4665 be allowed to discharge without treatment to a storm drain that empties into Buffalo Creek just downstream of the discharge from GET J.

A review of the data from the extraction well, extraction and monitor wells in the vicinity of well 4665 and monitor wells upgradient of well 4665 was performed to evaluate the efficacy of the proposed discharge. The review of that data showed that there are consistent detections of TCE, NDMA and chloroform in well 4665. TCE and NDMA concentrations in well 4665 have steadily decreased since the well began operation in 2005. Since 2010 the concentrations of TCE ranged from a high of 3.3 µg/L in early 2010 to a low of 1.7 µg/L in the middle of 2013. NDMA concentrations over that same period have dropped to estimated concentrations of 0.0014J and 0.0015J µg/L in the latest sampling. Chloroform also dropped to below 0.8 µg/L in 2013/2014. Upgradient extraction wells and monitor wells in the vicinity of well 4665 have also had similar rates of decrease. This indicates that the concentrations should continue to decrease in well 4665. The concentrations of NDMA and chloroform currently found in, and projected to decrease, are less than the effluent limitation for GET J for those two pollutants. TCE is the only pollutant that is found in well 4665 that has a concentration higher than the GET J effluent limitation and the last sample from that well is at the Public Health Goal (incremental $1x10^{-6}$ excess cancer value) for TCE of 1.7 µg/L. Further, mixing with the discharge from GET J (assuming TCE is at the effluent limitation of 0.5 µg/L) reduces the concentration to 0.7 µg/L. The concentration reduces even further if the flows from GET EF and ARGET in Buffalo Creek are considered.

The effluent tables in the permit were modified by listing the individual volatile organic constituents for which the limits apply. The previous version of the effluent limit tables called for a limit on all constituents listed in EPA Method 8260, which includes well over one hundred constituents. Monitoring of the groundwater for volatile organics during the past 30 years has allowed the list of volatile organics of concern to be significantly reduced. This is particularly the case for the contaminant plumes that are farther downgradient from the source areas. The Discharger is still required to monitor, and report results for the entire EPA Method 8260 short list suite of constituents.

Some additional text was added to help clarify the operation and effluent limitations for the discharges from Golden State Wells (AC-6, AC-18 and AC-23) and the treatment systems associated with each of the three wells. Modifications have been made to those systems which have ramifications on monitoring and points of discharge. In addition, the discharge from the Chettenham well was deleted from the permit and the treatment system has been removed.

The discharge flow limit for GET HA was increased from 2000 gpm to 2400 gpm. The technologies utilized at GET HA can process higher flow rates than 2400 gpm as it

would only cause an increase in GAC and ion exchange resin change outs. However, the plant is limited hydraulically by pressure buildup within the treatment vessels. It is estimated that to contain the groundwater contaminant plume by GET HA pumping an average flow of 2160 gpm is needed. During low pressure times flows up to 2400 can be processed and during higher pressure times the flow will likely be less than 2160 gpm. If it is found that sufficient flow to contain the contaminant plume cannot be handled by the existing system, then improvements will need to be made.
This permit also continued to allow Aerojet to discharge low-threat discharges consisting of monitor well, extraction well and water supply well development water, purge water and extraction and supply well aquifer test water. Those discharges are subject to similar effluent limitations as established for the GETs.

In August 2017 the permit was revised with the adoption of Order R5-2017-0095. There were a few changes to the permit that could be considered significant. First, an evaluation of the best available technology limits was conducted, primarily for the GET EF and GET AB facilities where occasional violations of effluent limits have occurred. These two facilities receive the highest concentrations of pollutants and are the most complex operated by the Discharger. A similar evaluation was done in the past for select volatile organics at the GET EF facility. That resulted in a revision to the effluent limits for TCE and cis-1,2-dichloroethene. The revision was justified based on the interference created by the biological reduction treatment system on the ability of the follow-on treatment systems to remove those two constituents.

A biological treatment system at GET EF is used to reduce the high concentrations of perchlorate in the influent to the plant. Alcohol is used to provide a food sources to sustain the bacteria population and allow for sufficient reduction in perchlorate concentrations. Insufficient concentrations of alcohol will cause a decrease in the bacteria and higher concentrations of perchlorate in the discharge. Excess alcohol can cause formation of formaldehyde and acetaldehyde in the UV/peroxide treatment system downstream of the biological system. There had been periodic violations of effluent limits for these two constituents. Balancing the correct amount of alcohol to result in meeting effluent limitations for perchlorate while not having too much excess alcohol leaving the biological system and cause the formation of concentrations of formaldehyde and acetaldehyde over their respective effluent limitations is not always achieved. It has been determined that Best Available Technology limits for GET EF are not the same as a stand-alone biological treatment or ion-exchange for the removal of perchlorate. The Water Quality Based Effluent Limit of 6 µg/L (MCL) is therefore used as the monthly average effluent limit for perchlorate at GET EF. This was a change from the previous limit of 4 µg/L. The daily maximum effluent limitation was changed from 6 µg/L to10 µg/L based on data collected from the last 10 years of sampling the effluent of GET EF.

Another added feature in the permit is a table in the Operations and Maintenance section of this permit (Section VI.C.4). This table provides the values for each constituent that the Discharger is required to design and operate in accordance with best standard practices to meet. These would be the Best Available Treatment technologies for individual treatment units and in most instances are the same as those found in the effluent limitations and are less than or equal to the Water Quality Based Effluent Limitations. The differences between the table in the Operations and

Maintenance section and the effluent limitations tables are due to specific issues with those GET systems, including the various combinations of treatment technologies and quality of the influent.

The Discharger requested that the White Rock GET flow limit be changed from 900 gpm to 1415 gpm. The treatment system has always had the capacity to treat 1415 gpm but lacked the pumping capacity to put that flow through the plant. The Discharger will be adding that pumping capacity and has a commitment to supply Teichert with that volume of flow from the facility to meet Teichert's production demands for washwater. The permit increased the allowable discharge rate for the White Rock GET to 1415 gpm.

In 2016 and 2017 Aerojet was requested to sample the GET facilities for perfluorinated compounds (PFAS) by EPA Method 537 modified. The results showed that there were detectable concentrations entering GET EF and GET AB, with the concentrations at GET AB above the USEPA's Health Advisory value of 0.07 µg/L for perflurooctane sulfonate (PFOS) and perflurooctanoic acid (PFOA). The effluent concentrations were below measurable levels, indicating that the treatment system was adequately removing them. The permit was revised to add sampling at GET AB for PFAS.

The Discharger has ceased discharging from extraction well 4665 directly to the storm drain without treatment. The water is now sent to GET J for treatment prior to discharge. Therefore, the well has been removed from the permit as an allowable discharge point.

Since the last permit revision/update, the California State Water Resources Control Board has lowered the Notification Level for 1,4-dioxane from 3 µg/L to 1 µg/L. The GET with 1,4-dioxane found in the influent is the ARGET system and the previous permit had a daily maximum discharge limit of 6 µg/L and a monthly average limit of 3 µg/L, based on the old Notification Level. There is no drinking water standard for 1,4-dioxane. The protectiveness of the old effluent limitations was assessed, along with the ability to adequately measure concentrations at 1 µg/L. The Discharger has consistently had a reporting level for 1,4-dioxane at just under 1 µg/L and therefore the ability to measure is sufficient. A review of the ARGET influent and effluent data shows that the average effluent concentration is near 0.7 µg/L since November 2013. Approximately 20% of the samples exceeded 1 µg/L. The average 1,4-dioxane found in the extraction wells with 1,4-dioxane was 1.6 µg/L, with dilution in the influent provided by extraction wells taking water from 1,4-dioxane-free areas. An effluent concentration of 3 µg/L, along with the dilution provided by GET J and GET EF discharges in Buffalo Creek, would reduce that concentration in the creek to 0.75 µg/L, with significant further dilution in the American River. Thus, leaving the effluent limitation at the current value is still protective of the receiving water. The Discharger is still required to operate the ARGET system in a manner that attempts to meet the goal of 1 µg/L established in Section VI.C.4.

Modifications in this Permit Revision

On 18 June 2020, the Discharger requested modifications to this permit to allow inclusion of a discharge from a cooling tower; increase the allowed discharge rate for the White Rock GET, including UV treatment and adding a new discharge point to the upper reaches of Morrison Creek; increase the allowed discharge rate of GET HA; increase the allowed discharge rate of GET K; eliminate the discharge from AC-23; and, eliminate the pH limitations at the treatment plants. Each of these is discussed further below, with the exception that no changes were made to the pH limitations.

The Aerojet Rocketdyne manufacturing and testing facility has ceased operations and transferred those activities to its other facilities in the United States. As part of that process, the numerous discharges from various operations that were permitted under Order R5-2013-0156 were eliminated except for a cooling tower serving Building 20-019 that remains an active office building. The cooling tower is used for space cooling. Order R5-2013-0156 was terminated and the discharge from 20-019 is now covered under this permit. The cooling tower discharges up to 850 gallons per day to a drainage that connects to Buffalo Creek in the administration area. Under most conditions the discharge never makes it to Buffalo Creek as it evaporates or percolates in an unlined portion of the drainage ditch. An analysis of potential impacts on Buffalo Creek showed that this a *deminimus* discharge due to the extremely low volume and additions of flows from ARGET and GET EF downstream.

The Discharger will be increasing the influent flow from extraction wells to the White Rock GET and including UV treatment for the removal of NDMA. The discharge from that facility currently is discharged with some or all of the GET AB effluent to Buffalo Creek (Discharge Point 017). The Discharger has requested allowance to discharge all of the White Rock GET effluent (up to 2.88.mgd) to Morrison Creek. Morrison Creek is ephemeral, only containing water during stormwater runoff events. The permit has been modified to allow for the increased flow, additional treatment and a new discharge location.

The allowable discharge flowrate for the GET HA facility has been increased by 300 gpm to 3.9 mgd. This to allow for additional flows from the extraction wells. The GET HA facility currently has treatment capacity to allow for the increase in flow.

The allowable discharge flowrate for the GET K facility has been increased from 4.03 mgd to 5.11 mgd. Perchlorate treatment has also been added to the GET K facility. The flow increase will accommodate additional extraction in the GET K capture area and allow for receiving water from Golden State Water Supply well AC-6 for treatment and discharge. AC-6 has low concentrations of perchlorate and TCE but does not treat for TCE and the water is served to their customers. The supply well is not needed for supply purposes but serves to help with contaminant plume containment. If AC-6 is connected to GET K, then Discharger will cease monitoring at Monitor Point M-013 as the discharge from AC-6 will no longer occur at Outfall 004, Discharge Point 007. GET K will continue to discharge to Outfall 004.

Discharge Point 008 and Monitor Location 015 are associated with the discharge from Golden State Water Supply Well AC-23. That well is no longer and therefore the Discharge Point and Monitor Location have been deleted from this permit.

B. Legal Authorities. This Order serves as waste discharge requirements (WDR's) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge locations described in Table 3 subject to the WDR's in this Order.

C. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of Public Resources Code. Additionally, the adoption of land discharge requirements for the Facility constitutes permitting of an existing facility that is categorically exempt from the provisions of CEQA pursuant to California Code of Regulations (CCR), title 14, section 15301.

D. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, in addition to the Findings above, is hereby incorporated into and constitutes Findings for this Order. Attachments A through H are also incorporated into this Order.

E. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B <and specify any others from subsection VI.C Special Provisions such as Title 22, or equivalent, disinfection requirements and related sections (filtration specs and UV specs)> are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. Water Quality-based Effluent Limitations (WQBELs). Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. 40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where

reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2011)*, for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." Table II-1 of the Basin Plan identifies the beneficial uses of certain specific water bodies. The Basin Plan does not specifically identify beneficial uses for Buffalo Creek, Alder Creek, Sailor Bar Pond or Morrison Creek, but does identify present and potential uses for the American River and Sacramento Rivers to which those creeks drain. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Buffalo Creek, Morrison Creek, Alder Creek, the Sacramento River, the American River and Sailor Bar Pond are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002, 005, 016, 017, 018 and 019	Buffalo Creek and Alder Creek, Tributary of the American River	Existing: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.
004, 014, and 017	Morrison Creek, Tributary of the Sacramento River	Existing: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD
007, 009, 012, and 013	American River	Existing: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.
010	Sailor Bar Pond, Potentially tributary to American River	Existing:MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

J. State Implementation Policy. On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. A Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the effluent limit based on the objective or criteria.

The Compliance Schedule Policy and the SIP do not allow compliance schedules for priority pollutants beyond 18 May 2010, except for new or more stringent priority pollutant criteria adopted by USEPA after 17 December 2008.

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules and interim effluent limitations or discharge specifications.

L. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, volatile organics, trichloroethylene, NDMA and perchlorate. The WQBELs consist of restrictions on acute and chronic whole effluent toxicity, chlorine residual, and pH. This Order's

technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21I(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

M. Antidegradation Policy. 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

N. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

O. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged discharging, or who proposes to discharge waste within its region, or any citizen or

domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports."

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

P. Notification of Interested Persons. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

Q. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2017-0095 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facilities, as the Facilities are specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code

D. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

E. **Flow**. Discharges exceeding an average dry weather flow specified in the Table on page 4 of this order under Facility Information, are prohibited.

F. Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal, system in amounts that significantly diminish the system's

capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

G. Discharge of wastewater to Outfall 008 and 009 is prohibited until approved by the Executive Officer. Completion of an adequate assessment of the thermal impacts, including a dilution study in Alder Creek/Lake Natoma, and potential impacts on the Natomas Fish Hatchery associated with those discharges at those two outfalls is required before consideration of approval by the Executive Officer.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

Discharge Points 001, 002, 004, 005, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 019 (Discharge Points 003, 006, 008, 015 and 018 are no longer used)

1. All Discharge Points Notes

a. pH

i. 6.5 Standard Units (SU) as an instantaneous minimum

ii. 8.5 SU as an instantaneous maximum

b. Acute Whole Effluent Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. 70%, minimum for any one bioassay, and

ii. 90%, median for any three bioassays.

c. Chronic Whole Effluent Toxicity. The effluent chronic toxicity shall not exceed 1 chronic toxicity units (as 100/NOEC) AND a percent effect of 25 percent (%) at 100 percent (%) effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a six-week period.

2. Final Effluent Limitations – Discharge Points 001-019

Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations for the ARGET Facility at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 001	mgd	5.04	5.04
Trichloroethylene	micrograms per liter (µg/L)	0.5	0.7
Trichloroethylene	lbs/day	0.02	0.03

Parameters	Units	Average Monthly	Maximum Daily
Tetrachloroethylene	µg/L	0.5	0.7
Tetrachloroethylene	lbs/day	0.02	0.03
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.02	0.03
1,1-Dichloroethylene	µg/L	0.5	0.7
1,1-Dichloroethylene	lbs/day	0.02	0.03
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.02	0.03
1,1-Dichloroethane	µg/L	0.5	0.7
1,1-Dichloroethane	lbs/day	0.02	0.03
1,4-Dioxane	µg/L	3	6
1,4-Dioxane	lbs/day	0.125	0.25
N-nitrosodimethylamine	µg/L	0.004	0.006
N-nitrosodimethylamine	lbs/day	0.00017	0.00025
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.17	0.25

3. Final Effluent Limitations – Discharge Point 002

The Discharger shall maintain compliance with the following effluent limitations for the GET E/F at Discharge Point 002, with compliance measured at Monitoring Location M-002 as described in the Monitoring and Reporting Program, Attachment E:

b. The Discharger shall maintain compliance with the effluent limitations specified in Table 5:

Table 5. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 002	mgd	11.52	11.52
Trichloroethylene [1]	(µg/L)	1.5/3.0	1.5/3.0
Trichloroethylene [1]	lbs/day	0.15/0.29	0.15/0.29
Tetrachloroethylene	µg/L	0.5	0.7
Tetrachloroethylene	lbs/day	0.036	0.05
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.036	0.05
1,1-Dichloroethylene	µg/L	0.5	0.7
1,1-Dichloroethylene	lbs/day	0.036	0.05
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.036	0.05
1,1-Dichloroethane	µg/L	0.5	0.7
1,1-Dichloroethane	lbs/day	0.036	0.05
1,4-Dioxane	µg/L	3	6
1,4-Dioxane	lbs/day	0.125	0.25

Parameters	Units	Average Monthly	Maximum Daily
N-nitrosodimethylamine	µg/L	0.002	0.010
N-nitrosodimethylamine	lbs/day	0.00027	0.00096
Perchlorate	µg/L	6	10
Perchlorate	lbs/day	0.6	0.95
Acetaldehyde	µg/L	5	5
Acetaldehyde	lbs/day	0.51	0.51
Formaldehyde	µg/L	50	50
Formaldehyde	lbs/day	5.1	5.1
Acrylamide	µg/L	0.05	0.05
Acrylamide	lbs/day	0.005	0.005

1. The daily maximum value is 1.5 µg/L, except during times when the Discharger is making operational changes to correct effluent exceedances from GET E/F. During those times, the daily maximum effluent limitation is 3.0 µg/L when approved by the Executive Officer.

4. Final Effluent Limitations – Discharge Point 003

This Discharge Point is no longer used as all extracted groundwater from Area 1 is sent to the GET HA (Discharge 004) facility.

5. Final Effluent Limitations – Discharge Point 004

The Discharger shall maintain compliance with the following effluent limitations for the GET HA facility at Discharge Point 004, with compliance measured at Monitoring Location M-004 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 6:

Table 6. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 004	mgd	3.9	3.9
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.0162	0.022
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.0162	0.022
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.13	0.195

6. Final Effluent Limitations – Discharge Point 005

The Discharger shall maintain compliance with the following effluent limitations for the GET J Facility at Discharge Point 005, with compliance measured at Monitoring Location M-005 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 7:

Table 7. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 005	mgd	6.75	6.75
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.028	0.04
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.028	0.04
1,1-Dichloroethylene	µg/L	0.5	0.7
1,1-Dichloroethylene	lbs/day	0.028	0.04
N-nitrosodimethylamine	µg/L	0.007	0.010
N-nitrosodimethylamine	lbs/day	0.00040	0.00057
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.23	0.34
Chloroform	µg/L	3	5
Chloroform	lbs/day	0.17	0.28

7. Final Effluent Limitations – Discharge Point 006

This Discharge Point is no longer used. The extracted groundwater is now being sent to GET KA described under Discharge Point 007.

8. Final Effluent Limitations – Discharge Point 007

The Discharger shall maintain compliance with the following effluent limitations for the GET KA Facility at Discharge Point 007, with compliance measured at Monitoring Location M-007 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 8:

Table 8. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 005	mgd	5.11	5.11
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.022	0.031
Tetrachloroethylene	µg/L	0.5	0.7
Tetrachloroethylene	lbs/day	0.022	0.031
N-nitrosodimethylamine	µg/L	0.007	0.010
N-nitrosodimethylamine	lbs/day	0.0003	0.0004
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.23	0.34
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.022	0.031

9. Final Effluent Limitations – Discharge Point 008

The Discharger shall maintain compliance with the following effluent limitations for the GET LA Facility at Discharge Point 008, with compliance measured at Monitoring Location M-008 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 9:

Table 9. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 008	mgd	2.88	2.88
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.012	0.017
1,1-Dichloroethane	µg/L	0.5	0.7
1,1-Dichloroethane	lbs/day	0.012	0.017
N-nitrosodimethylamine	µg/L	0.007	0.010
N-nitrosodimethylamine	lbs/day	0.00040	0.00057
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.23	0.34

10. Final Effluent Limitations – Discharge Point 009

The Discharger shall maintain compliance with the following effluent limitations for the GET LB Facility at Discharge Point 009, with compliance measured at Monitoring Location M-009 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 9:

Table 10. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 009	mgd	1.44	1.44
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.006	0.0084
N-nitrosodimethylamine	µg/L	0.007	0.010
N-nitrosodimethylamine	lbs/day	0.000084	0.00012
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.048	0.072

11. Final Effluent Limitations – Discharge Point 010

The Discharger shall maintain compliance with the following effluent limitations for the Sailor Bar Park Facility at Discharge Point 010, with compliance measured at Monitoring Location M-010 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 11:

Table 11. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 010	mgd	0.58	0.58
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.0025	0.0032
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.0025	0.0032
1,1-Dichloroethylene	µg/L	0.5	0.7
1,1-Dichloroethylene	lbs/day	0.0025	0.0032
N-nitrosodimethylamine	µg/L	0.007	0.010
N-nitrosodimethylamine	lbs/day	0.00040	0.00057
Perchlorate	µg/L	4	6
Perchlorate	lbs/day	0.23	0.34
Chloroform	µg/L	3	5
Chloroform	lbs/day	0.17	0.28

12. Final Effluent Limitations – Discharge Point 011

The discharge from the Chettenham Well Facility no longer takes place and this Discharge point is no longer used.

13. Final Effluent Limitations – Discharge Point 012

The discharge of purge water and aquifer test water from monitor wells, extraction wells, and supply wells, including the intermittent start-up and shut-down discharges, and ion exchange rinses associated with Arden Cordova Wells AC-6, and AC-18 shall maintain compliance with the following effluent limitations with compliance measured at Monitoring Point M-012, as described in the attached Monitoring and Reporting Program (Attachment E):

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 12:

Table 12. Effluent Limitations

Parameters	Units	Total Maximum	Daily Maximum
Flow – per monitor well	mgd	0.01	0.01
Flow – per aquifer test of water supply well start up or shut down [1]	mgd	14.4	3.6
Volatile Organics [2]	lbs/day	0.5	--
N-nitrosodimethylamine	µg/L	0.02	--
Perchlorate	µg/L	12	--
1,4-dioxane	µg/L	10	--

[1] Based on an aquifer test of 2500 gpm for 4 days.

[2] All volatile organic constituents listed in EPA Method 8260B short list. The concentration of each constituent shall not exceed 5.0 µg/L, except for those constituents that have a specific limit in the table.

14. Final Effluent Limitations – Discharge Point 013

The Discharger shall maintain compliance with the following effluent limitations for the AC-6 Facility at Discharge Point 013, accept for start-up and shut-down discharges and ion exchange resin rinsing that have final effluent limits assigned under Discharge Point 12, with compliance measured at Monitoring Location M-013 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 13:

Table 13. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 013	mgd	1.08	1.08
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.0046	0.0064
Tetrachloroethylene	µg/L	5.0	5.0
Tetrachloroethylene	lbs/day	0.046	0.046
Perchlorate	µg/L	4,6	6
Perchlorate [1]	lbs/day	0.23	0.34
Chloroform	µg/L	3	5
Chloroform	lbs/day	0.028	0.046

[1] When perchlorate treatment system is being used the limit is 4 µg/L, otherwise it is 6 µg/L.

15. Final Effluent Limitations – Discharge Point 014

The Discharger shall maintain compliance with the following effluent limitations for the AC-18 Facility at Discharge Point 014, accept for start-up and shut-down discharges and ion exchange resin rinses that have final effluent limits assigned under Discharge Point 12, with compliance measured at Monitoring Location M-014 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 14:

Table 14. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 014	mgd	2.59	2.59
Trichloroethylene	µg/L	0.5	0.7
Trichloroethylene	lbs/day	0.0046	0.0064
Perchlorate	µg/L	4,6	6
Perchlorate	lbs/day	0.23	0.34

16. Final Effluent Limitations – Discharge Point 015

Discharge Point 015 is no longer used as AC-23 does not operate any more.

