



Central Valley Regional Water Quality Control Board

28 April 2016

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**REVISED MONITORING AND REPORTING PROGRAM ORDER NO. R5-2012-0058,
CHEVRON U.S.A., INC., AND CAWELO WATER DISTRICT, PRODUCED WATER
RECLAMATION PROJECT, KERN RIVER AREA STATION 36, KERN COUNTY**

Enclosed is the Revised Monitoring and Reporting Program Order No. R5-2012-0058 (MRP) for Waste Discharge Requirements Order No. R5-2012-0058 that regulates the discharge of produced water to Cawelo Water District's Reservoir B and Famoso Basins. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) made the draft MRP available, as a courtesy, to Chevron U.S.A., Inc., and Cawelo Water District. Comments, regarding the draft MRP, were prepared by each operator and submitted for review and consideration to the Central Valley Water Board. A response to each operator's comments is being prepared by Central Valley Water Board staff and will be mailed under separate cover. Since receiving comments from Chevron U.S.A., Inc., and Cawelo Water District, the Central Valley Water Board implemented additional changes to the MRP that were not included in the comments prepared by either operator.

The Central Valley Water Board amended the MRP as follows:

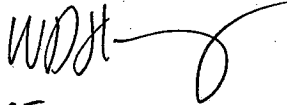
1. Analysis of Priority Pollutants was removed for Effluent Monitoring at Discharge 001.
2. Inclusion of Water Use monitoring and reporting that requires:
 - Volume of water blended with produced water,
 - Blending ratio of water and produced water, and
 - Area of cropland receiving blended produced water.

3. Inclusion of Chemicals and Additives monitoring and reporting that requires:
 - o Identification of all chemicals and additives that have potential to enter produced water discharged to Cawelo's Reservoir B,
 - o Volumes of chemicals and additives that are used,
 - o Leases and facilities discharging produced water to Cawelo's Reservoir B, and
 - o Material Safety Data Sheets for all chemicals and additives.

4. Analysis of Process Chemicals and Additives was included for effluent and groundwater monitoring.

This MRP requires Chevron U.S.A., Inc., and Cawelo Water District, to perform specific monitoring at specific frequencies. Failure to comply with the MRP will subject Chevron U.S.A., Inc., and Cawelo Water District, to further enforcement actions including the potential assessment of civil liability.

If you have any questions regarding this matter, please contact Joshua Mahoney of this office at (559) 444 – 2449 or via email at Joshua.Mahoney@waterboards.ca.gov.



- for -

RONALD E. HOLCOMB
Senior Engineering Geologist
CEG No. 2390

Enclosure

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board
Patrick Pulupa, Office of Chief Counsel, State Water Resources Control Board
John Borkovich, Division of Water Quality, State Water Resources Control Board
Abigale M. Auffant, Chevron U.S.A. Inc, 9525 Camino Media, A1084, Bakersfield, CA
93311

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM R5-2012-0058
FOR
CHEVRON U.S.A., INC. AND CAWELO WATER DISTRICT
PRODUCED WATER RECLAMATION PROJECT
KERN RIVER AREA STATION 36
KERN RIVER OIL FIELD
KERN COUNTY

This Revised Monitoring and Reporting Program (MRP) supersedes the Monitoring and Reporting Program signed on 8 June 2012 and is required pursuant to Water Code section 13267.

Chevron U.S.A., Inc., and Cawelo Water District (both hereafter Discharger) shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to any sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised station shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as a pH meter) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the State Water Board's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after a statistically significant number of sampling events, the Discharger may request this MRP be revised by the Executive Officer to reduce monitoring frequency or to minimize the list of constituents. The proposal must include adequate technical justification for reduction in monitoring frequency.

EFFLUENT MONITORING

Effluent samples shall be representative of the volume and nature of the discharges. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of five years.

A complete list of substances which are tested for and reported on by the testing laboratory shall be provided to the Central Valley Water Board. All peaks must be reported. In addition, both the method detection limit (MDL) and the practical quantification limit (PQL) shall be reported. Detection limits shall be equal to or more precise than USEPA methodologies. Analysis with an MDL greater than the

most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory. All quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory.

