

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0052
NPDES NO. CA0081850

FOR

UNITED STATES DEPARTMENT OF THE AIR FORCE
FORMER McCLELLAN AIR FORCE BASE
GROUND WATER EXTRACTION AND TREATMENT SYSTEM (GWTS)
SACRAMENTO COUNTY

For purposes of evaluating compliance with the limitations of Order No. R5-2003-0052, the Discharger shall conduct monitoring and submit reports as specified below. To evaluate compliance with the limitations of this Order, monitoring should occur within a brief enough period to be able to evaluate the effect of the effluent on the ambient water quality. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program.

INFLUENT MONITORING

Representative influent groundwater samples shall be collected from the GWTS prior to treatment. When feasible, the influent shall be collected at approximately the same time as effluent samples.

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Volatile Organic Compound CoC's ¹	µg/L ³ , ppb ⁴	Grab	Annually
Pesticides ²	µg/L ³ , ppb ⁴	Grab	Annually
Acetone	µg/L ³ , ppb ⁴	Grab	Annually
Methyl Ethyl Ketone	µg/L ³ , ppb ⁴	Grab	Annually
Methyl Isobutyl Ketone	µg/L ³ , ppb ⁴	Grab	Annually

¹ VOC CoC's from Finding 18 of the Order, using USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2a, or later amendment.

² Using USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2d, or later amendment.

³ micrograms per Liter.

⁴ parts per billion.

EFFLUENT MONITORING

(Outfall 001 to Magpie Creek and Outfall 002 to Don Julio Creek)

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples shall be representative of the volume and quality of the discharge, including batch releases from the GWTS. A sampling point may be selected which is representative of both Outfall 001 and Outfall 002. Time of collection of samples shall be recorded. The effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Flow	mgd	Meter	Continuous
pH ¹	pH units	Grab	Weekly

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<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Electrical Conductivity @25°C ¹	µmhos/cm	Grab	Weekly
Temperature ¹	°F	Grab	Weekly
Dissolved Oxygen ¹	mg/L (ppm)	Grab	Weekly
Volatile Organic Compound CoC's ²	µg/L, (ppb) lbs/day	Grab	Monthly
Hexavalent Chromium ⁴	µg/L, (ppb) lbs/day	Grab or 24-hour composite	Monthly
Selenium (Total) ^{4,7}	µg/L, (ppb) lbs/day	Grab or 24-hour composite	Monthly
Hardness (as CaCO ₃) ⁵	mg/L, (ppm)	Grab	Quarterly
Total Dissolved Solids	mg/L, (ppm)	Grab	Quarterly
Total Suspended Solids	mg/L, (ppm)	Grab	Quarterly
Turbidity	NTU	Grab or 24-hour composite	Quarterly
Mercury (Total) ⁶	µg/L, (ppb) lbs/day	Grab or 24-hour composite	Monthly
Cadmium (Total) ⁴	µg/L, (ppb)	Grab or 24-hour composite	Annually
Total Chromium ⁴	µg/L, (ppb)	Grab or 24-hour composite	Annually
Copper (Total) ⁴	µg/L, (ppb)	Grab or 24-hour composite	Annually
Lead (Total) ⁴	µg/L, (ppb)	Grab or 24-hour composite	Annually
Zinc (Total) ⁴	µg/L, (ppb)	Grab or 24-hour composite	Annually
Basin Plan Metals (Dissolved) ⁸	µg/L, (ppb)	Grab or 24-hour composite	Annually
Nitrate ⁹	mg/L, (ppm)	Grab or 24-hour composite	Annually
Pesticides ³	µg/L, (ppb)	Grab	Annually
Acetone	µg/L, (ppb)	Grab	Annually
Methyl Ethyl Ketone	µg/L, (ppb)	Grab	Annually
Methyl Isobutyl Ketone	µg/L, (ppb)	Grab	Annually
1,4 Dioxane	µg/L, (ppb)	Grab	Monthly
<u>Acute Toxicity</u> ¹⁰	% Survival	Grab or 24-hour composite	Semi-Annually

¹ Field Measurements.

- ² VOC CoC's from Finding 18 of the Order (eight compounds; 1,1-DCA, 1,2-DCA, 1,1-DCE, cis-1,2-DCE, PCE, 1,1,1-TCA, TCE, and Vinyl Chloride). Use USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2a, or later amendment. Report all detectable concentrations between the Method Detection Limit and Minimum Level.
- ³ Using USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2d, or later amendment. Report all detectable concentrations between the Method Detection Limit and Minimum Level.
- ⁴ At a minimum the Discharger shall comply with the Monitoring Requirements for these constituents as outlined in Section 2.3 and 2.4 of the SIP. For each priority pollutant use an analytical method from the SIP, Appendix 4 with a ML below all applicable pollutant criteria. In accordance with Section 2.4.2 of the SIP, the Discharger is to instruct the laboratory analyzing samples for priority pollutants to establish calibration standards so that the ML 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. Report all peaks identified by the USEPA test methods.
- ⁵ Concurrent with metals monitoring.
- ⁶ Use clean sample collection techniques and USEPA Test Method 1669 or 1631, or later amendment for Mercury.
- ⁷ Use USEPA Test Method 7742/6020, or later amendment for Selenium.
- ⁸ Dissolved Arsenic, Barium, Copper, Cyanide, Iron, Manganese, Silver, Zinc.
- ⁹ Total Nitrate (as N).
- ¹⁰ The acute bioassays samples shall be analyzed using USEPA-821-R-02-012, Fifth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*). Applicable acute toxicity data derived from the three species chronic toxicity testing will be considered if appropriate.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