17. Final Effluent Limitations – Discharge Point 016

The Discharger shall maintain compliance with the following effluent limitations for the GET AB Facility at Discharge Point 016, with compliance measured at Monitoring Location M-016 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 15:

Table 15. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 016	mgd	5.76	5.76
Trichloroethylene	(µg/L)	0.5	0.7
Trichloroethylene	lbs/day	0.024	0.034
Tetrachloroethylene	µg/L	0.5	0.7
Tetrachloroethylene	lbs/day	0.024	0.034
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.024	0.034
1,1-Dichloroethylene	µg/L	0.5	0.7
1,1-Dichloroethylene	lbs/day	0.024	0.034
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.024	0.034
1,1-Dichloroethane	µg/L	0.5	0.7
1,1-Dichloroethane	lbs/day	0.024	0.034
1,2-Dichloroethane	µg/L	0.38	0.5
1,2-Dichloroethane	lbs/day	0.019	0.024
N-nitrosodimethylamine	µg/L	0.003	0.010
N-nitrosodimethylamine	lbs/day	0.00033	0.00049
Perchlorate	µg/L	6	10
Perchlorate	lbs/day	0.192	0.289
Chlorine Residual	mg/L	0.1	0.02

18. Final Effluent Limitations – Discharge Point 017

The Discharger shall maintain compliance with the following effluent limitations for the White Rock Facility at Discharge Point 017, with compliance measured at Monitoring Location M-017 as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 16:

Table 16. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Flow – Discharge 017	mgd	2.88	2.88
Trichloroethylene	(µg/L)	0.5	0.7
Trichloroethylene	lbs/day	0.012	0.017
Tetrachloroethylene	µg/L	0.5	0.7
Tetrachloroethylene	lbs/day	0.012	0.017
cis-1,2-Dichloroethylene	µg/L	0.5	0.7
cis-1,2-Dichloroethylene	lbs/day	0.012	0.017
Chloroform	µg/L	0.5	0.7
Chloroform	lbs/day	0.012	0.017
1,1-Dichloroethane	µg/L	0.5	0.7
1,1-Dichloroethane	lbs/day	0.012	0.017
N-nitrosodimethylamine	µg/L	0.003	0.010
N-nitrosodimethylamine	lbs/day	0.00033	0.00049
Perchlorate	µg/L	6	10
Perchlorate	lbs/day	0.096	0.144

19. Final Effluent Limitations - Discharge Point 018

Discharge Point 018 is no longer used as extraction well 445 is sent to GET J.

20. Final Effluent Limitations - Discharge Point 019

a. The total copper concentration shall not exceed 0.7 mg/L as a daily maximum.

B. Land Discharge Specifications – Discharge Points 016 and 017

1. The discharge shall not cause pollution or nuisance as defined by the California Water Code.

2. The discharge of treated groundwater from the White Rock GET shall only be to Teichert for use at is Grant Line Road and/or Scott Road facilities, or to Rebel Hill Ditch, or to the Aerojet Industrial water supply system, or to Morrison Creek, or to Buffalo Creek as shown on Attachment B3, a part of this order.

3. The discharge of treated groundwater from the GET AB facility shall only be to Teichert for use at is Grant Line Road and/or Scott Road facilities, or to Rebel Hill Ditch, or to the Aerojet Industrial water supply system, o to Buffalo Creek as shown on Attachment B3, a part of this order.

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Alder Creek, Buffalo Creek, Morrison Creek or the American River:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen**:
   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
   b. The dissolved oxygen concentration to be reduced below 7.0 at any time.
6. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease**. Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH**. The pH to be depressed below 6.5 nor raised above 8.5.
9. **Pesticides**:
   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR section 131.12.);
   e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
   f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCL's) <set forth in CCR, Title 22, division 4, chapter 15; nor
   g. Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity**:

    a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

    b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

11. **Salinity**. Electrical conductivity 340 µmhos/cm and 120 mg/L TDS.

12. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

13. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

14. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

15. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses [for water bodies in the Sac/SJ Basin] OR or to domestic or municipal water supplies [for water bodies in the Tulare Basin].

16. **Temperature.** The natural temperature to be increased by more than 5° Fahrenheit. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002. [modify if Thermal Plan is applicable].

17. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

18. **Turbidity**.

    a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

    b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

    c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

    d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

    e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.

b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

i. violation of any term or condition contained in this Order;

ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

i. New regulations. New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

ii. Land application plans. When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

iii. Change in sludge use or disposal practice. Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section

307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

    i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

    ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

    i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

    ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to

comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days

of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.

l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

n. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

o. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-

3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including, but not limited to:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened, and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a revised chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State

Water Board revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents.

f. **Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.

g. **Regional Monitoring Program.** The Central Valley Water Board is developing a Regional Monitoring Program for the Sacramento-San Joaquin Delta. This Order may be reopened to modify the monitoring requirements to implement the Regional Monitoring Program.

h. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution No. R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

i. **Diazinon and Chlorpyrifos Basin Plan Amendment.** Central Valley Water Board staff is developing a Basin Plan Amendment to provide an implementation plan for NPDES-permitted domestic wastewater dischargers. This Order may be reopened to modify diazinon and chlorpyrifos effluent limitations, as appropriate, in accordance with an amendment to the Basin Plan.

j. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board Approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. More information regarding these Amendments can be found on the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

   If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** This Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exceeds the chronic

toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.

i. **TRE Work Plan.** The Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer by the due date in the Technical Reports Table. The TRE Work Plan shall outline the procedures for identifying the source(s) of and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with U.S. EPA guidance as discussed in the Fact Sheet (Attachment F, Section VI.B.2.a) and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

ii. **Numeric Toxicity Monitoring Trigger.** The numeric Toxicity Unit (TUc) monitoring trigger is 1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection iii, below.

iii. **Chronic Toxicity Effluent Limitation Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity effluent limitation, the Discharger shall proceed as follows:

(a) **Initial Toxicity Check**. If the result is less than or equal to 1.3 TUc (as $100/EC_{25}$) OR the percent effect is less than 25 percent at 100 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, if the result is greater than 1.3 TUc (as $100/EC_{25}$) AND the percent effect is greater than or equal to 25 percent at 100 percent effluent, proceed to step (b).

(b) **Evaluate 6-week Median**. The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity effluent limitation to evaluate compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as $100/EC_{25}$) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance

Determination Section VII.L for procedures for calculating 6-week median.

(c) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE or participate in an approved TES as described in the following subsections.

(d) **Toxicity Evaluation Study.** If the percent effect is ≤ 50 percent at 100 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(1), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

(e) **Toxicity Reduction Evaluation.** If the percent effect is > 50 percent at 100 percent effluent, as the median of three consecutive chronic toxicity tests within a 6-week period, the Discharger shall initiate a site-specific TRE as follows:

(i) **Within thirty (30) days** of exceeding the chronic toxicity effluent limitation, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
- Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- A schedule for these actions.

b. **Thermal Impacts Associated with Discharge to Outfall 008 or 009.** The Discharger is not permitted to discharge to Outfall 008 and/or 009 until an adequate thermal impact assessment is completed for Outfall 008 and/or 009 that demonstrates that the discharge will not cause an unacceptable thermal impact on the receiving water. The study must demonstrate that the discharge will meet the Water Quality Objectives for temperature found in the Basin Plan. Those objectives state “the natural receiving water

temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not affect beneficial uses" and "at no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5P°PF above the natural receiving water temperature".

3. **Best Management Practices and Pollution Prevention – Not Applicable**

4. **Construction, Operation and Maintenance Specifications**

   a. **Operations and Maintenance Plan. Within 60-days of startup of a GET**, the Discharger shall certify in writing to the Regional Water Board that it has developed an Operation and Maintenance Plan (O&M). O&M plans have already developed for GET E/F, ARGET, GET HA and GET J, GET KA, GET LA and GET LB under previous versions of the permit. The Discharger shall develop and implement the O&M plan to prevent or minimize the generation and discharge of wastes and pollutants to the waters of the United States and waters of the State. The Discharger shall develop and implement an O&M plan consistent with the following objectives:

      i. Maintain in-system production and wastewater treatment technologies to prevent the overflow of any floating matter or bypassing of treatment technologies.

      ii. Inspect the treatment systems on a routine basis in order to identify and promptly repair any damage.

      iii. Ensure storage and containment of chemicals or other materials to prevent spillage or release into waters of the United States, or waters of the State.

      iv. Implement procedures for properly containing, cleaning, and disposing of any spilled material.

      v. Assure that back power is available and working as required in Section VI.A.2.i of this Order

      vi. Keeping records documenting the frequency of cleaning, inspections, maintenance and repairs.

      vii. Adequately training all relevant facility personnel in spill prevention and how to respond in the event of a spill in order to ensure the proper clean-up and disposal of spilled material.

      viii. Training staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and proper use of equipment

5. **Sludge/Biosolids Treatment or Discharge Specifications.**

   a. Collected screenings, sludges, and other solids, shall be disposed of in a manner approved by the Executive Officer and consistent *with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.

b. Any proposed change in solids disposal from a previously approved practice (as described in this Order) shall be reported to this office at least 90 days in advance of the change.

6. Other Special Provisions

a. The Discharger will be reporting results for all constituents from the analysis for volatile organics using EPA Method 8260B Short List under Attachment E, Monitoring and Reporting Program of this this order. The Discharger shall include in their cover letter a list of all positively identified constituents detected in the influent and effluent of the treatment system that do not have a specific effluent limitation. If any positively identified constituent has been found present in the effluent at a concentration above the Practical Quantitation Level during consecutive sampling periods, or more than three times in a twelve month period, the Discharger shall notify Regional Board staff and prepare an evaluation of the source of the pollutant and potential treatment options. If the constituent is found in the influent, then the permit may be reopened, and an effluent limitation established for that pollutant.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. Instantaneous Maximum Effluent Limitation for <Constituents> (Section IV.A. The Discharger shall use U.S. EPA standard analytical techniques with a maximum reporting level not to exceed the minimum levels listed in Appendix 4 of the SIP (Table 2d). If the analytical result of a single effluent sample is detected and the result is greater than or equal to the minimum levels listed in Appendix 4 of the SIP, a violation will be flagged and the discharger will be considered out of compliance for that single sample

B. Volatile Organic Compounds (VOCs) Average Monthly Effluent Limitation (Section IV.A.). VOCs include all constituents listed in U.S. EPA Method 8260B Short List (Attachment I). The average monthly effluent limitation of less than 0.5 µg/L applies to each VOCs, except where a specific limitation is listed. When calculating the average monthly of each VOC, non-detect results shall be counted as one-half the detection level.

C. Mass Effluent Limitations. The mass effluent limitations contained in the Final Effluent Limitations IV.A. are based on the permitted flow and calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

D. Priority Pollutant Effluent Limitations. Compliance with effluent limitations for priority pollutants shall be determined in accordance with section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

a. sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or

b. sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall **not** be deemed out of compliance

E. **Dissolved Oxygen Receiving Water Limitation (Section V.A.).** The Discharger provides a high level of treatment including with no BOD-producing constituents, which results in minimal dissolved oxygen impacts in the receiving water. Monthly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order.

L. **Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.)** To evaluate compliance with the chronic whole effluent toxicity effluent <limitation or trigger>, the median chronic toxicity units (TUc) shall be the median of up to three consecutive chronic toxicity bioassays during a six- week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events. If additional compliance monitoring events are not conducted, the median is equal to the result for routine chronic toxicity monitoring event. If only one additional compliance monitoring event is conducted, the median will be established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

Where the median chronic toxicity units exceed 1 TUc (as 100/NOEC) for any end point, the Discharger will be deemed out of compliance with the chronic toxicity effluent <limitation or trigger> if the median chronic toxicity units for any endpoint also exceed a reporting level of 1.3 TUc (as 100/EC25) AND the percent effect at 100% effluent exceeds 25 percent. The percent effect used to evaluate compliance with the chronic toxicity effluent <limitation or trigger> shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the chronic toxicity effluent limitation.

Where the median chronic toxicity units exceed 2 TUc (as 100/NOEC) for any endpoint, the Discharger will be deemed out of compliance with the chronic toxicity effluent <limitation or trigger> if the median percent effect at **50** percent effluent for the same endpoint also exceeds 25 percent. The percent effect used to evaluate compliance with the chronic toxicity effluent limitation shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the chronic toxicity effluent limitation.

ATTACHMENT A – DEFINITIONS

1Q10
The lowest one-day flow with an average reoccurrence frequency of once in ten years.

7Q10
The lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of

the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effect Concentration (EC)
A point estimate of the toxicant concentration that would cause an observable adverse effect (e.g. death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g. Probit Model). EC_{25} is a point estimate of the toxicant concentration that would cause an observable adverse effect in 25 percent of the test organisms.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Endpoint
An effect that is measured in a toxicity study. Endpoints in toxicity tests may include, but are not limited to survival, reproduction, and growth.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams

that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inhibition Concentration
Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

Method Detection Limit (MDL)
MDL is the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in in 40 C.F.R. Part 136, Attachment B.

Minimum Level (ML)
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

No-Observed-Effect-Concentration (NOEC)
The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Percent Effect
The percent effect at the instream waste concentration (IWC) shall be calculated using untransformed data and the following equation:

$$\text{Percent Effect of the Sample} = \frac{\text{Mean Control Response} - \text{Mean Sample Response}}{\text{Mean Control Response}} \cdot 100$$

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to

another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or Central Valley Water Board.

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum [(x - \mu)^2] / (n - 1))^{0.5}$$

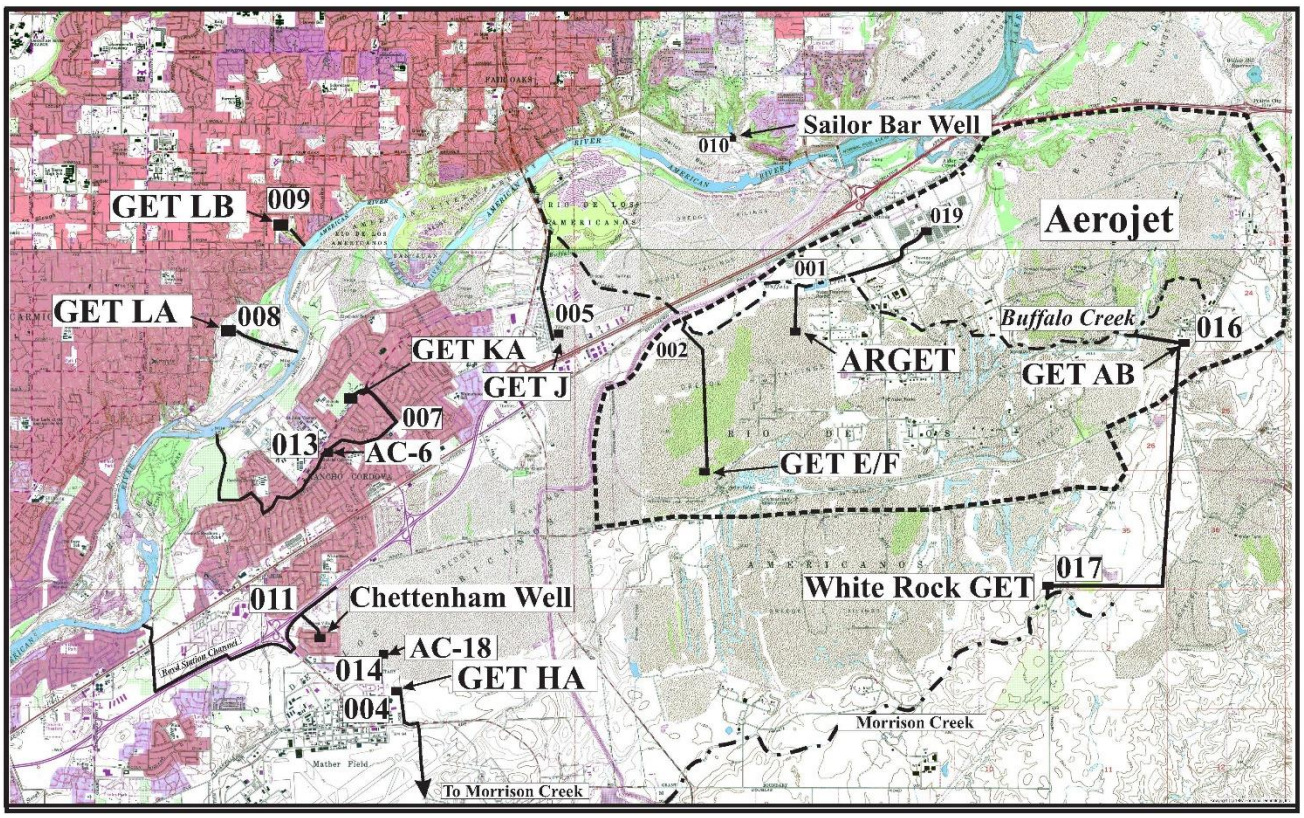
where:

x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

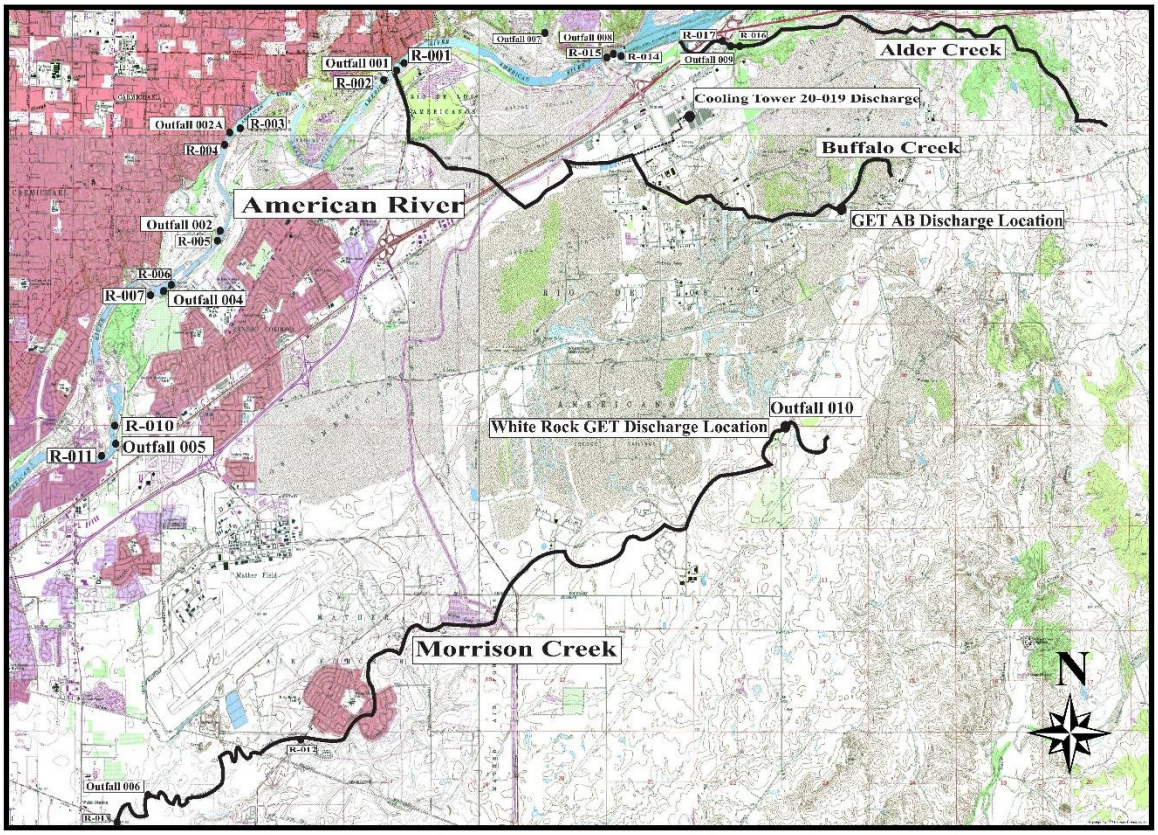
Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a stepwise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – MAPS

Attachment B-1 - Discharge and GET Locations



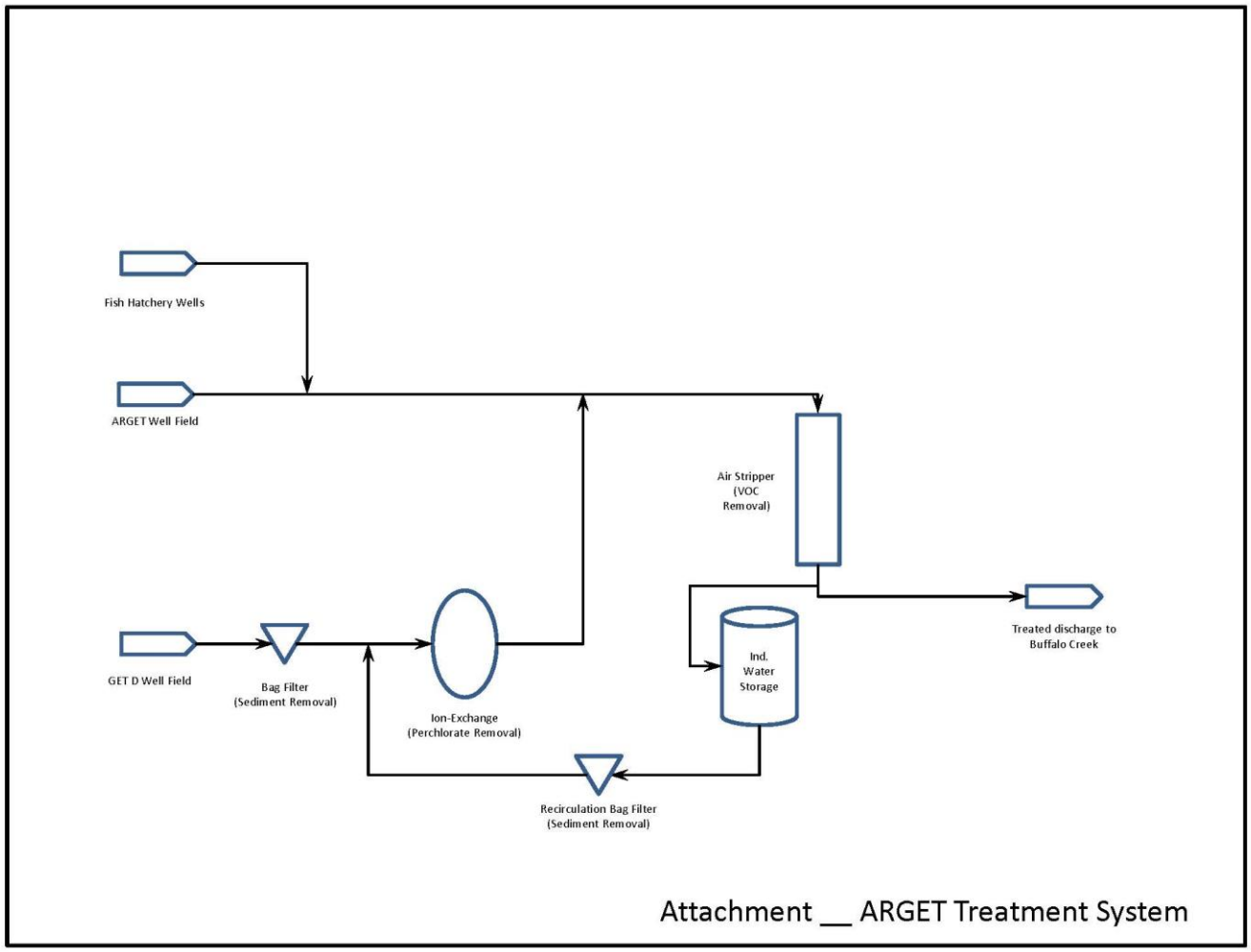
Attachment B-2 - Receiving Water Sample Locations