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 below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge.

DISCHARGE 001

Effluent samples shall be collected downstream from the treatment system and prior to discharge to Reservoir B. Effluent monitoring for Discharge 001 shall include at least the following:

| <u>Constituent/Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Frequency</u> |
|-------------------------------|--------------|--------------------|------------------|
| Flow | mgd | Metered | Continuous |
| Table I – Effluent Monitoring | Varies | Grab | Varies |

DISCHARGE 002

Effluent samples shall be collected immediately downstream of the Reservoir B outfall structure. Effluent Monitoring for Discharge 002 shall include at least the following:

| <u>Constituent/Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Frequency</u> |
|-------------------------------|--------------|--------------------|------------------|
| Flow | mgd | Calculated | Daily |
| Table I – Effluent Monitoring | Varies | Grab | Varies |

WATER USE MONITORING

The Discharger shall monitor the volumes of water blended with produced water. Monitoring shall include at least the following:

| <u>Constituent/Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Frequency</u> |
|--|--------------|--------------------|------------------|
| Volume of Groundwater | Gallons | Calculated | Monthly |
| Volume of Surface Water | Gallons | Calculated | Monthly |
| Volume of Other ¹ Water | Gallons | Calculated | Monthly |
| Blending Ratio ² | - | Calculated | Monthly |
| Area of Cropland Receiving Blended Water | Acres | Calculated | Monthly |

¹ Source needs to be defined in monitoring report.

² The Blending Ratio shall be calculated using the sum of non-produced water and produced water discharged to Cawelo Water District.

CHEMICAL AND ADDITIVE MONITORING

The Discharger shall provide the following for all chemicals and additives used at all leases and facilities that discharge produced water to Cawelo Reservoir B:

| <u>Requirement</u> | <u>Frequency</u> |
|---|------------------|
| A list of all chemicals and additives used. | Quarterly |
| The volume of each chemical and additive used in gallons. | Quarterly |
| A list of the leases and facilities where the chemicals and additives are being used. | Quarterly |
| Material safety data sheets for each chemical and/or additive. | Annually |

GROUNDWATER MONITORING

The Discharger shall monitor six groundwater monitoring wells, generally downgradient of the Famoso Basins, as shown on Attachment D. After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The following wells, which are shown on Attachment D, shall be used in the required assessment.

| <u>Well I.D. No</u> | <u>Township and Range, MDB&M</u> | <u>Approximate Distance from the Famoso Basins, miles</u> |
|---------------------|--------------------------------------|---|
| 17D | T27S R26E | 0.25 miles south |
| 7F | T27S R26E | 0.5 miles west |
| 6P1 | T27S R26E | 0.5 miles west northwest |
| 18E | T27S R26E | 1 mile west southwest |
| 18N2 | T27S R26E | 1.3 miles southwest |
| 12R | T27S R25E | 1.1 miles west |

The Discharger shall monitor the above wells for the following:

| <u>Constituent/Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Frequency</u> |
|-----------------------------------|-------------------|--------------------|------------------|
| Depth to groundwater | Feet ¹ | Measured | Quarterly |
| Groundwater elevation | Feet ¹ | Calculated | Quarterly |
| Table II – Groundwater Monitoring | Varies | Grab | Varies |

¹ Recorded to one hundredth of a foot

For the monitoring of groundwater salinity changes within the Cawelo Water District (Waste Discharge Requirements Order R5-2012-0058, Finding 51.d), monitoring of District wells shall be conducted

annually. The District annual average EC will be tabulated and reported in a yearly report summarizing the data and the methodology used to determine the reported average. The report shall be submitted to the Central Valley Water Board by 1 February of each year.

