Central Valley Regional Water Quality Control Board

21 February 2017

Mr. John Marrs
Former Chrome Craft Facility
4215 Puente Way
Sacramento, CA 95864-3014

NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2015-0012-024, FORMER CHROME CRAFT FACILITY, 1819 23RD STREET, SACRAMENTO, SACRAMENTO COUNTY

Former Chrome Craft Facility submitted the 15 November 2016 Notice of Intent (NOI) requesting coverage for insitu remediation using whey to reduce hexavalent chromium in shallow groundwater. Chrome Craft successfully conducted remediation of hexavalent chromium in the source area by soil excavation followed by an injection of Metals Reducing Compound (MRC) in 2004 under Waste Discharge Requirements No. R5-2004-0016. Subsequent injections of whey to shallow groundwater removed hexavalent chromium in 2006, 2007, 2008, and 2009 under Sacramento County Environmental Management Department oversight. Former Chrome Craft submitted the 14 November 2016 *Remedial Action Plan*, the 19 December 2016 *Injection Logs*, and 20 December 2016 *Contingency Plan*. In the Remedial Action Plan, former Chrome Craft proposes to continue remediation of the leading edge of the plume using whey. In a 23 December letter, Central Valley Water Board staff concurred with the Remedial Action Plan. Based on information in former Chrome Craft's submittal, it is our determination that this project meets the required conditions to be covered under the General Order for In-Situ Remediation, Order No. R5-2015-0012. All of the requirements contained in the General Order are applicable to your project. You are assigned Order No. R5-2015-0012-024.

Project Location:

The project is located in the City of Sacramento, Sacramento County, Latitude 38°33' 56.26"N, Longitude 121°31'16.03" W, Assessor's Parcel No. 010-003-036-17. In-situ treatment will be conducted at the northwest corner of 24th Street and S Street.

Project Description:

Past operations at the former Chrome Craft facility caused groundwater and soil pollution. Soil pollution was remediated with source area soil excavation and MRC in 2004, and much of the groundwater pollution has been remediated with whey. Additional whey is being injected to shallow groundwater at the leading edge of the groundwater pollution. The primary constituent of concern is hexavalent chromium. Previous insitu remediation events using whey have demonstrated that it facilitates reduction of hexavalent chromium to less soluble trivalent chromium.

In this insitu treatment, the Discharger proposes to continue to inject whey as the source of organic carbon and molecular hydrogen for anaerobic reduction of hexavalent chromium.

The Discharger will also be conducting sampling and reporting the results as described in the attached Monitoring and Reporting Program.

On 12 January 2017, the Discharger and Central Valley Water Board staff circulated a fact sheet describing the insitu remediation project and provided interested parties with 30 days to submit comments or questions. No comments had been received by the close of the public comment period which was on 17 February 2017.

General Information:

1. The project will be operated in accordance with the requirements contained in the General Order and in accordance with the information submitted in the 14 November 2016 Remedial Action Plan and the 15 November 2016 Notice of Intent.

2. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this Notice of Applicability is officially rescinded.

3. Injection of materials other than whey into the subsurface is prohibited.

4. Failure to abide by the conditions of the General Order could result in an enforcement action as authorized by provisions of the California Water Code.

5. The project will implement the 20 December 2016 Contingency Plan within 30 days of it being triggered.

6. The Discharger shall comply with the attached Monitoring and Reporting Program, Order No. R5-2015-0012-024, and any revisions thereto as ordered by the Executive Officer.

If you have any questions regarding this matter, you may contact Amy Terrell by telephone at (916) 464-4680 or by email at amy.terrell@waterboards.ca.gov.