ATTACHMENT C – FLOW SCHEMATICS

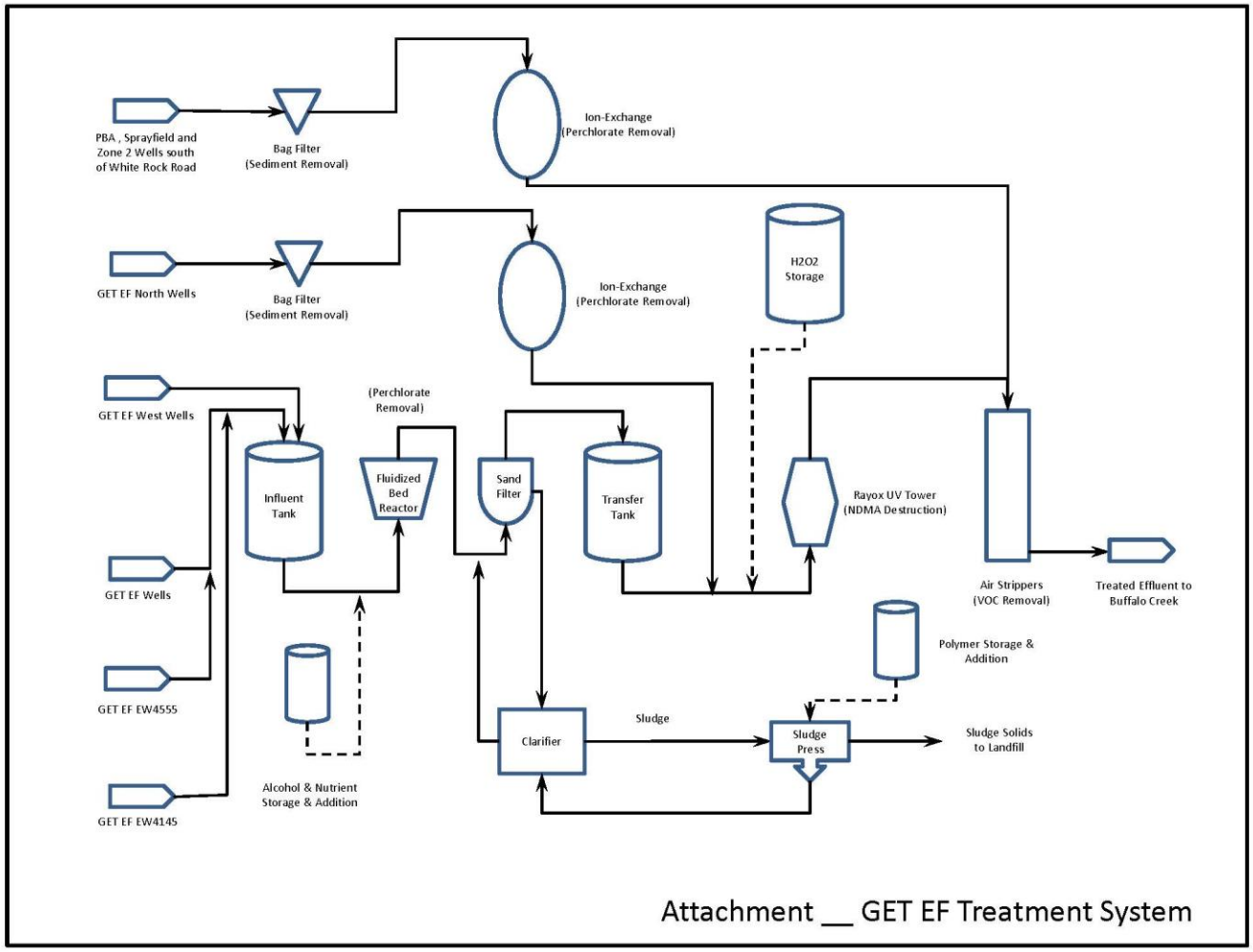
ATTACHMENT C-1

ARGET TREATMENT SYSTEM



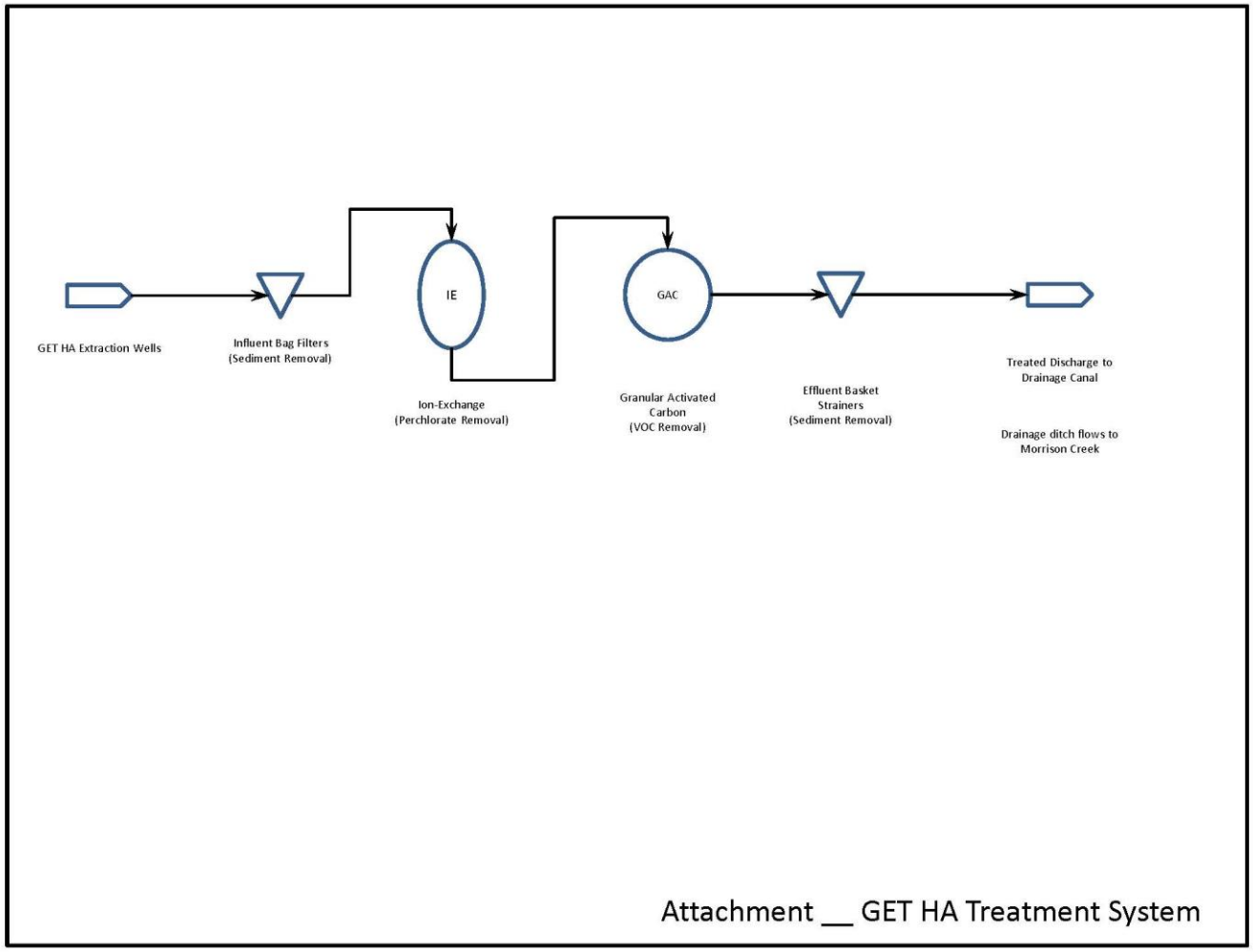
ATTACHMENT C-2

GET EF TREATMENT SYSTEM



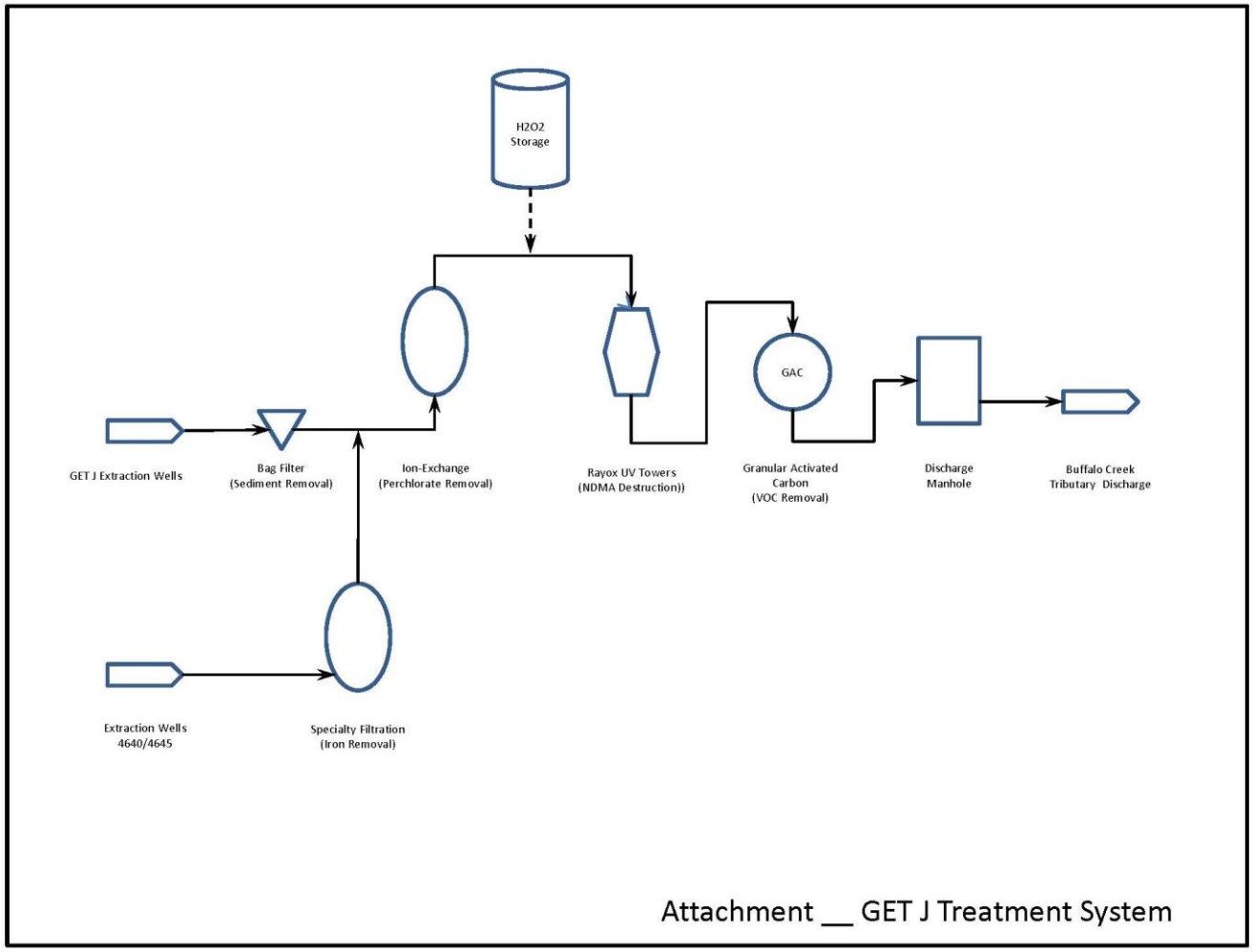
ATTACHMENT C-3

GET HA TREATMENT SYSTEM



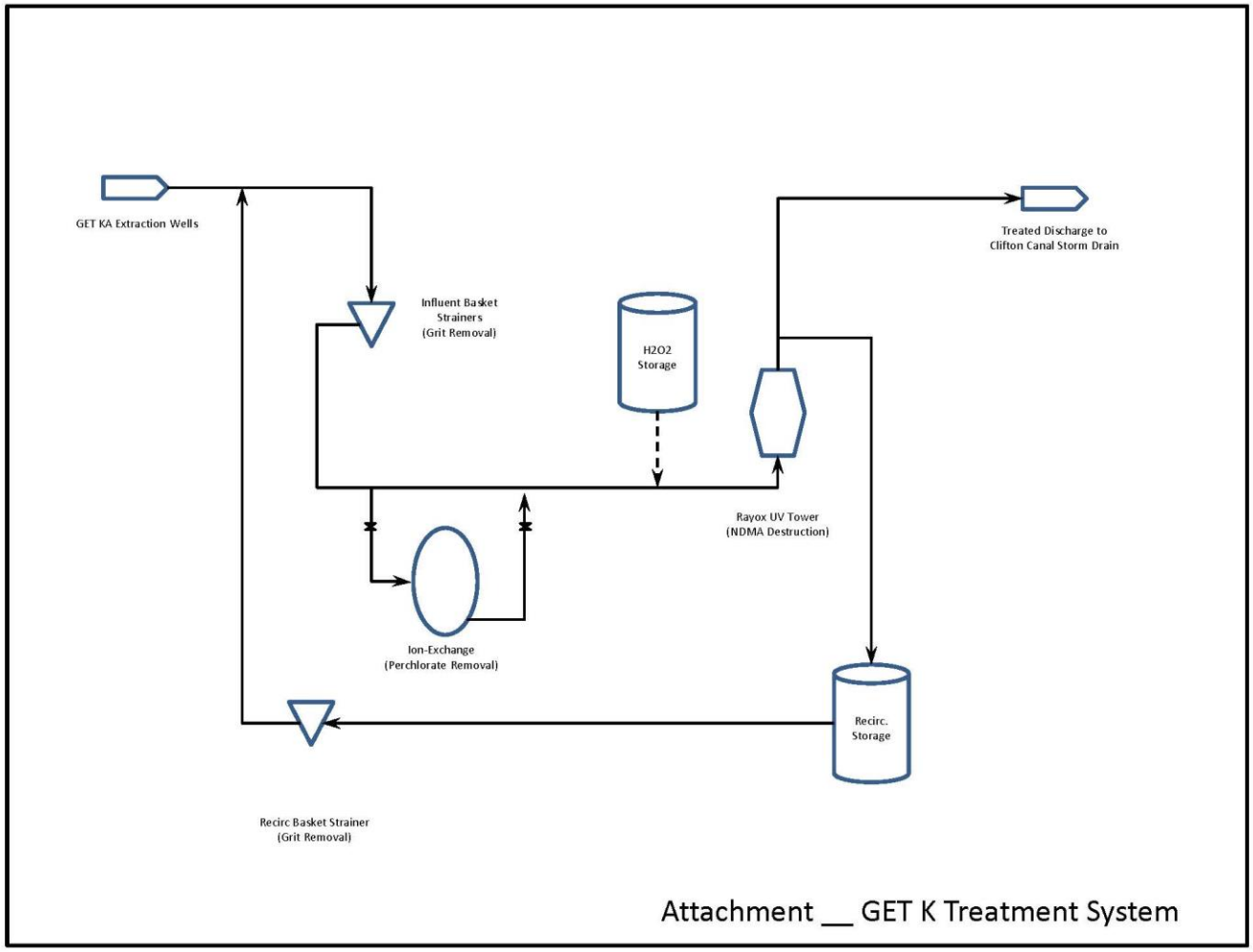
ATTACHMENT C-4

GET J TREATMENT SYSTEM



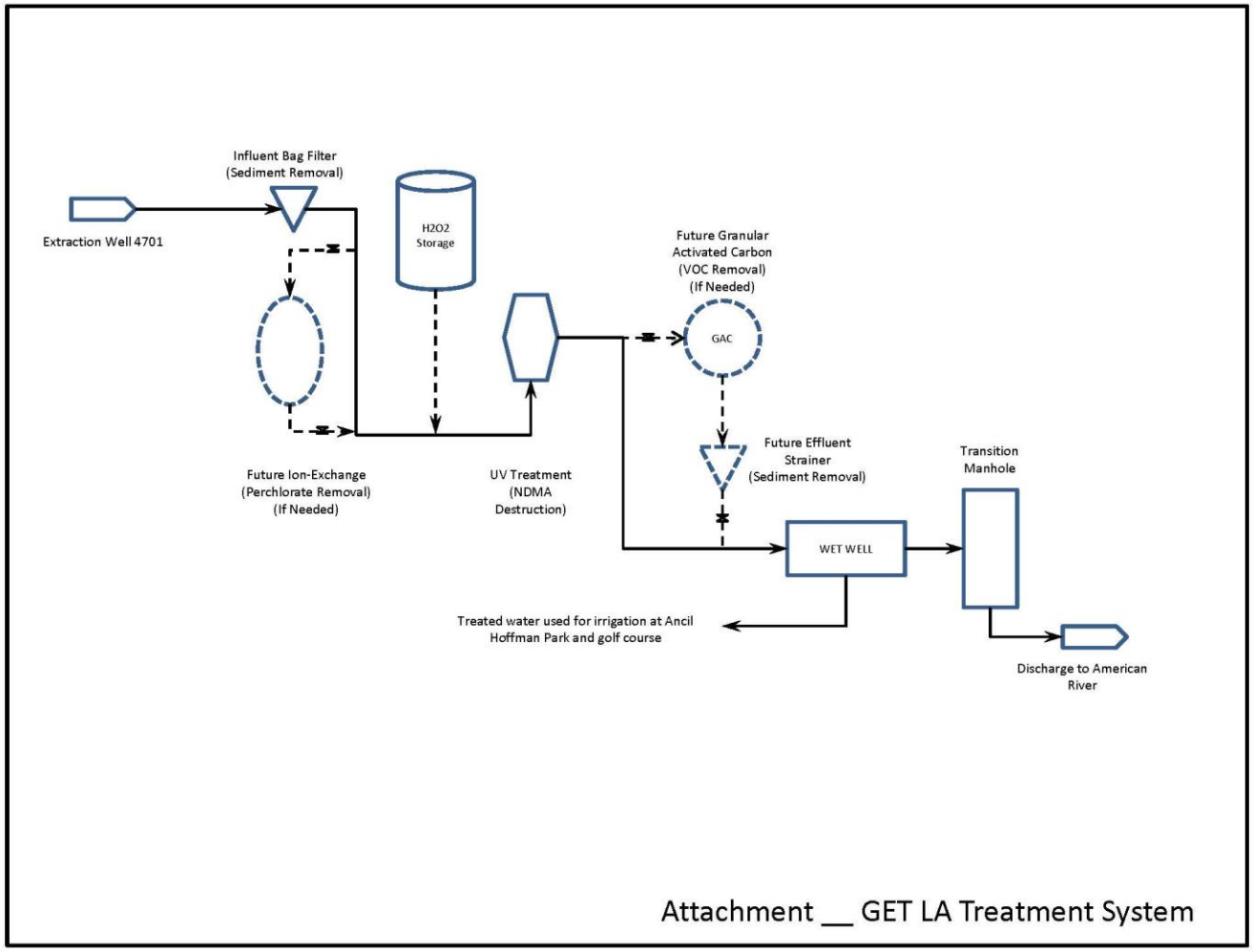
ATTACHMENT C-5

GET K TREATMENT SYSTEM



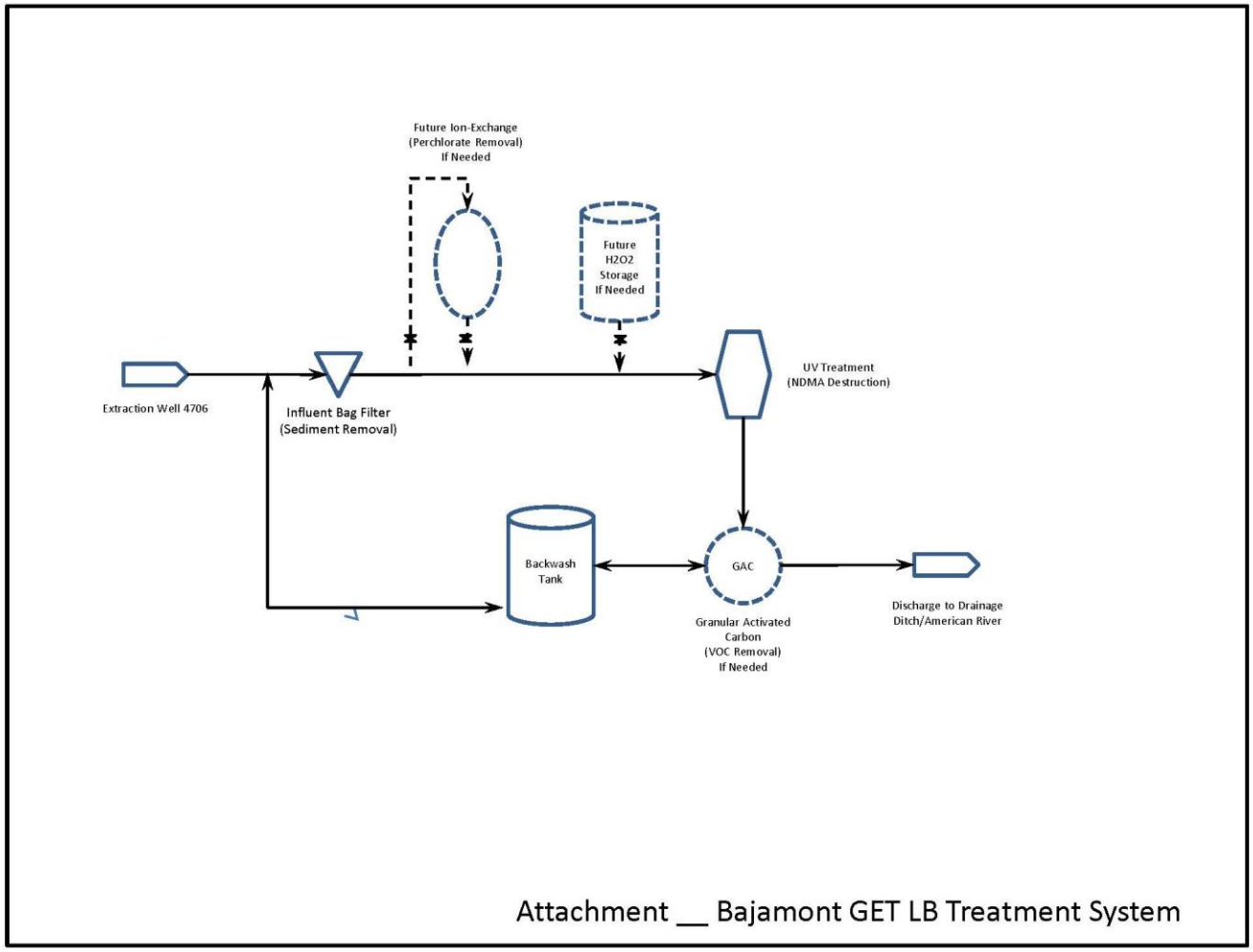
ATTACHMENT C-6

GET LA TREATMENT SYSTEM



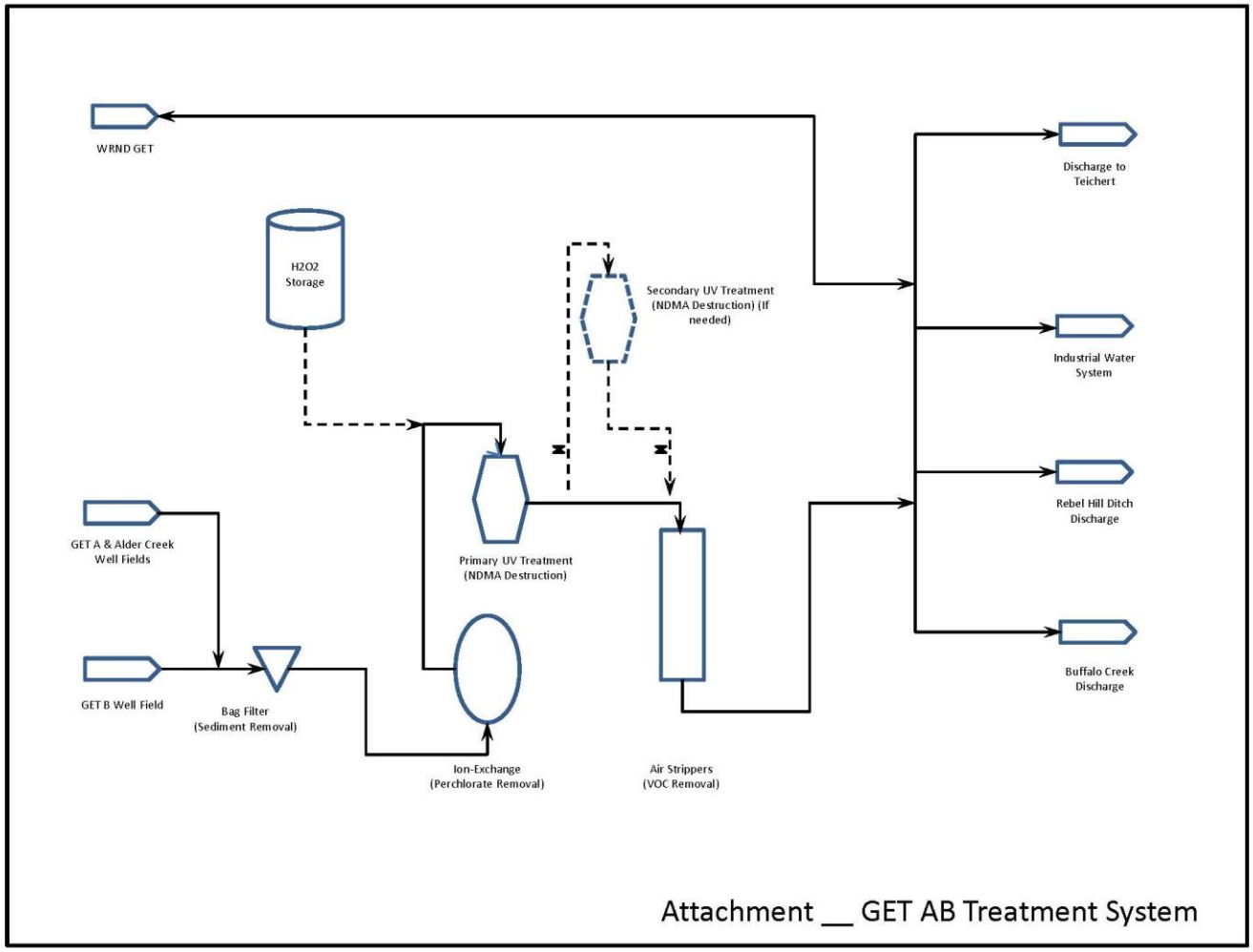
ATTACHEMNT C-7

GET LB TREATMENT SYSTEM



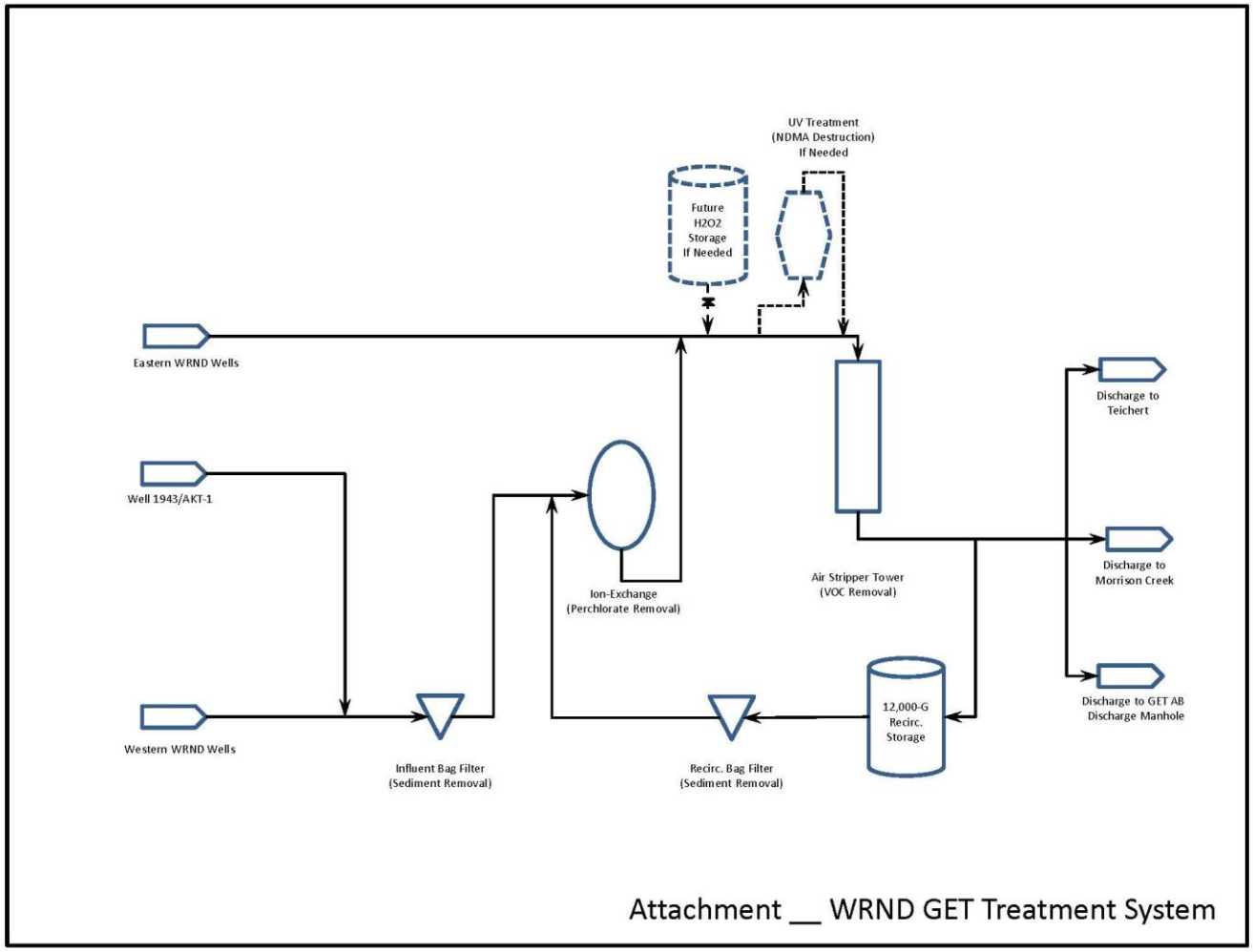
ATTACHMENT C-8

GET AB TREATMENT SYSTEM



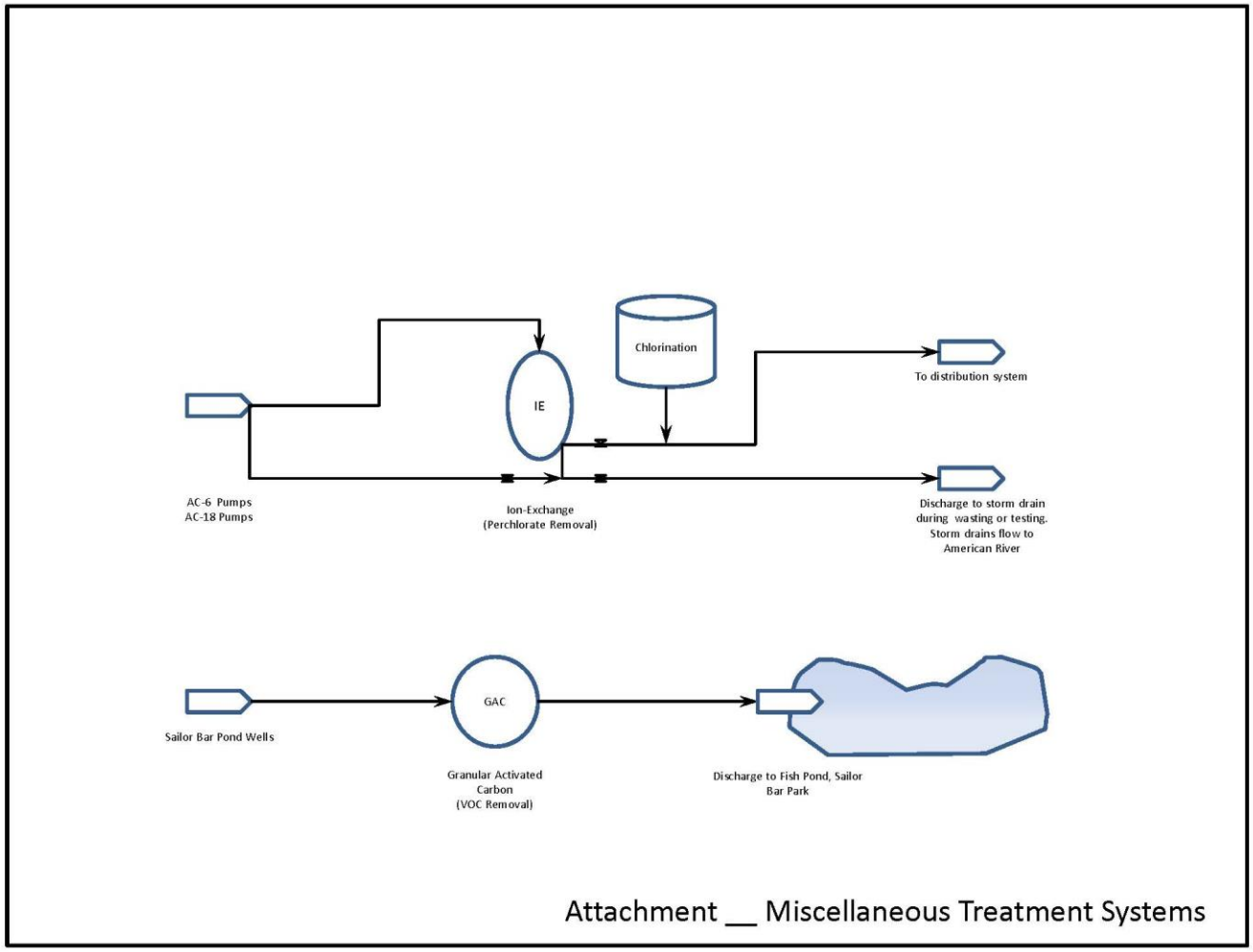
ATTACHMENT C-9

WHITE ROCK ROAD GET



ATTACHMENT C-10

MISCELLENOUS TREAMENT SYSTEMS



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply:

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. section 122.41(a); Wat. Code, sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. section 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. section 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes having adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. section 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. section 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. section 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. section 1318(a)(4)(B); 40 C.F.R. section 122.41(i); Wat. Code, section 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(1); Wat. Code, sections 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(2); Wat. Code, sections 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(3); Wat. Code, section 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C section 1318(a)(4)(B); 40 C.F.R. section 122.41(i)(4); Wat. Code, sections 13267, 13383.)

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. section 122.41(m)(1)(i).)

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. section 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. section 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. section 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. section 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. section 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. section 122.41(m)(4)(ii).)

5. **Notice**

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice if possible, at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. section 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. section 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, thorough properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. section 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. section 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. section 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. section 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. section 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. section 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. section 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. section 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to

sufficiently sensitive test methods approved under 40 C.F.R. Part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when the method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter, or when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and:

   a. The method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter, or;

   b. The method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge;

   In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. Part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. sections 122.21(e)(3), 122.41(j)(4); 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. section 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. section 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. section 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. section 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. section 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. section 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. section 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. section 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. section 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. section 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. section 122.41(h); Wat. Code, sections 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. section 122.41(k).)
2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. section 122.22(a)(1).)
3. All permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. section 122.22(a)(2).)
4. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency,

or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. section 122.22(a)(3).).

5. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. section 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. section 122.22(b)(2)); and

   c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. section 122.22(b)(3).)

6. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. section 122.22(c).)

7. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. section 122.22(d).)

8. Any person providing the electronic signature for such documents described in Standard Provision – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all of the relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R section 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. section 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016, all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. section 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. section 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. section 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. section 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage,

types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather.

As of 21 December 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient (State Water Board) defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3. They may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. section 122.41(l)(6)(i).)

F. Planned Changes

The Discharger shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. section 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. section 122.41(l)(1)(ii).)

   The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. section 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. section 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order’s requirements. (40 C.F.R. section 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined

sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. section 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board**,** State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. section 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the appropriate initial recipient, as determined by U.S. EPA, and as defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. section 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Central Valley Water Board as soon as they know or have reason to believe (40 C.F.R. section 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. section 122.42(a)(1)):

   a. 100 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(1)(i));

   b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(1)(ii));

   c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(1)(iii)); or

d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 C.F.R. section 122.42(a)(2)):

   a. 500 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(2)(i));

   b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(2)(ii));

   c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(2)(iii)); or

   d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(2)(iv).)

B. Publicly-Owned Treatment Works (POTW’s) - Not Applicable

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. section 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

B. Final effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW), in accordance with the provision of Water Code section 13176. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. Data generated from field measurements such as pH, dissolved oxygen (DO), electrical conductivity (EC), turbidity, temperature, and residual chlorine, are exempt pursuant to Water Code Section 13176. A manual containing the steps followed in this program for any field measurements such as pH, DO, EC, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. Laboratory analytical methods shall be sufficiently sensitive in accordance with the Sufficiently Sensitive Methods Rule (SSM Rule) specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). A U.S. EPA-approved analytical method is sufficiently sensitive for a pollutant/parameter where:

1. The method minimum level (ML) is at or below the applicable water quality objective for the receiving water, or;
2. The method ML is above the applicable water quality objective for the receiving water but the amount of the pollutant/parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant/parameter, or;