Within 30 days of notification that permission to sample a well(s) is revoked, the Discharger shall submit for review and approval by Central Valley Water Board staff a report that either: (1) demonstrates that a reduction in the number of monitoring well(s) will not impair the ability to clearly and accurately assess potential groundwater impacts from the Famoso Basins, or (2) proposes the installation of a new monitoring well(s) to replace the well(s) that is no longer able to be sampled.

REPORTING REQUIREMENTS

All monitoring results shall be reported in Quarterly Monitoring Reports, which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

| | |
|-----------------------------------|------------|
| First Quarter Monitoring Report: | 1 May |
| Second Quarter Monitoring Report: | 1 August |
| Third Quarter Monitoring Report: | 1 November |
| Fourth Quarter Monitoring Report: | 1 February |

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory. Reports shall be submitted whether or not there is a discharge.

The following information is to be included on all monitoring reports, as well as report transmittal letters:

Cawelo Water District and Chevron U.S.A. Inc.
Produced Water Reclamation Project
Kern River Area Station 36
Waste Discharge Requirements R5-2012-0058
GeoTracker Site Global ID: T10000007317

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible for all historical and current data. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the MDL and the Reporting limit (RL) or PQL. If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

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 quarterly monitoring reports. Such increased frequency shall be indicated on the quarterly monitoring reports.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. All monitoring reports 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.

A. All Quarterly Monitoring Reports shall include the following:

Effluent reporting:

1. Tabular summary of current and historical results for both effluent discharges (Discharges 001 and 002) as specified on page 1 and 2.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average for EC, Boron, Chloride, and Sodium of the discharge using the current value for that month averaged with the historical values for the previous 11 months.

Water use reporting:

1. Tabular summary of current and historical volumes of water as specified on page 2 and 3.
2. For each month of the quarter, calculation of the average blending ratio using volumes from the current calendar year.

Chemical and additive reporting:

1. Identify all chemicals and additives that may enter produced water discharged to Cawelo's Reservoir B.
2. Tabular summary of the volume of chemicals and additives each month and total volume for that calendar year.
3. List all leases and facilities that discharge produced water to Cawelo's Reservoir B.

Groundwater reporting:

1. The results of groundwater monitoring as specified on page 3 and 4.
2. For each monitoring well, a table showing constituent concentrations for the last five quarters, up through the current quarter.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the locations of monitoring wells and wastewater storage and discharge areas.

B. Fourth Quarter Monitoring Reports, in addition to the above, by 1 February of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

Facility information:

1. The names and general responsibilities of all persons employed to operate the produced water treatment systems.
2. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
3. A statement certifying when the flow meters and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.4).
4. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
5. A summary of all spills/releases, if any, that occurred during the year, tasks undertaken in response to the spills, and the results of the tasks undertaken.
 - At a minimum, spills/releases that occurred at the following locations shall be reported: (1) Chevron's Kern River Area Station 36, (2) Cawelo's Reservoir B, and (3) all produced water delivery networks connecting Chevron's Kern River Area Station 36 and Cawelo's Reservoir B.
6. A flow chart (i.e. diagram that clearly illustrates all processes that produced water undergoes from extraction to discharge to Cawelo's Reservoir B) and map of the following:
 - Chevron's Kern River Area Station 36,
 - Cawelo's distribution network with all reservoirs, pumps, and lateral transfer pipes, and
 - Cawelo's Famoso Basins.

Effluent reporting:

1. Tabular summary of the current and historical total annual flow for both effluent discharges (Discharges 001 and 002) as specified on page 1 and 2.

Water use reporting:

1. Tabular summary of the current and historical average blending ratio of a calendar year.

Chemical and additive reporting:

1. Material Safety Data Sheets for all chemicals and additives that are identified in quarterly monitoring reports for the respective calendar year.