Andrew Altree For
PAMELA C. CREEDON
Executive Officer

Attachments: Monitoring and Reporting Program R5-2015-0012-024
General Order No. R5-2015-0012
Standard Provisions

cc: Ms. Della Kramer, Regional Water Quality Control Board, Sacramento (w MRP only)
Mr. James Gribi, Gribi Associates, Benicia (w all attachments)
Mr. Chris Pace, Sacramento County Environmental Health Dept. (w MRP only)

ATTACHMENT C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2015-0012-024

FOR
IN-SITU GROUNDWATER REMEDIATION
AND DISCHARGE OF TREATED GROUNDWATER TO LAND

FORMER CHROME CRAFT FACILITY
SACRAMENTO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a groundwater remediation system for former Chrome Craft Facility at 1819 23rd Street in Sacramento. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. As appropriate, California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

GROUNDWATER MONITORING

As shown on Figure 1, there are nine monitor wells, and six injection wells associated with this site. While the groundwater monitoring program for the remediation includes three monitoring wells and two injection wells (CC-7, CC-8, CC-9, IW-5, and IW-6), the remaining wells shall be sampled for water surface elevations as shown in Table 2. These wells and any treatment system wells installed subsequent to the issuance of this MRP shall follow the schedule below. Sample collection and analysis shall follow standard EPA protocol.

The monitor wells and injection wells shall be sampled according to the schedule in Tables 1 and 2 and the samples shall be analyzed by the methods in Table 3, as follows.

Table 1: Sampling Frequency and Constituent Suites[1]

	CC-7 (treatment background well)	**IW-5** (treatment zone well)	**IW-6** (treatment zone well)	**CC-8** (treatment zone well)	**CC-9** (compliance well)
Total Chromium	A	S	S	S	S
Hexavalent Chromium	A	S	S	S	A
Dissolved Organic Carbon	A	Q	Q	Q	Q
Methane	A	S	S	S	S
Alkalinity	A	A	A	A	A

Footnotes on following page.

Footnotes to Table 1

[1] Well locations are shown on Figure 1, water surface elevation schedule is listed in Table 2, and analytical methods are listed in Table 3.
Q - Quarterly monitoring for first four quarters, then semi-annually; S - Semi annually in the 1st and 3rd quarters (Jan-March, July-Sept); A - Annually in the 3rd quarter (July-Sept).

Table 2: Water Surface Elevation Schedule[2]

	CC-3	CC-4	CC-9	CC-1A, CC-2, CC-5, CC-6, IW-1, IW-2, IW-3, IW-4	IW-5, IW-6, CC-7, CC-8, CC-9
Water Surface Elevation	Q	Q	Q	A	Q

[2] Q - Quarterly monitoring for first four quarters, then semi-annually; S - Semi annually in the 1st and 3rd quarters (Jan-March, July-Sept); A - Annually in the 3rd quarter (July-Sept).

Table 3: Analytical Methods

Constituent	Method[3]	Maximum Practical Quantitation Limit (µg/L)[4]
Total Chromium	EPA 200	0.5
Hexavalent Chromium	EPA 218	0.2
Methane	Modified EPA 602	0.1
Dissolved Organic Carbon	EPA 415	300
Alkalinity	SM 2320	1,000 as $CaCO_3$

[3] Or an equivalent EPA Method that achieves the maximum Practical Quantitation Limit.
[4] All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as an estimated value.

FIELD SAMPLING

In addition to the above sampling and laboratory analyses, field sampling and analysis shall be conducted each time a monitor well or extraction well is sampled. The sampling and analysis of field parameters shall be as specified in Table 4.

Table 4: Field Sampling Requirements

Parameters	Units	Practical Quantitation Limit	Analytical Method
Groundwater Elevation	Feet, Mean Sea Level	0.01 feet	Measurement
Oxidation-Reduction Potential	Millivolts	10 millivolts	Field Meter
Electrical Conductivity	uhmos/cm	50 µS/cm[2]	Field Meter
Dissolved Oxygen	mg/L	0.2 mg/L	Field Meter
pH	pH Units (to 0.1 units)	0.1 units	Field Meter
Temperature	°F/°C	0.1 °F/°C	Field Meter

All wells that are purged shall be purged until pH, temperature, conductivity and dissolved oxygen are within 10% of the previous value.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in item (b) of the "Reporting" section of this MRP.