3. The method ML is above the applicable water quality objective for the receiving water, but the ML is the lowest of the 40 C.F.R. 136 U.S. EPA-approved analytical methods for the pollutant/parameter.

G. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.

I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent`t limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	M-001	Effluent from ARGET
002	M-002	Effluent from GET EF
003	M-003	No longer used
004	M-004	Effluent from GET HA
005	M-005	Effluent from GET J

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
006	M-006	No longer used
007	M-007	Effluent from GET KA
008	M-008	Effluent from GET LA
009	M-009	Effluent from GET LB
010	M-010	Effluent from Sailor Bar Well System
011	M-011	No longer used
012	M-012	Low Threat Well Discharge
013	M-013	Effluent from AC-6 Well System
014	M-014	Effluent from AC-8 Well System
015	M-015	No longer used
016	M-016	Effluent from GET AB
017	M-017	Effluent from White Rock GET
018	M-018	No longer used
019	M-019	Cooling Tower 20-019
--	MINFA	Influent to ARGET
--	MINFB	Influent to GET EF
--	MINFC	No longer used
--	MINFD	Influent to GET HA
--	MINFE	Influent to GET J
--	MINFF	No longer used
--	MINFG	Influent to GET KA
--	MINFH	Influent to GET LA
--	MINFI	Influent to GET LB
--	MINFJ	Influent to Sailor Bar Park Well System
--	MINFK	No longer used
--	MINFL	Influent to AC-6 Well System
--	MINFM	Influent to AC-8 Well System
--	MINFN	No longer used
--	MINFO	Influent to GET AB
--	MINFP	Influent to White Rock GET
--	R-001	R-001 (upstream) on American River from discharge of Buffalo Creek into American River at Latitude 38º, 38’, 00” N, Longitude 121º, 16’, 07” W. Outfall 001 is representative of ARGET, GET E/F, GET J and GET AB discharges (Discharges 001, 002, 005 and 016, respectively.
--	R-002	R-002 (downstream) on American River from discharge of Buffalo Creek into American River at Latitude 38º, 38’, 00” N, Longitude 121º, 16’, 07” W
--	R-003	R-003 (upstream) on American River from discharge water from GET LB (Discharge 009) into American River at Latitude 38º, 37’, 31” N, Longitude 121º, 18’, 13” W.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	R-004	R-004 (downstream) on American River from discharge water from GET LB (Discharge 009) into American River at Latitude 38º, 37', 31" N, Longitude 121º, 18', 13" W.
--	R-005	R-005 (downstream on American River from discharge water from GET LA (Discharge 008) into American River at Latitude 38º, 36', 29" N, Longitude 121º, 18', 33" W. R-004 is the upstream sample location for this Discharge 008
--	R-006	R-006 (upstream) on American River from discharge water from long term GET KA (Discharge 007) and AC-6 (Discharge 013) into American River at Latitude 38º, 36', 07" N, Longitude 121º, 19', 02" W
--	R-007	R-007 (downstream) on American River from discharge water from long term GET KA (Discharge 007) and AC-6 (Discharge 013) into American River at Latitude 38º, 36', 07" N, Longitude 121º, 19', 02" W
--	R-008 and R-009	No longer used
--	R-010	R-010 (upstream) on American River from discharge from AC-23 (Discharge 015) into American River via the Boyd Station Channel at Latitude 38º, 34', 46" N, Longitude 121º, 19', 32" W. May receive water from long term GET HA (Discharge 004) in the future
--	R-011	R-011 (downstream) on American River from discharge from AC-23 (Discharge 015) into American River via the Boyd Station Channel at Latitude 38º, 34', 46" N, Longitude 121º, 19', 32" W. May receive water from long term GET HA (Discharge 004) in the future.
--	R-012	R-012 (upstream) on Morrison Creek from discharge of drainage ditch to Morrison Creek at Latitude 38º, 31', 53" N, Longitude 121º, 19', 36" W. Outfall 006 represents discharge from GET HA (Discharge 004) and AC-18 (Discharge 014).
--	R-013	R-013 (downstream) on Morrison Creek from discharge of drainage ditch to Morrison Creek at Latitude 38º, 31', 53" N, Longitude 121º, 19', 36" W. Outfall 006 represents discharge from GET HA (Discharge 004) and AC-18 (Discharge 014).
--	R-014	R-014 (upstream) on American River from a potential discharge from various GETs into American River via pipeline at 38º, 38', 06" N, Longitude 121º, 13', 13" W.
--	R-015	R-015 (downstream) on American River from a potential discharge from various GETs into American River via pipeline at 38º, 38', 06" N, Longitude 121º, 13', 13" W

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	R-016	R-016 (upstream) on Alder Creek from a potential discharge water from various GETs via pipeline into Alder Creek at American River at Latitude 38º, 38', 12" N, Longitude 121º, 12', 11" W.
--	R-017	R-017 (downstream) on Alder Creek from a potential discharge water from various GETs via pipeline into Alder Creek at American River at Latitude 38º, 38', 12" N, Longitude 121º, 12', 11" W.
--	LND-001	Discharge from GET AB and/or White Rock GET to Rebel Hill Ditch at t 38º, 36', 59.6" N, Longitude 121º, 10', 16" W.
--	LND-002	Discharge from GET AB and/or White Rock GET to the Aerojet industrial water supply system
--	LND-003	Discharge from GET AB and/or White Rock GET to Teichert
--	BIO-001	Biosolids generated at the GET E/F facility

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

A. General Monitoring and Testing Requirements

1. Analysis for volatile organics shall be by EPA Methods 601and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Executive Officer Board with a practical quantitation level no greater than 0.5 µg/L. Constituents to be reported are those on the EPA Method 8260B Short List. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. Analysis for n-nitrosodimethylamine shall use a test method with a practical quantitation level no greater than 0.002 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
3. Analysis for perchlorate shall be by EPA Methods 314.0 or 314.1, or an equivalent method approved by the Regional Board with a practical quantitation level no greater than 4.0 µg/L. All concentrations between the detection level and practical quantization level shall be reported as trace.
4. Analysis for semi-volatile organics shall be by EPA Methods 8270 or 500 Series Method, or an equivalent method approved by the Executive Officer with a Practical Quantitation Level no greater than 5 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
5. Analysis for semi-volatile organics shall be by EPA Methods 8270 or 500 Series Method, or an equivalent method approved by the Executive Officer with Practical Quantitation Level no greater than 5 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.

6. Analysis for 1,4-dioxane shall be by a method with a practical quantitation level no greater than 3 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
7. Analysis for PROWL shall be by a method with a practical quantitation level no greater than 10 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
8. Analysis for per and polyfluoroalkyl substances (PFAS) shall be by EPA Modified Method 537.1, or equivalent method approved by the Executive Officer, with a practical quantitation level of 0.002 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
9. Applicable to all parameters. Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
10. All grab samples shall **not** be collected at the same time each day to get a complete representation of variations in the influent.
11. All composite samples shall be collected from a 24-hour flow proportional composite.
12. A hand-held field meter may be used for temperature and pH, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
13. Total Residual Chlorine must be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L.
14. Priority Pollutants. For all priority pollutant constituents listed in Table E-3 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern) the reporting level shall be consistent with sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See Attachment E, Table E-15).
15. Persistent Chlorinated Hydrocarbon Pesticides shall include: aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4’DDD, 4,4’DDE, and 4,4’DDT.
16. TCDD-Dioxin Congener Equivalents shall include all 17 of the 2,3,7,8 TCDD dioxin congeners as listed in section 3 of the SIP.
17. Chlorpyrifos and Diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method with a lower Reporting Limit than the

Basin Plan Water Quality Objectives of 0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively.

18. Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a method detection limit of 0.02 ng/l for methyl mercury and 0.2 ng/l for total mercury.

B. Locations MINFA, MINFB and MINFO

1. The Discharger shall monitor the influent to ARGET, GET EF and GET AB at MINFA, MINFB and MINFO, respectively, as follows in Table E-2:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile Organics	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile Organics	µg/L	Grab	1/Quarter
1,4-Dioxane	µg/L	Grab	2/year
PROWL	µg/L	Grab	Monthly
PFAS	µg/L	Grab	1/Quarter

MINFB only for PROWL analysis; MINFA and MINFB only for 1,4 Dioxane analysis; MINFB and MINFO only for PFAS analysis.

