

**State of California**  
**California Regional Water Quality Control Board**  
**Santa Ana Region**

Monitoring and Reporting Program (M&RP)  
(As authorized under Order No. R8-2016-0053)  
In-Situ Groundwater Remediation

for

Former Bell Industries Facility (Santa Ana)  
1831 Ritchey Street, Santa Ana, Orange County  
(Discharge Authorized on July 22, 2016)

**A. MONITORING REQUIREMENTS**

1. All sampling, sample preservation, transport and analyses must be conducted in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association) and/or with U.S. Environmental Protection Agency's guidelines for sampling, collection and preservation, unless other test procedures have been specified in this Order or by the Executive Officer.
2. Unless otherwise permitted by the Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board, Division of Drinking Water. The Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and, therefore, not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association) and/or with U.S. Environmental Protection Agency's guidelines for sampling, collection and preservation.
3. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board, Division of Drinking Water - Environmental Laboratory Accreditation Program (ELAP) or other State agency authorized to undertake such certification, or as approved by the Executive Officer.
4. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.
5. The Discharger shall report all instances of noncompliance, submit a statement of actions undertaken or proposed that will bring the discharge into full compliance with requirements, and submit a timetable for corrective action.
6. The Discharger shall notify the Executive Officer within 24 hours by telephone of any adverse condition resulting from the discharge; such notification shall be affirmed in writing within five working days.
7. If the Discharger monitors any contaminants more frequently than required by this order, using applicable test procedures, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharger's monitoring report. The increased frequency of monitoring shall also be reported.
8. All monitoring instruments and devices which are used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

9. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
10. Daily samples shall be collected on each day of the week.
11. Monthly samples shall be collected on any representative day of each month.
12. The Discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Regional Water Board at any time. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling, and/or measurements;
  - c. The methods used for groundwater purging/sampling;
  - d. The date(s) analyses were performed;
  - e. The individual(s) who performed the analyses;
  - f. The analytical techniques or method used; and
  - g. All sampling and analytical results, including -
    - i. units of measurement used;
    - ii. minimum reporting limit for the analysis (minimum level);
    - iii. results less than the reporting limit but above the method detection limit (MDL);
    - iv. data qualifiers and a description of the qualifiers;
    - v. quality control test results (and a written copy of the laboratory quality assurance plan);
    - vi. dilution factors, if used; and
    - vii. sample matrix type.
13. The Discharger shall maintain all sampling, measurement and analytical results, including the date, exact place, and time of sampling or measurement; individual(s) who did the sampling or measurement; the method used for sampling or measurement; the date(s) and location(s) where analyses were conducted; analysts' name(s); and analytical techniques or methods used.
14. All reports and/or information submitted to the Executive Officer shall be signed by a responsible officer or duly authorized representative of the discharger and shall be submitted under penalty of perjury.
15. The Discharger shall file a report of any material change or proposed change in the character, location or volume of the discharge that is not mentioned in the RAP.

**B. MONITORING PLAN**

A sampling station shall be established for each point of discharge and shall be located where representative samples of the discharge can be obtained. The following shall constitute the monitoring program:

**Table 1: Site Well Information**

<i>Well Type</i>	<i>Well ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Elevation<sup>1</sup> (feet amsl<sup>2</sup>)</i>
Injection points <sup>3</sup>	P-1 through P-32	33.7215214	-117.8409165	79.16
Monitoring	OW-1A	33.7215214	-117.8409165	79.16
Monitoring	OW-2A	33.7214607	-117.8409213	78.64
Monitoring	OW-3A	33.7215007	-117.8407698	79.17
Monitoring	OW-1B	33.7215214	-117.8409165	79.08
Monitoring	OW-2B	33.7214708	-117.8409353	77.97
Monitoring	MW-20B-P	33.7214678	-117.8408415	78.74
Monitoring	MW-26B	33.7214738	-117.8411836	77.79
Monitoring	PDW-1	33.7214891	-117.8408985	78.93

1. Elevation is measured from the top of the well casing.
2. amsl: above mean sea level
3. Longitude and latitude coordinates and surface elevations for amendment injection points have been estimated and are approximate.