IN-SITU DISCHARGE MONITORING

The Discharger shall monitor daily the discharge of water and amendments that are injected into the groundwater according to the requirements specified in Table 5. Each amendment addition shall be recorded individually, along with information regarding the time period over which the amendment was injected into the aquifer.

Table 5: Discharge Monitoring Requirements

Parameters	Units	Type of Sample
Injected Volume	gallons per day	Measured
Amendment(s) Added	pounds per day	Measured
Biocide Added	pounds per day	Measured

AMENDMENT ANALYSIS

An analysis of the amendment was provided on 21 October 2016.

ESTABLISHMENT OF BACKGROUND CONCENTRATION VALUES

The Discharger provided background values for geochemical parameters in its 28 April 2016 First Quarter 2016 Groundwater Monitoring Report.

REPORTING

When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Central Valley Water Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional Civil Engineer or Geologist or their subordinate and signed by the registered professional.

The Discharger shall submit electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. The reports shall be submitted electronically over the internet to the Geotracker database system by the 1st day of the second month following the end of each respective calendar quarter by **1 February, 1 May, 1 August, and 1 November** until such time as the Executive Officer determines that the reports are no longer necessary.

Quarterly Reports occuring between Semi-Annual reports are due **by 1 February and 1 August**. These quarterly reports may consist of a tabulated data submittal, laboratory analytical reports, and an email cover which may be submitted electronically to Central Valley Water Board staff. This is in addition to the electronic data submittals to the Geotracker database. The quarterly data shall be formally presented in the subsequent Semi-Annual Monitoring Report.

Semi-Annual Reports are due **by 1 May and 1 November** and shall include the following minimum information:

(a) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated;

(b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;

(c) groundwater contour maps for all groundwater zones, if applicable;

(d) pollutant concentration maps for all groundwater zones, if applicable;

(e) a table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom;

(f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;

(g) cumulative data tables containing the water quality analytical results and depth to groundwater;

(h) a copy of the laboratory analytical data report;

(i) the status of any ongoing remediation, an estimate of the cumulative mass of pollutant removed from the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system; and

(j) if applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.

An Annual Report shall be submitted to the Central Valley Water Board by **1 November** of each year. This report shall contain an evaluation of the effectiveness and progress of the investigation and remediation. The Annual Report may be substituted for the second semi-annual monitoring report as long as it contains all of the information required for that report plus that required for the Annual Report. The Annual Report shall contain the following minimum information:

(a) both tabular and graphical summaries of all data obtained during the year;

(b) groundwater contour maps and pollutant concentration maps containing all data obtained during the previous year;

(c) a discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;

(d) an analysis of whether the pollutant plume is being effectively treated;

(e) a description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness;