C. Locations MINFD, MINFJ and MINFM

1. The Discharger shall monitor the influent to GET HA, Sailor Bar Park Well System and AC-18 Well System MINFD, MINFJ and MINFM, respectively, as follows in Table E-3:

Table E-3. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Volatile Organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile Organics	µg/L	Grab	1/Quarter

MINFJ only semi-volatile analysis

D. Locations MINFE, MINFG, MINFH, MINFI, MINFL and MINFP

1. The Discharger shall monitor the influent to GET J, GET KA, GET LA, GET LB, AC-6 well system, and White Rock GET at MINFE, MINFG, MINFH, MINFI, MINFL and MINFP, respectively, as follows in Table E-4:

Table E-4: Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Volatile Organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitor Location M001

1. The Discharger shall monitor the ARGET effluent at M001 as listed in Table E-4 and the testing requirements described in section IV.A.2 below:

Table E-4. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile organics	µg/L	Grab	Quarterly
1,4-dioxane	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly
Acute Toxicity	% Survival	Grab	Quarterly
Whole Effluent Toxicity	(see Section IV.A)	(see Section IV.A)	(see Section IV.A)
Priority Pollutants and Other Constituents of Concern	(see Section IX.B)	(see Section IX.B)	(see Section IX.B)

B. Monitor Location M002

1. The Discharger shall monitor the GET EF effluent at M002 in accordance with Table E-5:

Table E-5. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile organics	µg/L	Grab	Quarterly
1,4-dioxane	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly
Acute Toxicity	% Survival	Grab	Quarterly
PROWL	µg/L	Grab	2/Year
Acetaldehyde	µg/L	Grab	Monthly
Formaldehyde	µg/L	Grab	Monthly
Glyoxal	µg/L	Grab	Monthly
Acrylamide	µg/L	Grab	Monthly
PFAS	ng/L	Grab	Quarterly
Whole Effluent Toxicity	(see Section IV.A)	(see Section IV.A)	(see Section IV.A)
Priority Pollutants and Other Constituents of Concern	(see Section IX.B)	(see Section IX.B)	(see Section IX.B)

C. Monitor Location M004

1. The Discharger shall monitor the GET HA at M004 in accordance with Table E-6:

Table E-6. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Annually
Acute Toxicity	% Survival	Grab	Quarterly

D. Monitor Location M005

1. The Discharger shall monitor the GET J at M0054 in accordance with Table E-7:

Table E-7. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	ng/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Annually
Acute Toxicity	% Survival	Grab	Quarterly

E. Monitor Location M007

1. The Discharger shall monitor the GET KA at M004 in accordance with Table E-8:

Table E-8. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	ng/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Annually
Acute Toxicity	% Survival	Grab	Quarterly

F. Monitor Location M008 and M009

1. The Discharger shall monitor the GET LA at M008 and GET LB at M009 in accordance with Table E-9:

Table E-9. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	ng/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Annually
Acute Toxicity	% Survival	Grab	Quarterly

G. Monitor Location M010

1. The Discharger shall monitor the Sailor Park Well System at M010 in accordance with Table E-10:

Table E-10. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
1,4-dioxane	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly

H. Monitor Location M012

1. The Discharger shall monitor the low threat discharges at M012 in accordance with Table E-11:

Table E-11. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Once per 10,000 gallons purge water for Well Purge Beginning, middle and end of Aquifer Test
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	ng/L	Grab	Once per well purge Beginning, middle and end of Aquifer Test
1,4-dioxane	µg/L	Grab	Once per well purge Beginning, middle and end of Aquifer Test
Temperature	°F/°C	Grab	Once per well purge Beginning, middle and end of Aquifer Test

I. Monitor Location M013

1. The Discharger shall monitor the AC-6 Well System M013 in accordance with Table E-12:

Table E-12. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
N-nitrosodimethylamine	ng/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly

J. Monitor Location M013

1. The Discharger shall monitor the AC-18 Well System M014 in accordance with Table E-13:

Table E-13. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly

K. Monitor Location M016

1. The Discharger shall monitor the GET AB effluent at M016 in accordance with Table E-14:

Table E-14. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile organics	µg/L	Grab	Quarterly
Methyl mercury	µg/L	grab	1/Year
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Monthly

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Dissolved Solids	mg/L	Grab	Quarterly
Acute Toxicity	% Survival	Grab	Quarterly
Whole Effluent Toxicity	(see Section IV.A)	(see Section IV.A)	(see Section IV.A)
Priority Pollutants and Other Constituents of Concern	(see Section IX.A)	(see Section IX.A)	(see Section IX.A)
PFAS	ng/L	Grab	Quarterly

L. Monitor Location M017

1. The Discharger shall monitor the GET AB effluent at M017 in accordance with Table E-15:

Table E-15. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Semi-volatile organics	µg/L	Grab	Quarterly
Methyl mercury	µg/L	grab	1/Year
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Hardness as $CaCO_3$	mg/L	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly
Acute Toxicity	% Survival	Grab	Quarterly
Whole Effluent Toxicity	(see Section IV.A)	(see Section IV.A)	(see Section IV.A)

M. Monitor Location M019

1. The Discharger shall monitor the Building 20-019 Cooling Tower at M019 in accordance with Table E-16:

Table E-16. Effluent Monitoring

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Copper	mg/L	Grab	Quarterly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing.

The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the acute toxicity testing requirement:

1. **Monitoring Frequency** – The Discharger shall perform sampling according to the appropriate tables above
2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be <flow proportional 24-hour composites OR grab samples> and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Locations specified in the above tables.
3. **Test Species** – Test species shall be fathead minnows (Pimephales promelas).
4. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. **Test Failure** – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.
6. **Ammonia Toxicity** – The acute toxicity testing may be modified to eliminate ammonia-related toxicity until <DATE>, at which time the Discharger shall be required to implement the test without modifications to eliminate ammonia toxicity.

B. Chronic Toxicity Testing.

The Discharger shall meet the chronic toxicity testing requirements:

1. **Monitoring Frequency** – The Discharger shall perform routine annual chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than TU_c (as 100/NOEC) <u>AND</u> a percent effect greater than 25 percent at 100 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity. See Compliance Determination section VII.L for procedures for calculating 6-week median.
2. **Sample Types** – Effluent samples shall grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Locations M001 and M002. The receiving water control shall be a grab sample obtained from Monitoring Location R001, as identified in this Monitoring and Reporting Program.

3. **Sample Volumes** – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. **Test Species** – The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with *Ceriodaphnia dubia* (survival and reproduction test), *Pimephales promelas* (larval survival and growth test) and *Selenastrum capricornutum* (growth test) unless otherwise specified in writing by the Executive Officer.

5. **Methods** – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.

6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-17. Chronic Toxicity Testing Dilution Series

Samples	Dilution%	Dilution%	Dilution%	Dilution%	Dilution%	Controls
% Effluent	100	75	50	25	12.5	0
% Receiving Water	0	25	50	75	87.5	0
% Control Water	0	25	50	75	87.5	100

8. **Test Failure** – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

C. WET Testing Notification Requirements.

The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements.

All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting**. Routing and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly self-monitoring report, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   b. The statistical methods used to calculate endpoints;

   c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

   d. The dates of sample collection and initiation of each toxicity test; and

   e. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring type, i.e., routine, compliance, TES, or TRE monitoring.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan, or as amended by the Discharger's TRE Action Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

E. Most Sensitive Species Screening.

The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.

1. Frequency of Testing for Species Sensitivity Screening. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (Ceriodaphnia dubia), fathead minnow (Pimephales promelas), and green alga (Pseudokirchneriella subcapitata). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.
2. Determination of Most Sensitive Species. If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then of the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 10 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location LN001

1. In addition to the monitoring required above, the Discharger shall monitor the discharge from GET AB and White Rock GET to Rebel Hill Ditch at LN001 in accordance with Table E-18:

Table E-18 Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	meter	continuous	NA

B. Monitoring Location LN002 and LN003

1. In addition to the monitoring required above, the Discharger shall monitor the discharge from GET AB and White Rock GET to the Aerojet industrial water supply system at LN002 and to the Teichert Facility on Grant Line Road at LN003 in accordance with Table E-19:

Table E-19 Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	meter	continuous	NA

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. General Receiving Water Monitoring Requirements

1. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002 when discharging to the <Receiving Water>. Attention shall be given to the presence of:

   a. Floating or suspended matter;

   b. Discoloration;

   c. Bottom deposits;

   d. Aquatic life;

   e. Visible films, sheens, or coatings;

   f. Fungi, slimes, or objectionable growths; and

   g. Potential nuisance conditions.

   Notes on receiving water conditions shall be summarized in the monitoring report.

B. Monitor Location R001, R002, R003, R004, R005, R0006, R007, R010, R011, R014, R015, R016, and R017

1. The Discharger shall monitor the American River at R001, R002, R003, R004, R005, R006, R007, R010, R011, R014 and R015, and Alder Creek at R016 and R017 in accordance with Table E-20:

Table E-20 Receiving Water Monitoring Requirements

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
N-nitrosodimethylamine	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly

C. Monitor Location R012 and R013

1. The Discharger shall monitor Morrison Creek at R012 and R013 in accordance with Table E-21:

Table E-21 Receiving Water Monitoring Requirements

Pollutant Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	Monthly
Volatile organics	µg/L	Grab	Monthly
Perchlorate	µg/L	Grab	Monthly
Temperature	°F/°C	Grab	Monthly
Dissolved oxygen	mg/L	Grab	Monthly
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

   a. Monthly volume of biosolids generation and disposal location.

B. Priority Pollutant Effluent and Receiving Water Characterization

1. Quarterly samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001, EFF-002 and RSW-001) and analyzed for the constituents listed in Table E-22, below. Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.2) using sufficiently sensitive analytical methods and Reporting Levels per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The "Reporting Level" is synonymous with the "Method Minimum Level" described in the SSM Rule. Quarterly monitoring shall be conducted for one year beginning with the first quarter of 2023 and the results of such monitoring be submitted to the Central Valley Water Board with the monthly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

2. Concurrent Sampling. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

3. Sample Type. All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-22, below.

4. Analytical Methods Report Certification. Prior to beginning the Effluent and Receiving Water Characterization monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Effluent and Receiving Water Characterization monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report. If there are changes to the previously submitted Analytical Methods Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the permit's Notice of

Adoption that the Discharger can use to satisfy this requirement. The certification form shall be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table.

5. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-22 and the testing requirements described in section IX.D.6 below.

Table E-22. Effluent and Receiving Water Characterization Monitoring

VOLATILE ORGANICS

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab
17	Acrolein	107-02-8	µg/L	Grab
18	Acrylonitrile	107-13-1	µg/L	Grab
19	Benzene	71-43-2	µg/L	Grab
20	Bromoform	75-25-2	µg/L	Grab
21	Carbon Tetrachloride	56-23-5	µg/L	Grab
22	Chlorobenzene	108-90-7	µg/L	Grab
24	Chloroethane	75-00-3	µg/L	Grab
26	Chloroform	67-66-3	µg/L	Grab
35	Methyl Chloride	74-87-3	µg/L	Grab
23	Dibromochloromethane	124-48-1	µg/L	Grab
27	Dichlorobromomethane	75-27-4	µg/L	Grab
36	Methylene Chloride	75-09-2	µg/L	Grab
33	Ethylbenzene	100-41-4	µg/L	Grab
89	Hexachlorobutadiene	87-68-3	µg/L	Grab
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab
94	Naphthalene	91-20-3	µg/L	Grab
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab
39	Toluene	108-88-3	µg/L	Grab
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab
44	Vinyl Chloride	75-01-4	µg/L	Grab
21	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab
28	1,1-Dichloroethane	75-34-3	µg/L	Grab
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab
31	1,2-Dichloropropane	78-87-5	µg/L	Grab
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
29	1,2-Dichloroethane	107-06-2	µg/L	Grab
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab

SEMI-VOLATILE ORGANICS

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab
45	2-Chlorophenol	95-57-8	µg/L	Grab
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab
50	2-Nitrophenol	88-75-5	µg/L	Grab
71	2-Chloronaphthalene	91-58-7	µg/L	Grab
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab
51	4-Nitrophenol	100-02-7	µg/L	Grab
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab
56	Acenaphthene	83-32-9	µg/L	Grab
57	Acenaphthylene	208-96-8	µg/L	Grab
58	Anthracene	120-12-7	µg/L	Grab
59	Benzidine	92-87-5	µg/L	Grab
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab
73	Chrysene	218-01-9	µg/L	Grab
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab
79	Diethyl Phthalate	84-66-2	µg/L	Grab
80	Dimethyl Phthalate	131-11-3	µg/L	Grab
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

INORGANICS

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Aluminum	7429-90-5	µg/L	24-hour Composite
1	Antimony, Total Recoverable	7440-36-0	µg/L	24-hour Composite
2	Arsenic, Total Recoverable	7440-38-2	µg/L	24-hour Composite
15	Asbestos	1332-21-4	µg/L	24-hour Composite
3	Beryllium, Total Recoverable	7440-41-7	µg/L	24-hour Composite
4	Cadmium, Total Recoverable	7440-43-9	µg/L	24-hour Composite
5a (III)	Chromium, Total	7440-47-3	µg/L	24-hour Composite
6	Copper, Total Recoverable	7440-50-8	µg/L	24-hour Composite
14	Iron, Total Recoverable	7439-89-6	µg/L	24-hour Composite
7	Lead, Total Recoverable	7439-92-1	µg/L	24-hour Composite
8	Mercury, Total Recoverable	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Manganese, Total Recoverable	7439-96-5	µg/L	24-hour Composite
9	Nickel, Total Recoverable	7440-02-0	µg/L	24-hour Composite
10	Selenium, Total Recoverable	7782-49-2	µg/L	24-hour Composite
11	Silver, Total Recoverable	7440-22-4	µg/L	24-hour Composite
12	Thallium, Total Recoverable	7440-28-0	µg/L	24-hour Composite
13	Zinc, Total Recoverable	7440-66-6	µg/L	24-hour Composite

NON-METALS/MINERALS

CTR Number	Non-Metal/Mineral Parameters	CAS Number	Units	Effluent Sample Type
NL	Boron	7440-42-8	µg/L	24-hour Composite
NL	Chloride	16887-00-6	mg/L	24-hour Composite
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab
NL	Phosphorus, Total (as P)	7723-14-0	mg/L	24-hour Composite
NL	Sulfate	14808-79-8	mg/L	24-hour Composite
NL	Sulfide (as S)	5651-88-7	mg/L	24-hour Composite

PESTICIDES/PCBs/DIOXINS

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
110	4,4-DDD	72-54-8	µg/L	24-hour Composite
109	4,4-DDE	72-55-9	µg/L	24-hour Composite
108	4,4-DDT	50-29-3	µg/L	24-hour Composite
112	alpha-Endosulfan	959-98-8	µg/L	24-hour Composite
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	24-hour Composite
102	Aldrin	309-00-2	µg/L	24-hour Composite
113	beta-Endosulfan	33213-65-9	µg/L	24-hour Composite
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	24-hour Composite
107	Chlordane	57-74-9	µg/L	24-hour Composite
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	24-hour Composite
111	Dieldrin	60-57-1	µg/L	24-hour Composite
114	Endosulfan Sulfate	1031-07-8	µg/L	24-hour Composite
115	Endrin	72-20-8	µg/L	24-hour Composite
116	Endrin Aldehyde	7421-93-4	µg/L	24-hour Composite
117	Heptachlor	76-44-8	µg/L	24-hour Composite
118	Heptachlor Epoxide	1024-57-3	µg/L	24-hour Composite

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	24-hour Composite
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	24-hour Composite
120	PCB 1221	11104-28-2	µg/L	24-hour Composite
121	PCB 1232	11141-16-5	µg/L	24-hour Composite
122	PCB 1242	53469-21-9	µg/L	24-hour Composite
123	PCB 1248	12672-29-6	µg/L	24-hour Composite
124	PCB 1254	11097-69-1	µg/L	24-hour Composite
125	PCB 1260	11096-82-5	µg/L	24-hour Composite
126	Toxaphene	8001-35-2	µg/L	24-hour Composite
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	24-hour Composite

CONVENTIONAL PARAMETERS

CTR Number	Conventional Parameters	CAS Number	Units	Effluent Sample Type
NL	pH	--	SU	Grab
NL	Temperature	--	ºC	Grab

NON-CONVENTIONAL PARAMETERS

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Foaming Agents (MBAS)	MBAS	mg/L	24-hour Composite
NL	Hardness (as CaCO3)	471-34-1	mg/L	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos /cm	24-hour Composite
NL	Total Dissolved Solids (TDS)	TDS	mg/L	24-hour Composite
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	24-hour Composite

NUTRIENTS

CTR Number	Nutrient Parameters	CAS Number	Units	Effluent Sample Type
7	Ammonia (as N)	7664-41-7	mg/L	24-hour Composite
8	Nitrate (as N)	14797-55-8	mg/L	24-hour Composite
9	Nitrite (as N)	14797-65-0	mg/L	24-hour Composite

OTHER CONSTITUENTS OF CONCERN

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	1,2,3-Trichloropropane (TCP)	96-18-4	ug/L	Grab
NL	Trichlorofluoromethane	75-69-4	µg/L	Grab
NL	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	µg/L	Grab
NL	Styrene	100-42-5	µg/L	Grab
NL	Xylenes	1330-20-7	µg/L	Grab
NL	Barium	7440-39-3	µg/L	24-hour Composite
NL	Fluoride	16984-48-8	mg/L	24-hour Composite
NL	Molybdenum	7439-98-7	µg/L	24-hour Composite
NL	Tributyltin	688-73-3	µg/L	24-hour Composite
NL	Alachlor	15972-60-8	µg/L	24-hour Composite
NL	Atrazine	1912-24-9	µg/L	24-hour Composite
NL	Bentazon	25057-89-0	µg/L	24-hour Composite
NL	Carbofuran	1563-66-2	µg/L	24-hour Composite
NL	2,4-D	94-75-7	µg/L	24-hour Composite
NL	Dalapon	75-99-0	µg/L	24-hour Composite
NL	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	µg/L	24-hour Composite
NL	Di(2-ethylhexyl)adipate	103-23-1	µg/L	24-hour Composite
NL	Dinoseb	88-85-7	µg/L	24-hour Composite
NL	Diquat	85-00-7	µg/L	24-hour Composite
NL	Endothal	145-73-3	µg/L	24-hour Composite
NL	Ethylene Dibromide (EDB)	106-93-4	µg/L	24-hour Composite
NL	Methoxychlor	72-43-5	µg/L	24-hour Composite
NL	Molinate (Ordram)	2212-67-1	µg/L	24-hour Composite
NL	Oxamyl	23135-22-0	µg/L	24-hour Composite
NL	Picloram	1918-02-1	µg/L	24-hour Composite
NL	Simazine (Princep)	122-34-9	µg/L	24-hour Composite
NL	Thiobencarb	28249-77-6	µg/L	24-hour Composite
NL	2,4,5-TP (Silvex)	93-72-1	µg/L	24-hour Composite
NL	Chlorpyrifos	2921-88-2	µg/L	24-hour Composite
NL	Diazinon	333-41-5	µg/L	24-hour Composite

6. **Table E-22 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-22.

   a. The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-3, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

b. All **24-hour composite** samples shall be collected from a 24-hour flow proportional composite.

c. **Bis (2-ethylhexyl) phthalate**. In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit <monthly, quarterly, semiannual, annual> SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs

during the month, the monitoring report must be submitted stating that there has been no discharge.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-23. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	15TH day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	15TH May 15TH 1 August 15TH November 15TH February of following year
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	15TH August 15TH February of following year
1/Year	Permit effective date	1 January through 31 December	15TH February of following year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL <, AWEL, or MDEL> for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. The Discharger shall attach all final laboratory reports from all contracted commercial laboratories, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.

7. The Discharger shall submit in the SMRs calculations and reports in accordance with the following requirements:

a. **Calendar Annual Average Limitations**. For constituents with effluent limitations specified as "calendar annual average" (electrical conductivity) the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

b. **Mass Loading Limitations**. For BOD_5, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:

Mass Loading (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

c. **Removal Efficiency (BOD_5 and TSS).** The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the SMRs. The percent removal shall be calculated as specified in section VII.A. of the Limitations and Discharge Requirements.

d. **Total Coliform Organisms Effluent Limitations**. The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in **<Section VII.C.>** of the Waste Discharge Requirements.

e. **Dissolved Oxygen Receiving Water Limitations**. The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the effluent (EFF-001) and the receiving water (RSW-001 and RSW-002).

f. **Turbidity Receiving Water Limitations**. The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.17.a-e. of the Waste Discharge Requirements.

g. **Temperature Receiving Water Limitations**. The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

C. Discharge Monitoring Reports (DMR's)

1. DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMR's together with SMR's using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal will be in addition to electronic SMR submittal. Information about electronic DMR submittal (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/) is available on the Internet.

D. Other Reports

1. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table:

   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

   b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

2. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table:

   a. Report of Waste Discharge (Form 200);

   b. NPDES Form 1;

   c. NPDES Form 2A;

   d. NPDES Form 2S;

3. **Technical Report Submittals.** This Order includes requirements to submit a ROWD, special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as “technical reports”). The Technical Reports Table and subsequent table notes below summarize all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-24. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
	Standard Reporting Requirements		
1	Report of Waste Discharge	1 October 2024	MRP X.D.4
2	Annual Operations Report	1 February 2021	MRP X.D.3
3	Annual Operations Report	1 February 2022	MRP X.D.3
4	Annual Operations Report	1 February 2023	MRP X.D.3
5	Annual Operations Report	1 February 2024	MRP X.D.3
6	Annual Operations Report	1 February 2025	MRP X.D.3

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet discusses the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

Waste Discharge ID:	5A342000006
CIWQS Facility Place ID:	
Discharger:	Aerojet Rocketdyne, Inc.
Name of Facility:	Groundwater Extraction and Treatment Systems, ARGET, GET EF, GET HA, GET J, GET KA, GET LA, GET LB, White Rock GET, Sailor Bar Park Well, Golden State Water Wells and Low-Threat Discharges
Facility Address:	Aerojet Road
Facility City, State Zip:	Sacramento CA 95813-6000
Facility County:	Sacramento
Facility Contact, Title and Phone Number:	Peter Kvam, (916) 355-4212
Authorized Person to Sign and Submit Reports:	Chris Fennessy, Senior Manager Remediation, 916 355-3341
Mailing Address:	P.O. Box 13222 Sacramento, CA 95813-6000
Billing Address:	SAME
Type of Facility:	Groundwater Treatment
Major or Minor Facility:	Minor
Threat to Water Quality:	2
Complexity:	B
Pretreatment Program:	No
Recycling Requirements:	Producer and User

Facility Permitted Flow:	ARGET – 11.52 mgd, GET E/F – 11.52 mgd, GET HA – 3.9 mgd, GET J – 6.75 mgd, GET KA– 5.11 mgd, GET LA – 2.88 mgd, GET LB – 1.44 mgd, AC-6 – 1.08 mgd, AC-18 – 2.59 mgd, GET AB – 5.76 mgd, White Rock GET – 2.88, Cooling Tower 20019 - 0.0008 mgd
Facility Design Flow:	SAME
Watershed:	American River and Sacramento River watersheds
Receiving Water:	American River, Buffalo Creek, Morrison Creekand Alder Creek
Receiving Water Type:	Inland Surface Water

A. The Aerojet Rocketdyne, Inc. (hereinafter Discharger) is the owner and operator of ARGET, GET E/F, GET HA, GET J, GET KA, GET LA, GET LB, Sailor Bar Pond Treatment System, AC-6 Well system, AC-18 well system, GET AB and White Rock GET (hereinafter Facilities), groundwater treatment systems.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facilities discharge treated groundwater to the American River, Buffalo Creek, Morrison Creek and Alder Creek, waters of the United States, tributary to the Sacramento River, American River, Sacramento River and Lake Natoma, respectively within the American River watershed. The Discharger was previously regulated by Order R5-2011-0088 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0083861 adopted on 1 December 2011 and expires on 1 December 2016. The Discharger was also regulated by Order R5-2011-0025 which prescribed waste discharge requirements for land application of treated groundwater from the White Rock GET. Attachments B-1 and B-2 provide maps of the area around the Facility. Attachments C-1 through C-10 provides flow schematics of the facilities.

Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. The Discharger filed a report of waste discharge and submitted an application for revision of its WDR’s and NPDES permit on 27 July 2020. The application was deemed complete on 27 July 2020.

D. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), States authorized to administer the NPDES program may administratively continue State-issued permits beyond their expiration dates until the effective date of the new permits, if State law allows it. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTIONS

A. The discharger currently owns and operates fourteen groundwater extraction and treatment systems that discharge treated groundwater to surface waters in accordance with an NPDES permit.

B.

1. **ARGET (Discharge 001).** The American River Study Area (ARSA) treatment system is on the Aerojet site. The facility was constructed in 1997 and originally consisted of ultraviolet/hydrogen peroxide treatment to reduce concentrations of volatile organic compounds (VOCs) and 1,4-dioxane, and air-stripping to remove any remaining VOCs. This facility has been shown to remove VOCs to below detection levels (0.5 µg/L) and 1,4-dioxane to below its detection level (2-10 µg/L). This facility is designed to treat up to 3500 gallons per minute (gpm). Aerojet modified the VOC-removal portion of the facility to utilize ozone/hydrogen peroxide to remove the chlorinated ethene VOCs and 1,4-dioxane at a lower cost than the ultraviolet light system. Due to decreasing VOC and 1,4-dioxane concentrations in the influent, Aerojet modified the VOC-removal portion of the facility to eliminate pre-treatment of chlorinated ethane VOCs and 1,4-dioxane using ozone/hydrogen peroxide. See Attachment C-1 for the facility process flow.

2. **GET EF (Discharge 002).** The GET EF facility is also on the Aerojet main property. GET E and GET F were originally constructed in the mid-1980's and were subsequently combined into one facility in 2000. The combined facility uses biological reduction and ion exchange to remove perchlorate, ultraviolet light/hydrogen peroxide to destroy NDMA and most of the VOCS, and air stripping to remove the remainder of VOCs from up to 8000 gpm of influent. There is also a sand filter and clarifier for solids control. A screw press was added to dewater the solids with the liquid stream from the screw press discharged back to the influent of the clarifier and the solids disposed of to a landfill. The treatment process has been expanded with the addition of ion exchange vessels to remove perchlorate and an additional air stripper to help with the removal of chloroform. The ion exchange vessels increased the overall treatment capacity of GET EF. The treatment process has been shown to be effective in removing VOCs to below detection levels (0.5 µg/L), perchlorate to below 4 µg/L most of the time, and NDMA to below detection (0.002 –0.0075 µg/L). Testing of the influent and effluent of the treatment facility for full-scan analysis, including tentatively identified compound analysis, did not indicate additional contaminants of concern. See Attachment C-2,

3. **GET HA (Discharge 004).** The interim GET H facility (Discharge 003) discontinued operation in 2006 and all of the GET H extraction wells feed into the GET HA facility. The GET HA facility, completed in 2006, utilizes ion-exchange resin adsorption to remove perchlorate to less than 4 µg/L, and granular activated carbon (GAC) to remove VOCs to less than 0.5 µg/L, treating a flow of up to 2710 gpm of extracted groundwater. The GET HA system came on-line in summer 2006 and is in the north-central section of Mather Field. The GET HA facility has been able to consistently meet effluent limitations. See Attachment C-4.
4. **GET J (Discharge 005).** The GET J facility is similar to GET HA, but with the addition of ultraviolet/hydrogen peroxide treatment for the destruction of NDMA and particulate filtration to help the ultraviolet system. The facility was upgraded to allow for hydrogen peroxide addition to be used with the UV treatment to additionally destroy VOCs. The Discharger may discontinue use of the GAC treatment provided the advanced UV oxidation meets VOC effluent limitations. The treatment system is designed to treat in excess of 4150 gpm and is found on Pyrites Way in Gold River. See Attachment C-5.
5. **GET KA (Discharge 007).** Use of the interim GET K facility (Discharge 006) was discontinued in 2009 with the completion of the GET KA facility. The GET KA facility uses particulate removal, hydrogen peroxide addition and ultraviolet light for treatment of NDMA and low concentrations of VOCs and ion exchange to remove perchlorate from an influent of up to 3550 gpm. This flow capacity allows for the treatment of water extracted by Golden State supply well AC-6 if warranted. The facility is located on Coloma Road in Rancho Cordova. See Attachment C-7.
6. **GET LA (Discharge 008**). GET LA (Discharge 008) is in Carmichael, near Ancil Hoffman Park. The facility treats NDMA using ultraviolet light. In the future, if VOCs and/or perchlorate are detected in the influent, VOC and/or perchlorate treatment will be added utilizing the same processes described above from the GET KA and GET J facilities. Whenever possible, the discharge from GET LA will be applied to the adjacent Ancil Hoffman Golf Course. See Attachment C-8.
7. **GET LB (Discharge 009).** GET LB is in Carmichael northeast of GET LA and is adjacent to the Carmichael Water District water treatment plant. The plant utilizes ultraviolet light to destroy NDMA. The facility has been constructed to allow for expansion for perchlorate and VOC treatment units if the influent is determined to contain those pollutants. See Attachment C-9.
8. **Sailor Bar Park (Discharge 010).** The Sailor Bar Park system provides for removal of VOCs by GAC on an extraction well to supply water for the pond in Sailor Bar Park. The original supply well for the pond is now connected to ARGET. The park is on the north side of the American River adjacent to the village of Fair Oaks, approximately one-half mile west of the Hazel Avenue Bridge.
9. **Purge and Aquifer Test Waters (Discharge 012).** The Discharger develops and purges wells prior to sampling and conducts aquifer tests on extraction/supply

wells to determine aquifer characteristics to allow GET systems to be designed. These activities take place over vast areas on and off the Discharger's property. The purge water is generally low in volume (100's – 5000 gallons) and is provided treatment prior to discharge. Treatment is provided on the discharges to remove the pollutants of concern. If treatment is not practical, the water is contained and discharged through the sanitary sewer system with the Discharger's wastewater discharge permit with the SRCSD. In addition to these well discharges, low volumes of water are discharged from three wellhead treatment systems described below in Discharges 013 and014 during replacement of the ion exchange resin and during well start-up and shutdown. The discharges occur infrequently and depend on the concentration of perchlorate in the influent to the treatment system which affects the useable life of the resin.

10. **AC-6 (Discharge 013).** Golden State Water Company's (Golden State) water supply well AC-6 on Dolecetto Drive in Rancho Cordova has been found to contain perchlorate. The Discharger has reached agreement with Golden State whereby a treatment system for perchlorate removal using ion-exchange has been added to the well site. The treated water will usually be placed into the potable water distribution system. During periods of low water demand, treated water produced by the well in excess of the demand may also be discharged to the storm drain. In-lieu of being used as a water supply for the community, AC-6 also has the ability to send its water to GET-KA for treatment and discharge. This is being considered on a permanent basis as the supply is not needed by Golden State and additional pollutants – NDMA and TCE – are approaching the capture area of AC-6 at concentrations above effluent limitations.

11. **AC-18 (Discharge 014).** Golden State's water supply well AC-18 on International Drive in Rancho Cordova has been found to contain perchlorate. Similar to well AC-6, perchlorate removal using ion-exchange has been added to AC-18 well site. This well will only be operated on-demand and so the discharge to the storm drain will only occur during well startup and shutdown to minimize pressure issues within the distribution system.

12. **GET AB (Discharge 016).** This GET is a combination of GETs A and B which were initially built in the mid-1980's. GET AB is on the south eastern side of Aerojet and uses bag filters to remove sediment, ion exchange to remove perchlorate, ultraviolet/hydrogen peroxide treatment for the destruction of NDMA and volatile organics and air stripping to remove remaining volatile organics from up to 4000 gpm of extracted groundwater. Part of the influent for GET AB comes from extraction wells on the former White Rock Road North Dump with the rest of the wells being along the eastern side of Aerojet. The discharge of the treated groundwater is firstly to the Aerojet industrial water supply system and the Teichert Aggregate Processing Plant on Grant Line Road (and potentially a future plant on Scott Road) depending on their respective needs. The treated water can also be discharged to Rebel Hill Ditch for infiltration or to Buffalo Creek upstream of the other GET discharges. See Attachment C-10.

13. **White Rock GET (Discharge 017).** This GET facility is located along Grant Line Road across from the Teichert Aggregate Processing Plant. The GET receives groundwater from two extraction wells and the Teichert water supply well. The water is treated using air stripping to remove volatile organics and ion exchange to remove perchlorate. The treated water is provided to Teichert for their use in the Grant Line plant and potentially a future second processing plant on Scott road. If the water is not needed by Teichert, then it is piped up to GET AB and discharged with its effluent in one of the manners described above or to Morrison Creek. The treatment system is designed to treat up to 4147 gpm. The Discharger is evaluating the addition of UV treatment to remove NDMA due to that pollutant is in groundwater approaching the extraction wells feeding the facility. This addition may occur during the term of this permit. See Attachment C-11.

14. **Cooling Tower 20-019 (Discharge 019).** This cooling tower discharges approximately 850 gallons per day to a lined and unlined drainage ditch that leads to Buffalo Creek. The very low flow and addition of flows from ARGET (3000+ gpm) and GET EF (6000+ gpm) downstream make this a *deminimus* discharge for Buffalo Creek.

C. Description of Wastewater and Biosolids Treatments and Controls

1. The treatment systems at the Facilities use bag filters on the influent, ion exchange or biological reduction for perchlorate removal, granular activated carbon and/or air stripping and/or ultraviolet/hydrogen peroxide and/or hydrogen peroxide/ozone for the removal of volatile organics, and ultraviolet/hydrogen peroxide for the removal of n-nitrosodimethylamine. GET EF, the only facility using biological reduction for removal of perchlorate also includes a clarifier, sand filter and screw press for the removal and dewatering of spent biosolids from the perchlorate treatment units. The dried biosolids are sent to a landfill for disposal.

2. VOCs can be easily removed from the extracted groundwater using a variety of ttreatment processes. Aerojet uses air-stripping, carbon adsorption (GAC) and ultraviolet or ozone oxidation in different combinations to remove the VOCs. At GET facilities that have high concentrations of VOCs Aerojet uses ultraviolet oxidation/hydrogen peroxide to destroy a majority of the VOCs, utilizing air stripping or GAC to remove residual VOCs. For lower concentrations of VOCs, GAC alone is utilized. Spent GAC is trucked to a permitted destruction facility.

3. Perchlorate is removed from the extracted groundwater using either biological rreduction or ion-exchange. Biological reduction is performed by growing bacteria on carbon or sand in a fluidized bed reactor. A carbon source (e.g., ethanol) is injected into the influent to provide food for the bacteria. The bacteria will remove oxygen and nitrate prior to destroying the perchlorate. Biosolids are generated as bacteria material is removed from the system. The biosolids are collected on continuously cleaning sand filters. The backwash water proceeds through a clarifier to remove the solids prior to discharge. The solids collected in the clarifier are either dewatered using a screw-press and hauled to a permitted disposal facility or trucked to the sanitary sewer and the supernatant off of the

clarifier is returned to the treatment process. The ion-exchange process uses a perchlorate-specific ion exchange resin that is disposed of when the resin's capacity for taking up perchlorate is exhausted. The resin is then replaced with fresh resin and the spent resin taken to a permitted disposal facility.

4. Removal of NDMA is accomplished using ultraviolet light oxidation in combination with hydrogen peroxide. This process is highly energy and concentration dependent. Hydrogen peroxide can be added to this process to oxidize VOCs. The Discharger has demonstrated that 0.007 µg/L is the technical and cost-effective effluent level (Best Available/Cost Effective Technology (BACT)) for GETs J, KA, LA and LB. GET EF and GET AB systems are able to achieve concentrations less than 0.003 µg/L.

D. Discharge Points and Receiving Waters

1. The Facility is located in Section T9N, R7E, MDB&M, as shown in Attachments B-1 and B-2, parts of this Order.
2. Treated groundwater is discharged as described in Table F-2:

Table F-2 Discharge Points and Receiving Waters

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
Outfall 001	Treated Groundwater from ARGET, GET EF, GET J, GET AB, White Rock GET, Cooling Tower 20019	38º, 38', 00" N	121º, 16', 07" W	Buffalo Creek to American River
Outfall 002	Treated Groundwater from GET LA	38º, 36', 29" N	121º, 18', 33" W	American River
Outfall 002A	Treated Groundwater from GET LB	38º, 37', 31" N	121º, 18', 13" W	Drainage Ditch to American River
Outfall 003	Outfall no longer proposed for use	38º, 36', 53" N	121º, 18', 10" W	Drainage Ditch to American River
Outfall 004	Treated Groundwater from GET KA and AC-6	38º, 36', 07" N	121º, 19', 02" W	Drainage Ditch to American River
Outfall 005	Treated Groundwater from AC-23	38º, 34', 46" N	121º, 19', 42" W	Boyd Station Channel to American River
Outfall 006	Treated Groundwater from GET HA and AC-18	38º, 32', 18" N	121º, 18', 59" W	Morrison Creek

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
Outfall 007	Treated Groundwater from Sailor Bar GET	38º, 37', 59" N	121º, 14', 21" W	Sailor Bar Pond
Outfall 008	Treated Groundwater from Various GETs	38º, 38', 6" N	121º, 13', 13" W	American River at Natomas Stilling Basin
Outfall 009	Treated Groundwater from Various GETs	38º, 38', 12" N	121º, 12', 11" W	Alder Creek – Tributary to the American River
Outfall 010	Treated Groundwater from White Rock Get to Morrison Creek	38º, 58', 52" N	121º, 18', 72" W	Morrison Creek

3. Treated groundwater is discharged from Discharges 001, 002, 005, 016, 017 and 019 to Buffalo Creek (tributary to the American River), from Discharges 004, 014 and 017 to Morrison Creek (tributary to the Sacramento River), from Discharges 007, 008, 009 and 013 to drainage channels to the American River, and from Discharge 010 to a pond in Sailor Bar Park (see table on cover page), waters of the United States and part of the Sacramento-San Joaquin Delta (Delta) within the American River and Sacramento River watersheds. Sacramento County requested during development of a previous permit to allow for the potential discharge from some or all of the GETs covered in this permit to Alder Creek, to assist in their reuse of the treated groundwater. The previous NPDES permit and this permit include a provision allowing for the discharge to Alder Creek pending completion of acceptable studies of the potential thermal and toxicity impacts on Alder Creek, Lake Natoma, the American River and the Nimbus Fish Hatchery.

E. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the existing Order for discharges and representative monitoring data from the term of the previous Order are provide in Table F-3.

Table F-3 Historic Effluent Limitations

Facility	Parameter	Units	Historic Effluent Limitations – Average Monthly	Average Weekly	Daily Maximum	Highest Daily Discharge
GET EF	TCE	µg/L	1.5	--	1.5	2
GET EF	Perchlorate	µg/L	4	--	6	4.7
GET EF	1,4-Dioxane	µg/L	3	--	6	0.75J
GET EF	Acetaldehyde	µg/L	5	--	5	7.1
GET EF	Formaldehyde	µg/L	50	--	50	53
GET EF	NDMA	ng/L	2	--	10	6.1
GET EF	Chloroform	µg/L	0.5	--	0.7	0.29

Facility	Parameter	Units	Historic Effluent Limitations – Average Monthly	Average Weekly	Daily Maximum	Highest Daily Discharge
ARGET	TCE	µg/L	0.5	--	0.7	0.4
ARGET	Perchlorate	µg/L	4	--	6	4.8
ARGET	1,4-Dioxane	µg/L	3	--	6	2.1
GET HA	TCE	µg/L	0.5	--	0.7	0.33J
GET HA	Perchlorate	µg/L	4	--	6	11
GET HA	Chloroform	µg/L	0.5	--	0.7	0.26J
GET J	TCE	µg/L	0.5	--	0.7	0.31J
GET J	Perchlorate	µg/L	4	--	6	<1
GET J	NDMA	ng/L	7	--	10	0.98J
GET J	Chloroform	µg/L	3	--	5	1.1
GET KA	NDMA	ng/L	7	--	10	1.3J
GET KA	TCE	µg/L	0.5	--	0.7	0.91
GET LA	NDMA	ng/L	7	--	10	1.3J
GET LB	NDMA	ng/L	7	--	10	0.95J
SAILOR BAR	TCE	µg/L	0.5	--	0.7	0.86
SAILOR BAR	Perchlorate	µg/L	4	--	6	<1
GET AB	NDMA	ng/L	2	--	10	110
GET AB	TCE	µg/L	0.5	--	0.7	0.16J
GET AB	Perchlorate	µg/L	4	--	6	2
WHITE ROCK	TCE	µg/L	0.5	--	0.7	23
WHITE ROCK	Perchlorate	µg/L	4	--	6	<1
WHITE ROCK	NDMA	ng/L	2	--	10	<2

F. Compliance Summary

Table F-4 Compliance Summary

Date	GET Facility	Constituent	Reported Result	Effluent Limitation
1/3/2018	GET EF	TCE	2 µg/L	0.5 µg/L
3/7/2018	GET EF	TCE	0.7 µg/L	0.5 µg/L
1/23/2020	GET AB	NDMA	0.0083 µg/L	0.003 µg/L
4/2/2019	GET HA	Perchlorate	8.6 µg/L	6 µg/L

G. Planned Changes

1. As stated above in Sections II(A) and II(B), in order to more easily reuse the treated groundwater, Discharge 004 may be redirected to the Boyd Station

Channel for ultimate discharge to the American River. Revision of the permit will be necessary prior to taking Discharge 004 to the Boyd Station Channel. The discharges from ARGET and/or GET E/F may also be redirected to the Natomas Stilling Basin or Alder Creek. Prior to doing so, a thermal impact study, including a mixing zone study and an assessment of the potential impacts to the Nimbus fish hatchery will need to be completed that demonstrates that there are no adverse impacts with discharging to the new location(s). The permit would then be reopened and the modified to specify the changes.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. Water Quality Control Plan. Requirements of this Order specifically implement the applicable Water Quality Control Plans.

a. **Basin Plan**. The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, May 2018 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for Buffalo Creek The Basin Plan does not specifically identify beneficial uses for Buffalo Creek, Alder Creek or Sailor Bar Park Pond, but does identify present and potential uses for the American River, to which Buffalo Creek, Alder Creek and potentially Sailor Bar Park Pond are tributary. In addition, the Basin Plan does not specifically identify beneficial uses for Morrison Creek, but does identify

present and potential uses for the Sacramento River, to which Morrison Creek is tributary. These beneficial uses of the American and Sacramento Rivers are municipal and domestic supply (MUN); agricultural supply, irrigation and stock watering (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning (SPWN); wildlife habitat (WILD). The Sacramento River has an additional designated beneficial use of navigation (NAV). In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Thus, as discussed in detail in this Fact Sheet, beneficial uses applicable to the American River, Buffalo Creek, Alder Creek, Morrison Creek and the Sailor Bar Park Pond are as follows:

Table F-5 – Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002, 005, 016, 017, 018 and 019	Buffalo Creek and Alder Creek, Tributary of the American River	UExisting: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.
004, 014, and 017	Morrison Creek, Tributary of the Sacramento River	UExisting: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD
007, 009, 012, and 013	American River	UExisting: MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.
010	Sailor Bar Pond, Potentially tributary to American River	UExisting:MUN, AGR, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD.

b. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on 7 January 1971 and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters. Requirements of this Order implement the Thermal Plan.

c. **National Toxics Rule (NTR) and California Toxics Rule (CTR)**. U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.

d. **State Implementation Policy**. On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

e. **Antidegradation Policy**. Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Anti-Degradation Policy requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. The Board finds this order is consistent with the Federal and State Water Board antidegradation regulations and policy.

f. **Anti-Backsliding Requirements**. Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

g. **Domestic Water Quality**. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

h. **Endangered Species Act Requirements**. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water

limits, and other requirements to protect the beneficial uses of waters of the state <If RARE is a designated use add: including protecting rare, threatened, or endangered species>. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

i. **Emergency Planning and Community Right to Know Act**. Section 13263.6(a) of the Water Code, requires that "the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective".

The Central Valley Water Board has adopted numeric water quality objectives in the Basin Plan for the following constituents: <list toxic constituents, copper, lead, etc., for which numeric water quality objectives have been adopted for the receiving waters involved in this discharge>. As detailed elsewhere in this Permit, available effluent quality data indicate that none of these constituents have a reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

The Central Valley Water Board has adopted a numeric receiving water objective for <list toxic constituents, copper, lead, etc., for which numeric water quality objectives have been adopted for the receiving waters involved in this discharge> in the Basin Plan. As detailed elsewhere in this Permit, available effluent quality data indicate that effluent concentrations of <list constituent(s)> does have a reasonable potential to cause or contribute to an excursion above numeric water quality objectives for <list constituent(s)> included within the Basin Plan. The EPCRA section 313 toxic chemical release data report indicates that the <list constituent(s)> discharge into the Discharger's collection system. An effluent limitation for <list constituent(s)> is included in this permit pursuant to Water Code section 13263.6(a).

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable

potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

j. **Storm Water Requirements**. U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. <The Discharger has submitted a Notice of Intent (NOI) and been approved for coverage under the State Water Board's Industrial Storm Water General Order. Therefore, this Order does not regulate storm water.> OR <The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Storm water General Order. Therefore, this Order does not regulate storm water.> OR <The State Water Resources Control Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001), does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). All storm water at the Facility is captured and directed to the Facility headworks for treatment and disposal under this Order. Therefore, coverage under the General Storm Water Permit is not required.>

k. **Storm Water Requirements**. U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124The NPDES Industrial Storm Water Program does not regulate storm water discharges from groundwater treatment systems. However, the NPDES Industrial Storm Water Program does regulate discharges of storm water associated with industrial facilities. If storm water discharges associated with these Facilities are subject to applicable storm water program requirements, the Discharger is obligated to comply with Federal Regulations.

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2018 U.S. EPA gave final approval to California's 2014-2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical

pollutants so that water quality objectives can be met in the segment." The listing for the American River includes: mercury, PCBs and unknown toxicity.

2. **Total Maximum Daily Loads (TMDL's).** Table F-4, below, identifies the 303(d) listings and any applicable TMDLs. At the time of this permit renewal, there are no approved TMDL's with waste load allocations that apply to this Facility.

Table F-6. 303 (d) List for American River

Pollutant	Potential Sources	TMDL Status
Methyl mercury	Abandoned mines	Completed 2010
PCBs	--	2021
Unknown toxicity	--	2021

3. The 303(d) listings and TMDL's have been considered in the development of the Order. Monitoring results supplied by the Discharger have not detected methyl mercury or PCBs in the effluent. Toxicity has also not been identified in the effluent but has been detected in the upstream receiving water.

E. Other Plans, Polices and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality." Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative

water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-17.00, contains an implementation policy, "Policy for Application of Water Quality Objectives", that specifies that the Central Valley Water Board "will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00). The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."

A. Discharge Prohibitions

1. **Prohibition III.A** (No discharge or application of waste other than that described in this Order). This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B** (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section 122.41(m)(4)). As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a

precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C** (No controllable condition shall create a nuisance). This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D** (No discharge of hazardous waste). This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.