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

Ordered by:

Clay L. Rodgers
for PAMELA C. CREEDON, Executive Officer

4/28/2016

(Date)

Table I – Effluent Monitoring

| <u>Parameters</u> | <u>Units</u> | <u>Monitoring Frequency</u> | <u>US EPA or other Method⁹</u> | <u>Reporting Frequency</u> |
|--|-----------------------|------------------------------------|--|-----------------------------------|
| <u>Field Parameters</u> | | | | |
| Temperature | °F ¹ | Monthly | Meter | Quarterly |
| Electrical Conductivity | µmhos/cm ² | Monthly | Meter | Quarterly |
| pH | pH units | Monthly | Meter | Quarterly |
| <u>Monitoring Parameters</u> | | | | |
| Total Dissolved Solids (TDS) | mg/L ³ | Monthly | 160.1 | Quarterly |
| Total Suspended Solids (TSS) | mg/L | Monthly | 160.2 | Quarterly |
| Electrical Conductivity | µmhos/cm | Monthly | 2510B | Quarterly |
| Boron, dissolved | mg/L | Monthly | 6010B | Quarterly |
| <u>Standard Minerals</u> | | | | |
| Alkalinity as CaCO ₃ | mg/L | Monthly | 310.1 | Quarterly |
| Bicarbonate Alkalinity as CaCO ₃ | mg/L | Monthly | 310.1 | Quarterly |
| Carbonate Alkalinity as CaCO ₃ | mg/L | Monthly | 310.1 | Quarterly |
| Hydroxide Alkalinity as CaCO ₃ | mg/L | Monthly | 310.1 | Quarterly |
| Sulfate, dissolved | mg/L | Monthly | 300.0 | Quarterly |
| Nitrate-N, dissolved | mg/L | Monthly | 300.0 | Quarterly |
| Calcium, dissolved | mg/L | Monthly | 6010B | Quarterly |
| Magnesium, dissolved | mg/L | Monthly | 6010B | Quarterly |
| Sodium, dissolved | mg/L | Monthly | 6010B | Quarterly |
| Potassium | mg/L | Monthly | 6010B | Quarterly |
| Chloride | mg/L | Monthly | 300.0 | Quarterly |
| <u>PAHs⁴</u> | µg/L ⁵ | Quarterly | 8270 | Quarterly |
| <u>Total Petroleum Hydrocarbons (TPH)</u> | µg/L | Quarterly | 418.1 | Quarterly |
| <u>Volatile Organic Compounds</u> | | | | |
| Full Scan | µg/L | Bi-Monthly | 8260B | Quarterly |
| <u>Oil and Grease</u> | mg/L | Monthly | 1664A | Quarterly |
| <u>Stable Isotopes</u> | | | | |
| Oxygen (¹⁸ O) | pCi/L ⁶ | Quarterly | 900.0 | Quarterly |
| Deuterium (Hydrogen 2, ² H, or D) | pCi/L | Quarterly | 900.0 | Quarterly |
| <u>Radionuclides</u> | | | | |
| Radium-226 | pCi/L | Quarterly | SM ⁷ 7500-Ra | Quarterly |
| Radium-228 | pCi/L | Quarterly | SM 7500-Ra | Quarterly |
| Gross Alpha particle (excluding radon and uranium) | pCi/L | Quarterly | SM 7110 | Quarterly |
| Uranium | pCi/L | Quarterly | 200.8 | Quarterly |

Table I – Effluent Monitoring (continued)