(f) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program; and

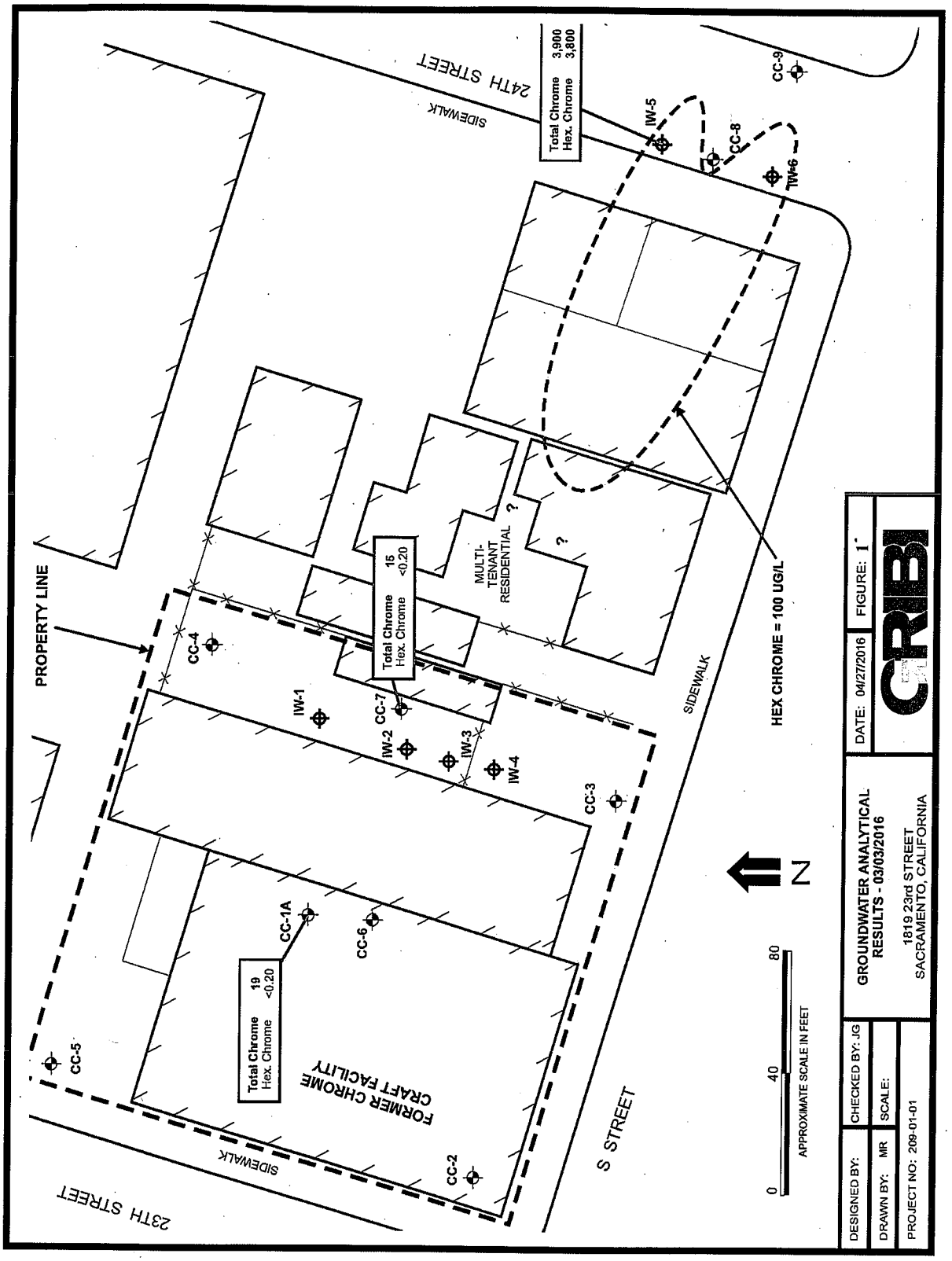
(g) if desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.

A letter transmitting the monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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

Ordered by: Andrew Altwood
For PAMELA C. CREEDON, Executive Officer
2/21/17
(Date)

09/22/14:AMM, AST, MLP


24TH STREET
SIDEWALK
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Hex. Chrome 3,800
CC-9
IW-5
CC-8
IW-6
PROPERTY LINE
CC-4
Total Chrome 15
Hex. Chrome <0.20
MULTI-TENANT RESIDENTIAL
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IW-1
CC-7
IW-2
IW-3
IW-4
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SIDEWALK
HEX CHROME = 100 UG/L
CC-1A
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FORMER CHROME CRAFT FACILITY
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23TH STREET
SIDEWALK
S STREET
N
0
40
80
APPROXIMATE SCALE IN FEET
DESIGNED BY:
DRAWN BY: MR
PROJECT NO: 209-01-01
CHECKED BY: JG
SCALE:
GROUNDWATER ANALYTICAL RESULTS - 03/03/2016
1819 23rd STREET
SACRAMENTO, CALIFORNIA
DATE: 04/27/2016
FIGURE: 1
CRBI