5. Discharge of wastewater to Outfall 008 and 009 is prohibited until approved by the Executive Officer. Completion of an adequate assessment of the thermal impacts, including a dilution study in Alder Creek/Lake Natoma, and potential impacts on the Natomas Fish Hatchery associated with those discharges at those two outfalls is required before consideration of approval by the Executive Officer.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works

to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

2. Applicable Technology-Based Effluent Limitations

a**. Flow.** A technology-based effluent limitation for flow is established in this Order to monitor the performance of the groundwater treatment systems from the standpoint of volumes being treated. The maximum daily flow rates in previous Order R5-2011-0088 were based on the designed flows and are retained in this Order. This Order contains a maximum daily and long term average effluent limitations of 5.04 mgd for ARGET, 11.52 mgd for GET E/F, 3.9 mgd for GET HA, 6.75 mgd for GET J, 5.11 mgd for GET KA, 2.88 mgd for GET LA, 1.44 mgd for GET LB, 5.76 mgd for GET AB, 2.88 mgd for White Rock GET, 0.58 mgd for Sailor Bar Park Well, 1.08 mgd for AC-6, and 2.59 mgd for AC-18 based on the maximum daily effluent flows reported in Aerojet's RWD. In accordance with 40 CFR Section 122.45, this Order includes mass effluent limitations based on the long-term average effluent flows listed above and reported in the Discharger's RWD.

b. **Perchlorate.** The monthly average effluent limitation for perchlorate is established at 4 µg/L, a value that the Discharger, utilizing commercially available technology at ARGET, GET AB, GET HA, GET J and AC-6, has shown to be capable of technically and economically meeting on a consistent basis. As discussed below in Section IV.C.3, the Water Quality Based Effluent Limitation is 6 µg/L. Therefore, systems for perchlorate removal are not added until the perchlorate concentration in the influent is 6 µg/L or greater. Once the treatment system is added, the effluent limitation is 4 µg/L. This possibility is only applicable to Golden State well AC-23 at this time.

GET EF utilizes a more complex biological treatment system to remove perchlorate due to the elevated concentrations. The biological system has shown to generally meet the 4 µg/L effluent limitation for the other GET facilities. However, there are instances with the biological system operating in manner to also assure the efficient operation of downgradient UV/peroxide and air stripping systems and their ability to meet the effluent limitations for the constituents they are designed to treat (VOCs and perchlorate, when

insufficient treatment results in concentrations exceeding 4 µg/L perchlorate. As an example, alcohol is used as a food source for the bacteria reducing the perchlorate. Excess alcohol from the biological treatment system can be turned into formaldehyde and acetaldehyde in the UV/peroxide treatment unit at concentrations exceeding the effluent limitations for those two constituents. Insufficient alcohol does not let the bacteria sufficiently reduce the perchlorate. Thus, there is a balancing act on the alcohol feed rate to meet two conflicting requirements. Therefore, the monthly average effluent limitation for perchlorate at GET EF is set at the Water Quality Based Effluent Limit (see IV.C.3.c.iii) of 6 µg/L. The monthly average was developed using the last 10 years of data from the GET EF effluent where the detected maximum effluent concentration was 11 µg/L. Under the construction and operation requirements the Discharger must still design and operate the system to attempt to achieve an effluent level of 4 µg/L or less.

c. In addition, during a recent expansion of GET EF ion exchange vessels were added for the treatment of perchlorate. These ion exchange vessels are utilized for the low the flow from extraction wells with low concentrations of perchlorate and reserving the higher concentration wells for treatment by the fluidized bed reactors. This has helped the fluidized bed reactors more consistently meet the effluent limits for perchlorate by reducing the hydraulic load closer to the original design rate. The ion exchange vessels can consistently achieve an effluent concentration less than 4 µg/L. Data from operation of the new system with the FBRs will be used during the next permit renewal to determine if lower effluent limitations are appropriate for perchlorate at GET EF.

d. **Volatile Organics (VOCs).** The effluent limits for VOCs are generally based on Best Available Technology utilizing either air stripping or carbon adsorption which have been demonstrated to readily reduce VOCs to below 0.5 µg/L. The 0.5 µg/L effluent limitation is below the Water Quality Based Effluent Limits (WQBEL) calculated below for VOCs of concern, with the exception of 1,2-Dichloroethane. The WQBEL will be used for 1,2-Dichloroethane.

   Carbon adsorption and ultraviolet light are not entirely effective on the removal of chloroform at low concentrations. GETs J, HA, AC-6 and Well 4665 have low influent concentrations of chloroform (1 µg/L for GET J, AC-6 and Well 4665, 0.55 for GET HA). Removal of chloroform by GAC is expensive. As an example, relying on removal of chloroform to 0.5 µg/L by carbon increases the cost of operating GET J by over $500,000 per year. The effluent limit for chloroform for GET J is set at 3 µg/L which will meet the WQBEL for chloroform of 1.1 µg/L in Buffalo Creek as it mixes with the effluents from GETs E/F and ARGET. The effluent limit for chloroform for AC-6 is also 3 µg/L as it will mix with the effluent from GET KA in the drainage channel to the American River. The chloroform effluent limit from GET HA is set at 2 µg/L as it mixes with the effluent from GET HB in the drainage channel to Morrison Creek.

The effluent limitation for TCE for GET EF was modified in Order No. R5-2009-0016 to 1.5 µg/L based on the treatment systems in use at that facility. Utilizing the best available technologies for perchlorate, NDMA and VOCs at the GET EF facility hinders the ability to consistently remove the TCE and cis-1,2-DCE to 0.5 µg/L due to the presence of very low concentrations of suspended solids from the biological treatment system for the removal of perchlorate.. The concentration of TCE within the receiving water and discharge remain below the Water Quality Objective for TCE of 1.7 µg/L and 6 µg/L for cis-1,2-DCE.

e. **N-nitrosodimethylamine (NDMA).** Under a previous version of the permit, the Discharger performed a study on the technical and economic implications of treating NDMA at GET J to 0.002 µg/L, the effluent limitation found in that previous version. An interim effluent limit of 0.01 µg/L was established, and the studies undertaken. The studies showed that there is a significant reduction in treatment efficiency below a concentration of 0.01 µg/L, and even less efficiency below 0.007 µg/L. It was estimated that there would be approximately $50 million in increased costs (30-year net present worth) to reduce the effluent from 0.010 µg/L to 0.002 µg/L, assuming power cost per kilowatt/hour remained constant. The Discharger's study concluded that treating to 0.007 µg/L was both technically achievable and cost-effective for GET J and future GETs using the low-watt UV technology to remove NDMA from groundwater. Using an effluent limitation of 0.007 µg/L for GET J and the available dilution in Buffalo Creek provided by flows from GET E/F and ARGET, the WQBEL of 0.003 µg/L will be met in Buffalo Creek. For GET AB the effluent limitation is set at 0.003 µg/L the WQO as the treatment system has shown difficulty in achieving 0.002 µg/L on a consistent basis. Future discharges at Discharge Points 007, 008, and 009 will discharge directly to the American River with a minimum dilution of 50:1. A technology-based effluent limitation of 0.007 µg/L will meet the WQO in the American River

Summary of Technology-based Effluent Limitations
Discharge Point Nos. 001, 002, 004, 005, 007, 008, 009, 010, 011, 013, 014, 015, 016, and 017

Table F-7. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations Monthly Average	Effluent Limitations Daily Maximum
ARGET Flow	mgd	5.04	5.04
GET EF Flow	mgd	11.52	11.52
GET HA Flow	mgd	3.9	3.9
GET J Flow	mgd	6.75	6.75
GET KA Flow	mgd	5.11	5.11
GET LA Flow	mgd	2.88	2.88
GET LB Flow	mgd	1.44	1.44
Sailor Bar Park Well Flow	mgd	0.58	0.58

Parameter	Units	Effluent Limitations Monthly Average	Effluent Limitations Daily Maximum
GET AB Flow	mgd	5.76	5.76
White Rock GET Flow	mgd	2.88	2.88
Golden State AC-6 Flow	mgd	1.08	1.08
Golden State AC-18 Flow	mgd	2.59	2.59
VOCs	µg/L	0.5	0.7
Perchlorate	µg/L	4.0	6
GET EF Perchlorate	µg/L	6.0	10
GET J, GET KA, GET LA, GET LB NDMA	µg/L	0.002	0.010
GET AB NDMA	µg/L	0.007	0.010
GET HA, GET J, AC-6 Chloroform	µg/L	0.003	0.010

Table F-7 Notes:

1. 1,2-dichloroethane has a WQBEL, listed below, that is more stringent than the 0.5 µg/L listed on this table. GET E/F has an effluent limit of 1.5 for TCE and cis-1,2-DCE. Chloroform has an effluent limit of 3 µg/L for GET J and AC-6 and a limit of 2 µg/L for GET HA.

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality

standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.
The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983." Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water and Beneficial Uses.** Buffalo Creek originates on the eastern side of the facility, meandering westward to an area near the intersection of the Folsom South Canal and US 50. At that point, Buffalo Creek

is routed into the East and West Retention Basins and Ponds 1 and 2. In those impoundments, the water from Buffalo Creek mixes with that from the Administration Ditch. The impounded water is stored for evaporation percolation. Flows occur in Buffalo Creek upstream of the impoundments only during the wintertime and are associated with rainfall runoff and return of infiltrated rainfall to the streambed. With the addition of periodic discharges from GETAB and White Rock GET there could be up to 4900 gpm in Buffalo Creek upstream of the discharge of ARGET to Buffalo Creek. Just downstream of the impoundments, there is a year-found flow in Buffalo Creek associated with the discharge from ARGET and GET E/F. Those plants discharge up to 9000 gpm of treated groundwater under an NPDES permit. Buffalo Creek meanders for approximately 2.5 miles through commercial and residential areas prior to joining the American River at the Sunrise Boulevard overcrossing. See section III.C.1, above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from April 2008 through April 2020, which includes effluent and ambient background data submitted in SMRs, the Report of Waste Discharge (ROWD), and the database supplied by the Discharger. Additional data outside of this range was also analyzed where there was inadequate data to perform an analysis. As an example, sampling was conducted prior to the last version of the permit to ascertain which constituents might be present in the influent and effluent.

c. **Assimilative Capacity/Mixing Zone.** The Regional Board finds that based on the available information that three of the receiving waters, Buffalo Creek, Morrison Creek and Alder Creek, that these three creeks, absent the discharges, are ephemeral streams, or at times the flow upstream of the discharges is significantly less than that of the discharge. The ephemeral and/or low flow nature of the creeks means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. However, there is dilution available on Buffalo Creek at Discharge Point 005 due to the flow from upstream Discharges 001 and 002 and periodic discharges from 016 and 017. As the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the creeks help support the aquatic life. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Therefore, the Regional Water Board has evaluated the need for water quality-based effluent limitations for pollutants without benefit of dilution in this Order. These water quality-based effluent limitations are based on the application of water quality criteria or objectives at the points of discharge.

d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. This permit does not contain effluent limits related to metals.

3. Determining the Need for WQBEL's

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R 122.44(d)(1)(i) state, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available wasteload allocations developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a reasonable potential analysis or RPA. Central Valley Water Board staff conducted RPA's for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPA's for constituents of concern for the Facility. The entire RPA is included in the administrative record and a summary of the constituents of concern is provided in Attachment G. For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method, therefore, the RPA's have been conducted based on EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

a. **Constituents with No Reasonable Potential.** The Central Valley Water Board conducted the reasonable potential analysis (RPA) according to section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Boards may use the SIP as guidance for water quality-based toxics control. The SIP states in the introduction *"The goal of this Policy is to establish a standardized approach to permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency."* Therefore, in this

Order, unless otherwise specified, the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information as part of the application, in studies, and as directed by monitoring and reporting programs.

Most constituents with no reasonable potential are not discussed in this Order.

Table F-8 Summary of Reasonable Potential Analyses

Parameter	Units	MEC	99th Percentile MEC	WQO/WQC	Source	RP:
Perchlorate	µg/L	11	11	6	California Primary MCL	Yes
NDMA	µg/L	0.100	0.100	0.003	CTR HH	Yes
Acetaldehyde	µg/L	29	29	2.2	USEPA RIS	Yes
Copper	µg/L	6.3	6.3	7.7/11	CTR CCC/CMC	No
Mercury	µg/L	0.001	0.001	0.05	CTR HH	No
Nickel	µg/L	13	13/390	43	CTR CCC/CMC	No
Zinc	µg/L	42	42	99	CTR CCC/CMC	No
Barium	µg/L	90	124	1000	California Primary MCL	No
Iron	µg/L	55	75	300	California Secondary MCL	No
Manganese	µg/L	<5	23	50	California Secondary MCL	No
Chloride	mg/L	13	39	106	Water Quality for Agriculture	No
Nitrate	mg/L	0.8	4	10	California Primary MCL	No
Sulfate	mg/L	12	60	250	California Secondary MCL	No
Electrical Conductivity	µmhos/cm	210	230	700	Water Quality for Agriculture	No

Parameter	Units	MEC	99th Percentile MEC	WQO/WQC	Source	RP:
Total Dissolved Solids	mg/L	220	260	450	Water Quality for Agriculture	No

Notes for Table F-8:
1. MEC is maximum effluent concentration.
2. WQO/WQC is Water Quality Objective and Water Quality Criteria
3. RP is reasonable potential

i. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for perchlorate, NDMA, and acetaldehyde. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

ii. **N-Nitrosodimethlyamine**

(a) **WQO.** NDMA is believed to be a human carcinogen at very low concentrations. The estimated incremental $1x10^{-6}$ excess cancer risk value (Public Health Goal) established by the Office of Environmental Health Hazard Assessment for the State of California for this pollutant is 0.003 µg/L. Barring any dilution within the receiving water, this value is used as the effluent limitation.

(b) **RPA Results.** The maximum effluent concentration (MEC) for NDMA for GET EF was an estimated 0.0024 µg/L, for GET J was 0.0068 µg/L and for GET AB 0.10 µg/L. NDMA was not detected upstream or downstream on Buffalo Creek, the receiving water for these two effluents. As the effluents generally comprise the flow of the stream during most of the year. The discharges have a reasonable potential to cause an in-stream excursion above the WQO.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for NDMA. However, for GET J, there is mixing with the effluents from GET E/F and ARGET. Therefore, this Order contains a final average monthly effluent limitation (AMEL) for NDMA of 0.002 µg/L for GET EF which has been achievable at GET EF and is lower than the Public Health Goal of 0.003 µg/L.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 0.0024 µg/L for GET EF is less than the applicable WQBELs. For GET J the effluent limitation of 0.007 µg/L (technology based effluent limit) is sufficient to meet the WQO for NDMA in Buffalo Creek after mixing with the effluents from upstream discharges from GET E/F and ARGET (no NDMA) can achieve the

WQO in-stream. The average NDMA concentration in the GET J effluent over the past 5 years is 0.0015 µg/L. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible. For GET AB the effluent limitation is set at 0.003 µg/L the WQO as the treatment system has shown difficulty in achieving 0.002 µg/L on a consistent basis. For White Rock GET there is no treatment for NDMA at this time as there is no NDMA in the influent. However, there are concentrations exceeding the WQBEL upgradient and thus the WQBEL is more appropriate for this discharge. The other GET facilities that treat for NDMA discharge to drainage channels to the American River where there would be a minimum of 50:1 dilution and the technology based-effluent limit of 0.007 µg/L is sufficient and a WQBEL is not needed for the other discharges.

iii. **Acetaldehyde**

(a) **WQO.** Acetaldehyde is designated as a probable human carcinogen by USEPA with an estimated incremental $1x10^{-6}$ excess cancer risk level in drinking water of 2.2 µg/L. Barring any dilution in the receiving water, this value is used as the WQO.

(b) **RPA Results.** Analysis of the effluent data shows that the MEC of 11 µg/L is greater than the applicable WQBEL for GET EF. The exceedance was one of three times in the past five years that the concentration in the GET E/F effluent exceeded 6 µg/L. The other GET facilities have been in compliance with the WQO as an effluent limitation.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for NDMA. However, for GET EF, there is mixing with the effluents from ARGET and GET J. There is not sufficient dilution provided by these effluents to reduce the concentration below the WQO. The detection limit of acetaldehyde is 5 µg/L, which also exceeds the WQO. Therefore, this Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for acetaldehyde of 5 µg/L based on the USEPA estimated incremental $1x10^{-6}$ cancer risk level for drinking waters of 5 µg/L.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 29 µg/L is greater than the than the applicable WQBEL. This exceedance only occurred six times time during the last five years. Upon mixing with ARGET and GET J effluents in Buffalo Creek the in-stream value would be still be greater than the WQO. The Discharger is expanding the capacity of GET E/F in a manner in which the higher concentrations of perchlorate will still be processed through the FBRs, but lower concentrations will be treated by ion exchange. This will reduce the amount of alcohol used and add additional flow with no potential to form acetaldehyde. These changes are projected to reduce the potential for the discharge to exceed the effluent limit.

iv. **Perchlorate**

(a) **WQO.** Perchlorate has been determined to have a potential adverse impact on the thyroid. The California Department of Public Health has adopted a Maximum Contaminant Level for perchlorate of 6 µg/L and the California Department of Health Hazard Assessment has recently changed the Public Health Goal from 6 µg/L to 1 µg/L. Concentrations below 1 µg/L would pose a *de minimus* risk to human health

(b) **RPA Results.** Analysis of the effluent data shows that the MEC of 11 µg/L is greater than the applicable WQBEL for GET EF. The exceedance was one of three times in the past five years that the concentration in the GET E/F effluent exceeded 6 µg/L. The other GET facilities have been in compliance with the WQO as an effluent limitation.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for perchlorate at GET EF. Therefore, this Order contains a final average monthly effluent limitation (AMEL) or 6 µg/L for GET EF based on the California Drinking Water Standard of 6 µg/L.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 11 µg/L is greater than the applicable WQBEL. This exceedance only occurred three times during the last seven years. Upon mixing with ARGET and GET J effluents in Buffalo Creek the in-stream value would be less than the WQO. The technology based effluent limit is 4 µg/L for all the GET facilities except GET EF. Compliance with that limit would also comply with the WQBEL.

v. **Chlorine Residual**

(a) **WQO.** USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) **RPA Results. RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist, and effluent limits are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures

for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters)." USEPA's Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001(TSD) also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data." With regard to POTWs, USEPA recommends that, "POTWs should also be characterized for the possibility of chlorine and ammonia problems." (TSD, p. 50)

The Discharger uses chlorine to control biological growth in the extraction wells associated with the White Rock GET, which is extremely toxic to aquatic organisms. Although the Discharger uses an air stripper to remove volatile organics, which will also dechlorinate the effluent prior to discharge to Buffalo Creek, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) **WQBELs.** The USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and

1-hour average effluent limitation for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) **Plant Performance and Attainability.** The Discharger conducted a pilot test of the disinfection system on the White Rock GET extraction wells and showed that at the proposed chlorine dosage that the effluent concentration remained below 0.01 mg/L.

vi. **pH**

(a) **WQO.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the *"…pH shall not be depressed below 6.5 nor raised above 8.5.*"

(b) **RPA Results.** The effluent pH ranged from 7.2 to 8.4 for GET E/F. As the effluent from GET E/F, along with GET J and ARGET comprise the flow of Buffalo Creek during most of the year the discharges have a reasonable potential to cause an in-stream excursion above the WQO.

(c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** The plants consistently achieve a pH within the acceptable range.

4. WQBEL Calculations

a. This Order includes WQBELs for pH, chlorine residual, toxicity, perchlorate and NDMA. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

b. **Effluent Concentration Allowance.** For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from section 1.4 of the SIP:

$ECA = C + D(C – B)$ where $C>B$, and
$ECA = C$ where $C \leq B$

where:

ECA = effluent concentration allowance
D = dilution credit
C= the priority pollutant criterion/objective
B= the ambient background concentration.
According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to

protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples.

c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCL's to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the AWEL is calculated using the AWEL/AMEL multiplier, where the AWEL multiplier is based on a 98th percentile occurrence probability and the AMEL multiplier is from Table 2 of the SIP.

   For non-priority pollutants with secondary MCL's that protect public welfare (e.g., taste, odor, and staining), WQBEL's were calculated by setting the LTA equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBEL's are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.

e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBEL's are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where:
$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Table F-9. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations	Instantaneous min/max
Perchlorate – Discharge 002	µg/L	6	--	--
NDMA – Discharge 002	µg/L	0.003	0010	--
Acetaldehyde	µg/L	5	5	--
1,2-DCA	µg/L	0.38	0.5	--
pH	standard units	--	--	6.5/8.5
Chlorine Residual	mg/L	0.01	0.02	--
Acute Toxicity	% survival	--	--	--
Chronic Toxicity	TU_c	Narrative	--	--

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute and chronic toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at 3.1.20). The Basin Plan also states that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…".

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Acute whole effluent toxicity is not a priority pollutant. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

70%, minimum for any one bioassay; and
90%, median for any three consecutive bioassays.

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page 3.1.) The table below is chronic WET testing performed by the Discharger from December 2003 through March 2016. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

Table F-10. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow Pimephales promelas Survival (TUc)	Fathead Minnow Pimephales promelas Growth (TUc)	Water Flea Ceriodaphnia dubia Survival (TUc)	Water Flea Ceriodaphnia dubia Growth (TUc)	Green Algae Pseudokirchneriella subcapitata Growth (TUc)
12/2003	1	1	1	1	1
03/2004	1	1	1	1	1
06/2004	1	1	1	1	1
09/2004	1	1	1	1	1
12/2004	1	1	1	1	1
12/2005	1	2	1	2	1
03/2007	1	1	1	1	1
03/2008	1	1	1	1	1
03/2009	1	1	1	1	1
03/2010	1	1	1	1	1
03/2011	1	1	1	1	1
03/2012	1	1	1	1	1
03/2014	1	1	1	1	1

Date	Fathead Minnow Pimephales promelas Survival (TUc)	Fathead Minnow Pimephales promelas Growth (TUc)	Water Flea Ceriodaphnia dubia Survival (TUc)	Water Flea Ceriodaphnia dubia Growth (TUc)	Green Algae Pseudokirchneriella subcapitata Growth (TUc)
03/2015	1	1	1	1	1
03/2016	1	1	1	1	1

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CF.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated by multiplying the concentration limitation by the Facilities' allowable discharge flow rate and the appropriate unit conversion factor. Consistent with 40 CFR 122.45(b)(2)(i), the reasonable measure of actual flow for the Facilities are those values listed in Table F-5 of the Fact Sheet as the Discharger is encouraged to maximize groundwater remediation and flows are likely to increase over time with the addition of new extraction wells to expedite cleanup.

2. Averaging Periods for Effluent Limitations – Not Applicable

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

4. Antidegradation Policies

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged. The increase will not have significant impacts on aquatic life, which is the beneficial use most likely affected by the pollutants discharged. The increase will not cause a violation of water quality objectives. Any change in water quality that is

expected to occur as a result of the issuance of this order will be consistent with the maximum benefit to the people of the state and will not unreasonably affect present and anticipated beneficial uses Furthermore, compliance with these requirements in this order will result in the use of best practicable treatment or control of the discharge.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on volatile organics, perchlorate and NDMA. The WQBELs consist of restrictions on Restrictions on flow, chlorine residual, pH, toxicity, perchlorate and NDMA. This Order's technology-based effluent restrictions implement the minimum, applicable federal technology-based requirements.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1).