RECEIVING WATER MONITORING (Magpie Creek and Beaver Pond)

All receiving water samples shall be grab samples. Receiving water monitoring in Magpie Creek and Beaver Pond is required only during periods of effluent discharge and shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	100 feet upstream from the point of discharge to Outfall 001
R-2	100 feet downstream from the point of discharge to Outfall 001
R-3	Within 100 feet from the point of discharge to Outfall 002

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Flow ¹	cfs	R-1	Daily
pH ²	pH Units	R-1, R-2, R-3	Weekly
Electrical Conductivity @25°C ²	µmhos/cm	R-1, R-2, R-3	Weekly

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<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Dissolved Oxygen ²	mg/L, (ppm)	R-1, R-2, R-3	Weekly
Temperature ²	°F	R-1, R-2, R-3	Weekly
Hardness (as CaCO ₃) ⁴	mg/L, (ppm)	R-1, R-2, R-3	Quarterly
Total Suspended Solids	mg/L, (ppm)	R-1, R-2, R-3	Quarterly
Total Organic Carbon	mg/L, (ppm)	R-1, R-2, R-3	Quarterly
Total Dissolved Solids	mg/L, (ppm)	R-1, R-2, R-3	Quarterly
Cadmium ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Hexavalent Chromium ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Total Chromium ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Copper (Total) ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Lead (Total) ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Mercury (Total) ⁵	µg/L, (ppb)	R-1, R-2, R-3	Annually
Selenium (Total) ^{3,7}	µg/L, (ppb)	R-1, R-2, R-3	Annually
Zinc (Total) ³	µg/L, (ppb)	R-1, R-2, R-3	Annually
Basin Plan Metals (Dissolved) ⁸	µg/L, (ppb)	R-1, R-2, R-3	Annually
Nitrate ⁹	mg/L, (ppm)	R-1, R-2, R-3	Annually
Turbidity	NTU	R-1, R-2, R-3	Quarterly
Volatile Organic Compound CoC's ¹⁰	µg/L, (ppb)	R-1, R-2, R-3	Quarterly
<u>Pesticides¹¹</u>	µg/L, (ppb)	R-1, R-2, R-3	Annually

¹ Estimate of receiving water flow, recorded for each day of sample collection.

² Field measurements.

³ At a minimum the Discharger shall comply with the Monitoring Requirements for these constituents as outlined in Section 2.3 and 2.4 of the SIP. For each priority pollutant use an analytical method from the SIP, Appendix 4 with a ML below all applicable pollutant criteria. In accordance with Section 2.4.2 of the SIP, the Discharger is to instruct the laboratory analyzing samples for priority pollutants to establish calibration standards so that the ML 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. Report all peaks identified by the USEPA test methods.

⁴ Concurrent with metals monitoring.

⁵ Use clean sample collection techniques and USEPA Test Method 1669 or 1631, or later amendment for Mercury.

⁶ Field measurements.

⁷ Use USEPA Test Method 7742/6020, or later amendment for Selenium.

⁸ Dissolved Arsenic, Barium, Copper, Cyanide, Iron, Manganese, Silver, Zinc.

⁹ Total Nitrate (as N).

- ¹⁰ Using USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2a, or later amendment. Report all detectable concentrations between the Method Detection Limit and Minimum Level.
- ¹¹ Using USEPA Test Method with ML's equal to or less than ML's specified by the SIP, Appendix 4, Table 2d, or later amendment. Report all detectable concentrations between the Method Detection Limit and Minimum Level.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2 on Magpie Creek, and R-3 in Beaver Pond. Attention shall be given to the presence of:

- | | |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

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

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring for both Magpie Creek and Don Julio Creek shall be conducted to determine whether the effluent is contributing toxicity to Magpie Creek or Don Julio Creek. The testing shall be conducted as specified in EPA-821-R-02-013, Fourth Edition, or later amendment. Chronic toxicity samples shall be collected from the final GWTS effluent discharge prior to its entering Magpie Creek and Don Julio Creek. Grab samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 21 days. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas*, *Ceriodaphnia dubia*, and *Selenastrum capricornutum*
 Frequency: **Once within twelve (12) months of Order Adoption**

For Magpie Creek and Don Julio Creek, the Discharger shall conduct the chronic toxicity testing using 100% effluent and 2 controls. If toxicity is found in any of the effluent tests, the Discharger must immediately retest using the full sampling protocol of 5 dilutions listed below.

Dilution Series:	<u>Dilutions (%)</u>					<u>Controls</u>	
						Magpie Creek/Don Julio Creek	Lab
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>Water</u>	<u>Water</u>
% GWTS Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water*	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

* Dilution water shall be receiving water from Magpie Creek and Don Julio Creek taken upstream from the discharge point. If dilution water is not available in Don Julio Creek upstream from Outfall 002, use synthetic laboratory water.

REPORTING

Monitoring reports shall be submitted to the Regional Board by the **first day** of the second month following sample collection. Semi-annual and annual monitoring results shall be submitted by the **first day of the second month following each calendar semi-annual period, and year**, respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- b. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- c. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the groundwater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for accuracy.

The Discharger may also be requested to submit an annual report to the Regional 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.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

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The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered By:

THOMAS R. PINKOS, Executive Officer

(Date)

JDT/JME