| <u>Parameters</u> | <u>Units</u> | <u>Monitoring Frequency</u> | <u>US EPA or other Method</u> | <u>Reporting Frequency</u> |
|---|--------------|-----------------------------|-------------------------------|----------------------------|
| <u>Constituents of Concern</u> | | | | |
| Lithium | mg/L | Quarterly | 200.7 | Quarterly |
| Strontium | mg/L | Quarterly | 200.7 | Quarterly |
| Iron | mg/L | Quarterly | 200.8 | Quarterly |
| Manganese | mg/L | Quarterly | 200.8 | Quarterly |
| Antimony | mg/L | Quarterly | 200.8 | Quarterly |
| Arsenic | mg/L | Quarterly | 200.8 | Quarterly |
| Barium | mg/L | Quarterly | 200.8 | Quarterly |
| Beryllium | mg/L | Quarterly | 200.8 | Quarterly |
| Cadmium | mg/L | Quarterly | 200.8 | Quarterly |
| Chromium (total) | mg/L | Quarterly | 200.8 | Quarterly |
| Chromium (hexavalent) | mg/L | Quarterly | 7196A | Quarterly |
| Cobalt | mg/L | Quarterly | 200.8 | Quarterly |
| Copper | mg/L | Quarterly | 200.8 | Quarterly |
| Lead | mg/L | Quarterly | 200.8 | Quarterly |
| Mercury | mg/L | Quarterly | 7470A | Quarterly |
| Molybdenum | mg/L | Quarterly | 200.8 | Quarterly |
| Nickel | mg/L | Quarterly | 200.8 | Quarterly |
| Selenium | mg/L | Quarterly | 200.8 | Quarterly |
| Silver | mg/L | Quarterly | 200.8 | Quarterly |
| Thallium | mg/L | Quarterly | 200.8 | Quarterly |
| Vanadium | mg/L | Quarterly | 200.8 | Quarterly |
| Zinc | mg/L | Quarterly | 200.8 | Quarterly |
| <u>Oil Production and Process Chemicals and Additives</u> ⁸ | µg/L | Quarterly | As Appropriate ⁹ | Quarterly |

¹ Degrees Fahrenheit

² Micromhos per centimeter

³ Milligrams per liter

⁴ Polycyclic aromatic hydrocarbons

⁵ Micrograms per liter

⁶ Picocuries per liter

⁷ Standard Methods

⁸ The Discharger shall provide analytical results for all chemicals and additives used in the production and or processing of all oil and wastewater discharged into ponds or on to the ground surface as described under the Chemical and Additive Monitoring section of the MRP for which there are ELAP approved analyses. For those constituents for which there are not ELAP approved analytical methods, the Discharger shall submit a technical report describing how it intends to address this issue.

⁹ Appropriate analytical methods may be proposed by the Discharger but are subject to the approval of the Executive Officer

Table II – Groundwater Monitoring

| <u>Parameters</u> | <u>Units</u> | <u>Monitoring Frequency</u> | <u>US EPA or other Method⁹</u> | <u>Reporting Frequency</u> |
|--|-----------------------|-----------------------------|---|----------------------------|
| <u>Field Parameters</u> | | | | |
| Temperature | °F ¹ | Quarterly | Meter | Quarterly |
| Electrical Conductivity | µmhos/cm ² | Quarterly | Meter | Quarterly |
| pH | pH units | Quarterly | Meter | Quarterly |
| <u>Monitoring Parameters</u> | | | | |
| Total Dissolved Solids (TDS) | mg/L ³ | Quarterly | 160.1 | Quarterly |
| Electrical Conductivity | µmhos/cm | Quarterly | 2510B | Quarterly |
| Boron, dissolved | mg/L | Quarterly | 6010B | Quarterly |
| <u>Standard Minerals</u> | | | | |
| Alkalinity as CaCO ₃ | mg/L | Quarterly | 310.1 | Quarterly |
| Bicarbonate Alkalinity as CaCO ₃ | mg/L | Quarterly | 310.1 | Quarterly |
| Carbonate Alkalinity as CaCO ₃ | mg/L | Quarterly | 310.1 | Quarterly |
| Hydroxide Alkalinity as CaCO ₃ | mg/L | Quarterly | 310.1 | Quarterly |
| Sulfate, dissolved | mg/L | Quarterly | 300.0 | Quarterly |
| Nitrate N, dissolved | mg/L | Quarterly | 300.0 | Quarterly |
| Calcium, dissolved | mg/L | Quarterly | 6010B | Quarterly |
| Magnesium, dissolved | mg/L | Quarterly | 6010B | Quarterly |
| Sodium, dissolved | mg/L | Quarterly | 6010B | Quarterly |
| Potassium | mg/L | Quarterly | 6010B | Quarterly |
| Chloride | mg/L | Quarterly | 300.0 | Quarterly |
| <u>PAHs⁴</u> | µg/L ⁵ | Quarterly | 8270 | Quarterly |
| <u>Total Petroleum Hydrocarbons (TPH)</u> | µg/L | Quarterly | 418.1 | Quarterly |
| <u>Volatile Organic Compounds</u> | | | | |
| Full Scan | µg/L | Quarterly | 8260B | Quarterly |
| <u>Stable Isotopes</u> | | | | |
| Oxygen (¹⁸ O) | pCi/L ⁶ | Quarterly | 900.0 | Quarterly |
| Deuterium (Hydrogen 2, ² H, or D) | pCi/L | Quarterly | 900.0 | Quarterly |
| <u>Radionuclides</u> | | | | |
| Radium 226 | pCi/L | Quarterly | SM ⁷ 7500 Ra | Quarterly |
| Radium 228 | pCi/L | Quarterly | SM 7500 Ra | Quarterly |
| Gross Alpha particle (excluding radon and uranium) | pCi/L | Quarterly | SM 7110 | Quarterly |
| Uranium | pCi/L | Quarterly | 200.8 | Quarterly |