Summary of Final Effluent Limitations
Discharge Points 001 through 019

Table F-11. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations Avg Monthly/Daily Max	Basis[1]
Flow – Discharge 001	mgd	AMEL 5.04 MDEL 5.04	DC
Flow – Discharge 002	mgd	AMEL 11.52 MDEL 11.52	DC
Flow – Discharge 004	mgd	AMEL 3.9 MDEL 3.9	DC
Flow – Discharge 005	mgd	AMEL 6.75 MDEL 6.75	DC
Flow – Discharge 007	mgd	AMEL 5.11 MDEL 5.11	DC
Flow – Discharge 008	mgd	AMEL 2.88 MDEL 2.88	DC
Flow – Discharge 009	mgd	AMEL 1.44 MDEL 1.44	DC
Flow – Discharge 010	mgd	AMEL 0.58 MDEL 0.58	DC
Flow – Discharge 013	mgd	AMEL 1.08 MDEL 1.08	DC
Flow – Discharge 014	mgd	AMEL 2.59 MDEL 2.59	DC
Flow – Discharge 016	mgd	AMEL 5.76 MDEL 5.76	DC
Flow – Discharge 017	mgd	AMEL 2.88 MDEL 2.88	DC
Flow – Discharge 019	mgd	AMEL 0.0009 MDEL 0.0009	DC
Volatile Organic Contaminants	µg/L	AMEL 0.5 MDEL 0.7	ML
Trichloroethylene–Discharge 002	µg/L	AMEL 1.5 MDEL 1.5	BP
Trichloroethylene-Discharge 018	µg/L	AMEL 3 MDEL 4	BP
cis-1,2-dichlorethylene -Discharge 002	µg/L	AMEL 1.5 MDEL 1.5	BP
Chloroform – Discharges 005, 013	lbs/day	AMEL 3.0 MDEL 5.0	BP

Parameter	Units	Effluent Limitations Avg Monthly/Daily Max	Basis[1]
Chloroform – Discharge 004	µg/L	MDEL 3	BP
1,4-Dioxane -	lbs/day	AMEL 4 MDEL 6	ML,BP
1,2-Dichloroethane	µg/L	AMEL 0.38 MDEL 0.5	BP
N-nitrosodimethylamine – Discharges 001, 002	µg/L	AMEL 0.002 MDEL 0.010	ML
N-nitrosodimethylamine Discharges 005, 007, 008, 009	µg/L	AMEL 0.007 MDEL 0.007	PF,BP
N-nitrosodimethylamine Discharges 016,017	µg/L	AMEL 0.003 MDEL 0.007	PF,BP
Perchlorate	µg/L	AMEL 4 MDEL 6	ML
Perchlorate – Discharge 002	µg/L	AMEL 6 MDEL 10	PF, BP
Acetaldehyde	µg/L	AMEL 5 MDEL 5	BP
Formaldehyde	µg/L	AMEL 50 MDEL 50	BP
Acrylamide	µg/L	AMEL 0.05 MDEL 0.05	BP
Chlorine Residual	µg/L	AMEL 0.01 MDEL 0.02	NAWQC
pH	Standard units	Instantaneous Max 8.5 Instantaneous Min 6.5	BP
Acute Toxicity	% survival	See footnote 2	BP
Chronic Toxicity	TU_c	No toxicity – 1	BP

Table F-11 Notes:

1. DC – Based on the design capacity of the Facility.
   ML – Based on the ability of the treatment systems to dependably remove the pollutant to below practical quantitation levels for the current analytical methods
   PF – Based on performance of facility.
   BP – Based on water quality objectives contained in the Basin Plan..
   NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
2. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall not be less than:
   Minimum of anyone bioassay – 70 percent
   Median of any three consecutive bioassays – 90 percent

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications

1. The Land Discharge Specifications are necessary to protect the beneficial uses of the groundwater.

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for <ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity>.

B. Groundwater – Not Applicable

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution No. R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at 3.1.20). Based on whole effluent chronic toxicity testing performed by the Discharger from 2003 through 2018, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan’s narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the narrative toxicity objective. If the discharge exceeds the chronic toxicity effluent limitation this provision requires the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low-level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, the Central Valley Clean Water Association (CVCWA), in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-1), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

i. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.

ii. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.

iii. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.

iv. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.

v. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.

vi. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.

vii. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.

viii. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.

ix. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

Figure F-: 1WET Accelerated Monitoring Flow Chart

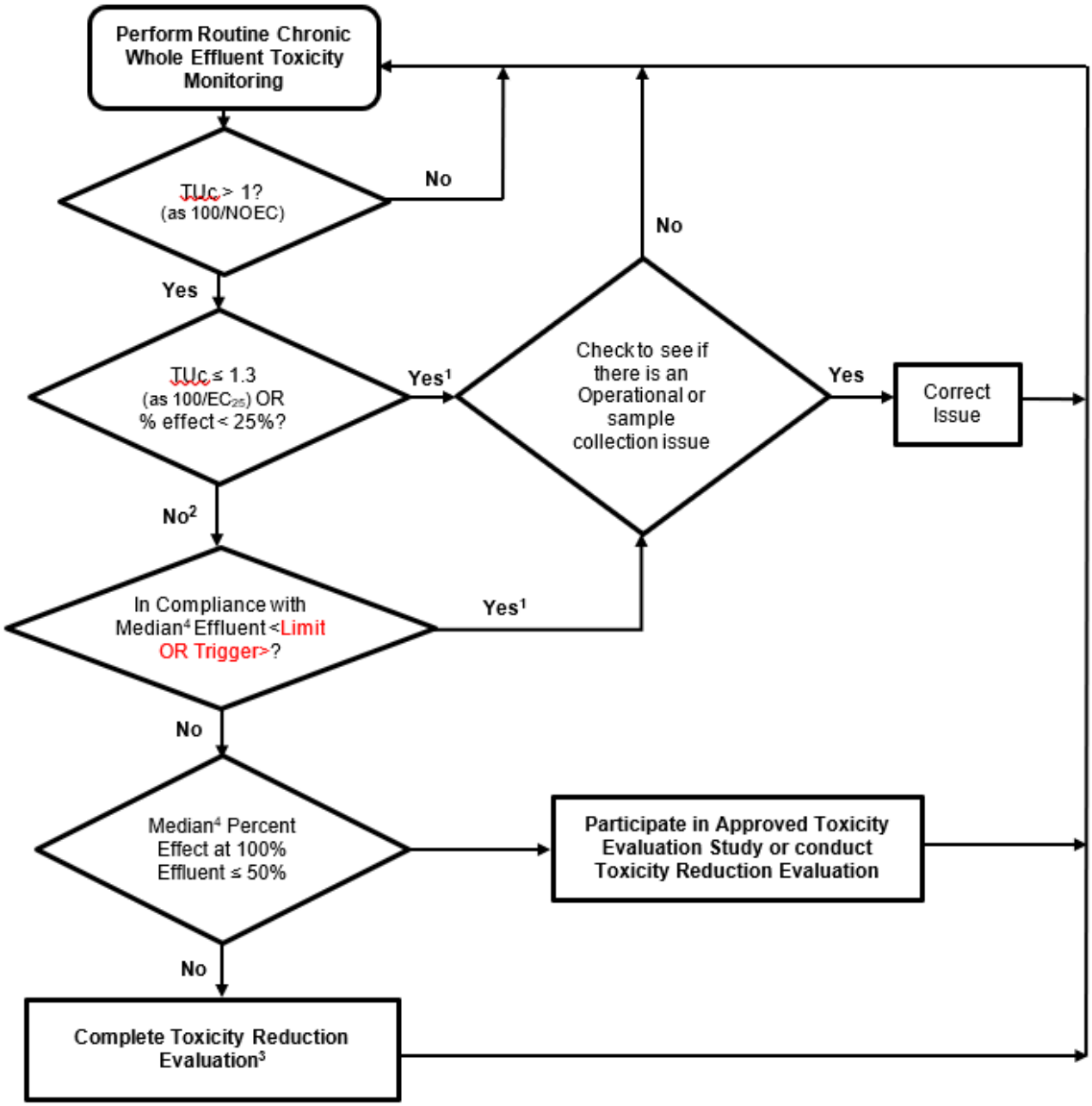

Figure F-1 Notes:

1. The Discharger may participate in an approved TES if the discharge has exceeded the chronic toxicity effluent limitations twice or more in the past 12-month period and the cause is not identified and/or addressed.
2. The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.
3. The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

4. See Compliance Determination section VII.L for procedures for calculating 6-week median.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation, and Maintenance Specifications

a. See Section VI.C.4 of this order.

5. Compliance Schedules – Not Applicable

6. Other Special Provisions

a. **Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

Water Code section 13176, subdivision (a)(1) requires that laboratory analyses shall be performed by laboratories accredited by the State Water Resources Control Board, Division of Drinking Water, which accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP). Data generated using field tests are exempt from this requirement pursuant to Water Code Section 13176, subdivision (a)(2).

The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies have been retained from Order No. R5-2017-0095.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types have been retained from Order R5-2017-0095 to determine compliance with effluent limitations for these parameters.

3. California Water Code section 13176, subdivision (a), states: "The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code." The Department of Public Health certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the Clean Water Act. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with Clean Water Act requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity**. Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity**. Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the Special Provision contained in section VI.C.6.a. of this Order. Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation).

2. **Water Supply Monitoring – Not Applicable**
3. **UV Disinfection System Monitoring – Not Applicable**
4. **Pond Monitoring – Not Applicable**
5. **Land Discharge Monitoring**

   Land discharge monitoring is required to demonstrate the breakdown of disposal from Discharge 016 and 017 which is allowed to discharge water to Rebel Hill Ditch. This is the Discharger's least preferred option as the recharge of this water causes the groundwater extraction system to be less efficient in capturing the groundwater contamination plume. The preferred option for these two discharges is reuse by the Discharger's industrial water supply system and/or the Teichert Aggregate Processing Facility on Grant Line Road. The effluent limitations for these discharges to meet the NPDES requirements are sufficiently stringent to protect groundwater quality.

6. **Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program**

   Under the authority of section 308 of the CWA (33 U.S.C. section 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S.EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

7. **Effluent and Receiving Water Characterization Study.**

   An effluent and receiving water monitoring study is required to ensure adequate information is available for the next permit renewal. During the third or fourth year of this permit term, the Discharger is required to conduct quarterly monitoring of the effluent at M-001 and M-002 and of the receiving water at R-001 for all priority pollutants and other constituents of concern as described in Attachment I. Dioxin and furan sampling shall be as described in Attachment J. In conducting this study, the Discharger shall adhere to the requirements found in Attachment E of this Order

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Aerojet Groundwater Extraction and Treatment Systems. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following posting at the Rancho Cordova City Hall and via web posting.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website (http://www.waterboards.ca.gov/centralvalley/board_info/meetings/)

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on 18 September 2020.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date: 13/14 October 2020
Time: **8:30 a.m.**
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the

petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

Instructions on how to file a petition for review (http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml) are available on the Internet.

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Alex MacDonald at (916) 464-4625.

XXVII. ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable
Perchlorate	µg/L	6.8	<4	--	6	--	--	--	--	6	Y
NDMA	µg/L	0.100	<0.002	--	0.003	--	--	--	--		Y
Copper	µg/L	6.3	<2	--	11	7.7	1300	--	--	1300	N
Mercury	µg/L	<0.001	<0.001	--	--	--	--	--	--	2	N
Nickel	µg/L	13	--	--	390	43	610	4600	--	100	N
Zinc	µg/L	42	--	--	150	150	7400	26000	--	5000	N
Barium	µg/L	90	--	--	--	--	1000	--	--	1000	N
Iron	µg/L	55	--	--	--	--	--	--	--	300	N
Manganese	µg/L	<5	--	--	--	--	--	100	--	50	N
Chloride	mg/L	13	--	--	860	230	--	--	--	250	N
Nitrate	mg/L	0.8	<0.5	--	--	--	--	10	--	10	N
Sulfate	mg/L	12	--	--	--	--	--	--	--	250	N
Electrical Conductivity	µmhos/cm	210	--	--	--	--	--	--	--	900	N

General Notes:

1. MEC = Maxiumum Effluent Concentration
2. B = Maximum Receiving Water Concentration of lowest detection level, if non-detect.
3. C = Criterion used for Reasonable Potential Analysis
4. CMC = Criterion Maximum Concentration (CTR or NTR)
5. CCC = Criterion Continuous Concentration (CTR or NTR)
6. Water & Org = Human Health Criterion for Consumption of Water & Orgranisms (CTR or NTR)
7. Org Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
8. Basin Plan = Numeric specific Basin Plan Water Quality Objective

XXVIII. ATTACHMENT H – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

A. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Central Valley Water Board is requiring the following monitoring:

1. **Drinking water constituents.** Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.
2. **Effluent and receiving water temperature.** This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.
3. **Effluent and receiving water hardness and pH.** These are necessary because several of the CTR constituents are hardness and pH dependent.
4. **Dioxin and furan sampling.** Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment J. Briefly, dischargers classified as minor must collect and analyze one wet season and one dry season sample. Pursuant to Section 13267 of the California Water Code, this Order includes a requirement for the Discharger to submit monitoring data for the effluent and receiving water as described in Attachment I.

B. Monitoring Requirements.

1. **Quarterly Monitoring**. Quarterly priority pollutant samples shall be collected from the ARGET and GET EF effluent and upstream receiving water (M-001, M-002 and R-001) and analyzed for the constituents listed in Table I-1. Quarterly monitoring shall be conducted for 1 year (4 consecutive samples, evenly distributed throughout the year) and the results of such monitoring be submitted to the Central Valley Water Board, during the fourth year of the permit term. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.
2. **Semi-annual Monitoring (dioxins and furans only).** Semi-annual monitoring is required for dioxins and furans, as specified in Attachment I. The results of dioxin and furan monitoring shall be submitted to the Central Valley Water Board with the quarterly priority data at the completion of the Effluent and Receiving Water Characterization Study, and during the fourth year of the permit term.
3. **Concurrent Sampling**. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
4. **Sample type.** All effluent samples shall be taken as 24-hour flow proportioned composite samples. All receiving water samples shall be taken as grab samples.
5. **Additional Monitoring/Reporting Requirements**. The Discharger shall conduct the monitoring and reporting in accordance with the General Monitoring Provisions and Reporting Requirements in Attachment E.

QQ. Table I-1 Priority Pollutants and Other Constituents of Concern

CTR #	Constituent	CAS Number	Practical Quantitation Level µg/L or noted
28	1,1-Dichloroethane	75343	0.5
30	1,1-Dichloroethene	75354	0.5
41	1,1,1-Trichloroethane	71556	0.5
42	1,1,2-Trichloroethane	79005	0.5
37	1,1,2,2-Tetrachloroethane	79345	0.5
75	1,2-Dichlorobenzene	95501	0.5
29	1,2-Dichloroethane	107062	0.5
	cis-1,2-Dichloroethene	156592	0.5
31	1,2-Dichloropropane	78875	0.5
101	1,2,4-Trichlorobenzene	120821	1
76	1,3-Dichlorobenzene	541731	0.5
32	1,3-Dichloropropene	542756	0.5
77	1,4-Dichlorobenzene	106467	0.5
17	Acrolein	107028	2
18	Acrylonitrile	107131	2
19	Benzene	71432	0.5
20	Bromoform	75252	0.5
34	Bromomethane	74839	0.5
21	Carbon tetrachloride	56235	0.5
22	Chlorobenzene (mono chlorobenzene)	108907	0.5
24	Chloroethane	75003	0.5
25	2- Chloroethyl vinyl ether	110758	1
26	Chloroform	67663	0.5
35	Chloromethane	74873	0.5
23	Dibromochloromethane	124481	0.5
27	Dichlorobromomethane	75274	0.5
36	Dichloromethane	75092	2
33	Ethylbenzene	100414	0.5
88	Hexachlorobenzene	118741	1
89	Hexachlorobutadiene	87683	0.5
91	Hexachloroethane	67721	1
94	Naphthalene	91203	10
38	Tetrachloroethene	127184	0.5
39	Toluene	108883	2
40	trans-1,2-Dichloroethylene	156605	0.5
43	Trichloroethene	79016	0.5
44	Vinyl chloride	75014	0.5
--	Methyl-tert-butyl ether (MTBE)	1634044	--
--	Trichlorofluoromethane	75694	--

CTR #	Constituent	CAS Number	Practical Quantitation Level µg/L or noted
--	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	5
--	Styrene	100425	0.5
--	Xylenes	1330207	0.5
60	1,2-Benzanthracene	56553	5
85	1,2-Diphenylhydrazine	122667	1
45	2-Chlorophenol	95578	5
46	2,4-Dichlorophenol	120832	5
47	2,4-Dimethylphenol	105679	2
49	2,4-Dinitrophenol	51285	5
82	2,4-Dinitrotoluene	121142	5
55	2,4,6-Trichlorophenol	88062	10
83	2,6-Dinitrotoluene	606202	5
50	2-Nitrophenol	25154557	10
71	2-Chloronaphthalene	91587	10
78	3,3'-Dichlorobenzidine	91941	5
62	3,4-Benzofluoranthene	205992	10
52	4-Chloro-3-methylphenol	59507	5
48	4,6-Dinitro-2-methylphenol	534521	10
51	4-Nitrophenol	100027	10
69	4-Bromophenyl phenyl ether	101553	10
72	4-Chlorophenyl phenyl ether	7005723	5
56	Acenaphthene	83329	1
57	Acenaphthylene	208968	10
58	Anthracene	120127	10
59	Benzidine	92875	5
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2
63	Benzo(g,h,i)perylene	191242	5
64	Benzo(k)fluoranthene	207089	2
65	Bis(2-chloroethoxy) methane	111911	5
66	Bis(2-chloroethyl) ether	111444	1
67	Bis(2-chloroisopropyl) ether	39638329	10
68	Bis(2-ethylhexyl) phthalate	117817	5
70	Butyl benzyl phthalate	85687	10
73	Chrysene	218019	5
81	Di-n-butylphthalate	84742	10
84	Di-n-octylphthalate	117840	10
74	Dibenzo(a,h)-anthracene	53703	0.1
79	Diethyl phthalate	84662	10
80	Dimethyl phthalate	131113	10
86	Fluoranthene	206440	10

CTR #	Constituent	CAS Number	Practical Quantitation Level µg/L or noted
87	Fluorene	86737	10
90	Hexachlorocyclopentadiene	77474	5
92	Indeno(1,2,3-c,d)pyrene	193395	0.05
93	Isophorone	78591	1
98	N-Nitrosodiphenylamine	86306	0.002
96	N-Nitrosodimethylamine	62759	0.002
97	N-Nitrosodi-n-propylamine	621647	0.002
95	Nitrobenzene	98953	10
53	Pentachlorophenol	87865	1
99	Phenanthrene	85018	5
54	Phenol	108952	1
100	Pyrene	129000	10
--	Aluminum	7429905	--
1	Antimony	7440360	5
2	Arsenic	7440382	1
15	Asbestos	1332214	--
--	Barium	7440393	--
3	Beryllium	7440417	2
4	Cadmium	7440439	0.25
5a	Chromium (III)	7440473	2
5b	Chromium (VI)	18540299	1
6	Copper	7440508	0.5
14	Cyanide	57125	5
--	Fluoride	7782414	--
--	Iron	7439896	--
7	Lead	7439921	0.5
8	Mercury	7439976	0.5
--	Manganese	7439965	--
--	Molybdenum	7439987	--
9	Nickel	7440020	5
10	Selenium	7782492	5
11	Silver	7440224	1
12	Thallium	7440280	1
--	Tributyltin	688733	--
13	Zinc	7440666	10
110	4,4'-DDD	72548	0.05
109	4,4'-DDE	72559	0.05
108	4,4'-DDT	50293	0.01
112	alpha-Endosulfan	959988	0.02
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01

CTR #	Constituent	CAS Number	Practical Quantitation Level µg/L or noted
--	Alachlor	15972608	--
102	Aldrin	309002	0.005
113	beta-Endosulfan	33213659	0.01
104	beta-Hexachlorocyclohexane	319857	0.005
107	Chlordane	57749	0.1
106	delta-Hexachlorocyclohexane	319868	0.005
111	Dieldrin	60571	0.01
114	Endosulfan sulfate	1031078	0.05
115	Endrin	72208	0.01
116	Endrin Aldehyde	7421934	0.01
117	Heptachlor	76448	0.01
118	Heptachlor Epoxide	1024573	0.01
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02
119	PCB-1016	12674112	0.5
120	PCB-1221	11104282	0.5
121	PCB-1232	11141165	0.5
122	PCB-1242	53469219	0.5
123	PCB-1248	12672296	0.5
124	PCB-1254	11097691	0.5
125	PCB-1260	11096825	0.5
126	Toxaphene	8001352	0.5
--	Atrazine	1912249	--
--	Bentazon	25057890	--
--	Carbofuran	1563662	--
--	2,4-D	94757	--
--	Dalapon	75990	--
--	1,2-Dibromo-3-chloropropane (DBCP)	96128	--
--	Di(2-ethylhexyl)adipate	103231	--
--	Dinoseb	88857	--
--	Diquat	85007	--
--	Endothal	145733	--
--	Ethylene Dibromide	106934	--
--	Glyphosate	1071836	--
--	Methoxychlor	72435	--
--	Molinate (Ordram)	2212671	--
--	Oxamyl	23135220	--
--	Picloram	1918021	--
--	Simazine (Princep)	122349	--
--	Thiobencarb	28249776	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--

CTR #	Constituent	CAS Number	Practical Quantitation Level µg/L or noted
--	2,4,5-TP (Silvex)	93765	--
--	Diazinon	333415	0.015*
--	Chlorpyrifos	2921882	0.014
--	Ammonia (as N)	7664417	--
--	Boron	7440428	--
--	Chloride	16887006	--
--	Flow	--	--
--	Hardness (as CaCOR3R)	--	--
--	Foaming Agents (MBAS)	--	--
--	Mercury, Methyl	22967926	0.06 ng/L*
--	Nitrate (as N)	14797558	2,000
--	Nitrite (as N)	14797650	400
--	pH	--	0.1
--	Phosphorus, Total (as P)	7723140	--
--	Specific conductance (EC)	--	--
--	Sulfate	--	500
--	Sulfide (as S)	--	--
--	Sulfite (as SOR3R)	--	--
--	Temperature	--	--
--	Total Disolved Solids (TDS)	--	--

Table I-1 Notes:

1. The reporting levels required in this table for priority pollutants constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.
2. * For Diazoninon, Chlorpyrifos, and Mercury, Methyl. Total Maximum Daily Load (TMDL) for these constituents, which require a maximum RL to determine reasonable potential and determine compliance with the TMDL.

XXIX. ATTACHMENT I – DIOXIN AND FURAN SAMPLING

The CTR includes criteria for 2,3,7,8-tetrachlorodibenzo-pdioxin (2,3,7,8-TCDD). In addition to this compound, there are many congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. The USEPA has published toxic equivalency factors (TEFs) for 17 of the congeners. The TEFs express the relative toxicities of the congeners compared to 2,3,7,8-TCDD (whose TEF equals 1.0). In June 1997, participants in a World Health Organization (WHO) expert meeting revised TEF values for 1,2,3,7,8-PentaCDD, OctaCDD, and OctaCDF. The current TEFs for the 17 congeners, which include the three revised values, are shown below:

RR. Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001
Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1

The Discharger shall conduct effluent and receiving water monitoring for the 2,3,7,8-TCDD congeners listed above to assess the presence and amounts of the congeners being discharged and already present in the receiving water. Effluent and upstream receiving water shall be monitored for the presence of the 17 congeners once during dry weather and once during wet weather for 1 year within the term of the study.

The Discharger shall report, for each congener, the analytical results of the effluent and receiving water monitoring, including the quantifiable limit and the method detection limit, and the measured or estimated concentration.

In addition, the Discharger shall multiply each measured or estimated congener concentration by its respective TEF value and report the sum of these values.