**Table 2: Monitoring Parameters and Frequency<sup>1</sup>**

Sample Parameter	Parameter Type	Units	Method of Analysis	Sample Location	Sampling Frequency <sup>2</sup>					
					Baseline <sup>3</sup>	Week 1	Month 1	Month 2	Month 3 (Quarter 1)	Month 6 (Quarter 2)
Volatile Organic Compounds <sup>4</sup>	Contaminant of Concern	µg/L	EPA 8260B	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
1,4-dioxane	Contaminant of Concern	µg/L	EPA 8270C	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
Total Dissolved Solids	General Groundwater Parameters	mg/L	SM 2540C	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Alkalinity	General Groundwater Parameters	mg/L	SM 2320B	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Anions - Chlorides, nitrates, sulfates, bromates, phosphorus	General Groundwater Parameters	mg/L	EPA 300.0	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Cations - Calcium, magnesium, manganese, potassium & sodium	General Groundwater Parameters	mg/L	EPA 200.7/6010B	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Metals (arsenic, barium, cadmium, chromium, copper, iron, lead & selenium)	Dissolved Metals	mg/L	EPA 200.7/6010B	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Hexavalent Chromium	Potential contaminant	µg/L	EPA 7199	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X	X	X	X

Total Organic Carbon	General Groundwater Parameters	mg/L	EPA 415.1	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Chemical Oxygen Demand	General Groundwater Parameters	mg/L	EPA 410.1	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Biochemical Oxygen Demand	General Groundwater Parameters	mg/L	EPA 405.1	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Methane, ethane, ethene	Dissolved Gasses	µg/L	AM20GAX	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Dissolved Carbon Dioxide/ Hydrogen Sulfide	General Groundwater Parameters	µg/L	SM 4500	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X		X		X	X
Dissolved Oxygen	Electron acceptor	mg/L	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
Oxidation Reduction Potential	General Groundwater Parameters	mV	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
Specific Conductivity	General Groundwater Parameters	µS/cm	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
Turbidity	General Groundwater Parameters	NTU	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
Temperature	General Groundwater Parameters	°C	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X
pH	General Groundwater Parameters	Std. unit	field meter	OW-1A/B, OW-2A/B, OW-3A, MW-20B-P, MW-26B & PDW-1	X	X	X	X	X	X

- Parameters and frequencies listed are required to evaluate changes in groundwater chemistry resulting from in-situ remediation activities and/or determine permit compliance and may not be inclusive of all requirements issued by the lead oversight agency.
- Depending on site conditions, specific monitoring parameters may be increased, reduced or eliminated by the Executive Officer, if appropriate. Based on site conditions, changes to the monitoring program may be proposed for future applications and/or full scale implementation.
- Baseline monitoring/sampling data for identified parameters was already previously collected from a representative well-set to document pre-injection site conditions.
- Quantification of volatile organic compounds must be performed by EPA Method 8260B and report the entire suite of constituents (full scan).

### C. REPORTING REQUIREMENTS

1. All analytical data shall be reported with method detection limit<sup>1</sup> (MDLs) and with identification of either reporting level or limits of quantitation (LOQs).
2. Laboratory data for effluent samples must quantify each constituent down to the approved reporting levels for specific constituents. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Water Board will reject the quantified laboratory data if quality control data are unavailable or unacceptable.
3. Discharge monitoring data shall be arranged in a manner that clearly demonstrates compliance and/or noncompliance with this Order. Monitoring results shall be reported in a tabulated format which identifies all applicable chemical constituents required to be analyzed under the monitoring program and presents the associated sample collection dates and analytical detections for each compound in relation to waste discharge limitations and requirements established by this Order.
4. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, and of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Executive Officer by letter when compliance with the time schedule has been achieved.
5. Conclusions and recommendations regarding continuation of the existing process or any proposed modifications thereto shall be clearly presented for agency consideration, along with appropriate supporting justification or rationale.
6. All reports, plans and documents required under this Order shall be prepared under the direction of appropriately qualified professionals. The lead professional performing engineering and geologic evaluations and judgments shall sign and affix their professional geologist or civil engineering license stamp to all technical reports, plans or documents submitted to the Regional Water Board.
7. Monitoring reports are required to be submitted electronically via the Internet into the State Water Resources Control Board's GeoTracker database. To comply with state regulations, the update to the GeoTracker database must include the following minimum information:
  - a. The elevation of groundwater in any permanent monitoring well relative to the surveyed elevation.
  - b. A site map or maps showing the location of all sampling points referred to in the report.
  - c. The depth to the screened interval and the length of screened interval of any permanent monitoring well.
  - d. Boring logs, in PDF format.
  - e. Laboratory analytical data from any soil testing and/or groundwater monitoring shall be reported in Electronic Deliverable Format (EDF) in accordance with CWC Section 13195 et. seq. requirements, if applicable.
  - f. A complete copy of the report, in PDF format, which includes the signed transmittal letter and professional certification.

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<sup>1</sup> The standardized test procedure to be used to determine the method detection level (MDL) is given at Appendix B, 'Definition and Procedure for the Determination of the Method Detection Limit' of 40 CFR 136.