Table II – Groundwater Monitoring (continued)

| <u>Parameters</u> | <u>Units</u> | <u>Monitoring Frequency</u> | <u>US EPA or other Method</u> | <u>Reporting Frequency</u> |
|---|--------------|-----------------------------|-------------------------------|----------------------------|
| <u>Constituents of Concern</u> | | | | |
| Lithium | mg/L | Quarterly | 200.7 | Quarterly |
| Strontium | mg/L | Quarterly | 200.7 | Quarterly |
| Iron | mg/L | Quarterly | 200.8 | Quarterly |
| Manganese | mg/L | Quarterly | 200.8 | Quarterly |
| Antimony | mg/L | Quarterly | 200.8 | Quarterly |
| Arsenic | mg/L | Quarterly | 200.8 | Quarterly |
| Barium | mg/L | Quarterly | 200.8 | Quarterly |
| Beryllium | mg/L | Quarterly | 200.8 | Quarterly |
| Cadmium | mg/L | Quarterly | 200.8 | Quarterly |
| Chromium (total) | mg/L | Quarterly | 200.8 | Quarterly |
| Chromium (hexavalent) | mg/L | Quarterly | 7196A | Quarterly |
| Cobalt | mg/L | Quarterly | 200.8 | Quarterly |
| Copper | mg/L | Quarterly | 200.8 | Quarterly |
| Lead | mg/L | Quarterly | 200.8 | Quarterly |
| Mercury | mg/L | Quarterly | 7470A | Quarterly |
| Molybdenum | mg/L | Quarterly | 200.8 | Quarterly |
| Nickel | mg/L | Quarterly | 200.8 | Quarterly |
| Selenium | mg/L | Quarterly | 200.8 | Quarterly |
| Silver | mg/L | Quarterly | 200.8 | Quarterly |
| Thallium | mg/L | Quarterly | 200.8 | Quarterly |
| Vanadium | mg/L | Quarterly | 200.8 | Quarterly |
| Zinc | mg/L | Quarterly | 200.8 | Quarterly |
| <u>Oil Production and Process Chemicals and Additives</u> ⁸ | µg/L | Quarterly | As Appropriate ⁹ | Quarterly |

¹ Degrees Fahrenheit

² Micromhos per centimeter

³ Milligrams per liter

⁴ Polycyclic aromatic hydrocarbons

⁵ Micrograms per liter

⁶ Picocuries per liter

⁷ Standard Methods

⁸ The Discharger shall provide analytical results for all chemicals and additives used in the production and or processing of all oil and wastewater discharged into ponds or on to the ground surface as described under the Chemical and Additive Monitoring section of the MRP for which there are ELAP approved analyses. For those constituents for which there are not ELAP approved analytical methods, the Discharger shall submit a technical report describing how it intends to address this issue.

⁹ Appropriate analytical methods may be proposed by the Discharger but are subject to the approval of the Assistant Executive Officer