CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

24 October 2012

FILE COPY

Mr. Dave Isola
Isola & Associates
405 West Pine Street
Lodi, CA 95240-2023

NOTICE OF APPLICABILITY OF GENERAL ORDER R5-2008-0149-041, FORMER RIPON FARM SERVICE, 928 FRONTAGE ROAD, SAN JOAQUIN COUNTY

Ripon Farm Service submitted a Treatability Study Work Plan (Work Plan) dated 10 May 2012, and the 16 August 2012 Revised Figure 10 and Contingency Plan Commitment to California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff. This Work Plan includes a proposal to biologically reduce nitrate in soil and groundwater through the injection of amendments into groundwater. The Work Plan also includes a Notice of Intent, which requests enrollment in General Order No. R5-2008-0149, General Waste Discharge Requirements for In-situ Groundwater Remediation at Sites with Volatile Organic Compounds, Nitrogen Compounds, Perchlorate, Pesticides, Semi-Volatile Compounds and/or Petroleum Compounds (General Order). Based on information in your submittal, it is our staff's determination that this project meets the required conditions to be approved under General Order No. R5-2008-0149. All of the requirements contained in the General Order and those listed in the General Information section below are applicable to your project. You are assigned Order No. R5-2008-0149-041.

Project Location:

The project is in San Joaquin County, Township 25S, Range 8E, Section 19, Mount Diablo Baseline & Meridian; Assessor's Parcel Number 261-002-007; Latitude 37.75 degrees N, Longitude 121.14 degrees W.

Project Description:

Ripon Farm Service is removing nitrogen from groundwater that resulted from historic operations. The project will promote reducing conditions in groundwater in a pilot study application area. The reducing conditions will biologically convert nitrate to dinitrogen gas, thereby removing it from groundwater. Ripon Farm Service will add the proprietary carbon-based product, EHC® Carbon-Only, to shallow groundwater at three locations on the property. One location is near former boring B-34, which will be a single injection point adjacent to three temporary monitoring points that will be used to determine the subsurface radius of distribution. The second and third locations will be four injection points around MW-103, and four injection points around MW-104, which are near the center of the nitrogen pollution.

In the 16 August 2011 letter, Ripon Farm Service committed to preparing a contingency plan within 30 days of a request from Central Valley Water Board staff. The contingency plan will be

prepared if long-term detrimental effects in the soil and/or groundwater occur as a result of the injections. For example, if ammonium is produced, migrates to a downgradient monitoring well, and persists longer than 3 months, Ripon Farm Service could propose to establish oxidizing conditions as part of a contingency plan.

On 30 August 2012, Ripon Farm Service circulated a fact sheet describing the pilot study proposal. No comments or questions were submitted.

Ripon Farm Service will be conducting monitoring of the remediation project as described in the attached Groundwater Monitoring and Reporting Program. If Ripon Farm Service chooses to expand the scope of the groundwater remediation, a revised Notice of Intent shall be submitted to Central Valley Water Board staff, and a revised Notice of Applicability shall be considered by the Executive Officer.

Conditions of Approval:

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 Notice of Intent. The completed Notice of Intent includes the 10 May 2012 Treatability Study Work Plan, the 16 August 2012 revised *Figure 10*, *and the 16 August 2012 letter of contingency plan* commitment.

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

3. Injection of materials other than EHC® Carbon-Only 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. Ripon Farm Service will provide a contingency plan within 30 days of a request by Central Valley Water Board staff, and implemented upon staff concurrence or modification thereof within a time period deemed appropriate by Central Valley Water Board staff.

6. The Discharger shall comply with the attached Monitoring and Reporting Program, Order No. R5-2008-0149-041, and any revisions thereto as ordered by the Executive Officer.

If you have any questions regarding this matter, please call Ms. Amy Terrell at (916) 464-4680.

for PAMELA C. CREEDON
Executive Officer

Attachment

Distribution List attached

Distribution List

Mr. Kevin Werner, City of Ripon, Ripon
Mr. Nuel Henderson, San Joaquin County Environmental Health Dept., Stockton
Ms. Della Kramer, Central Valley Water Board, Sacramento
Mr. Paul Lambert, Genesis Engineering & Redevelopment, Ripon
Mr. Thomas De'Arth, Genesis Engineering & Redevelopment, Ripon
Mr. John Cooper, Genesis Engineering (via email)
Mr. Jeff Hawkins, Isola & Associates (via email)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-0149-041

FOR
IN-SITU GROUNDWATER REMEDIATION AT SITES WITH VOLATILE ORGANIC COMPOUNDS, NITROGEN COMPOUNDS, PERCHLORATE, PESTICIDES, SEMI-VOLATILE COMPOUNDS AND/OR PETROLEUM HYDROCARBONS

RIPON FARM SERVICE
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a groundwater injection treatment system at Ripon Farm Service, 938 Frontage Road in Ripon. 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, Regional 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 16 monitor wells associated with the footprint of the Ripon Farm Service property. Only the 8 wells listed in Table 1 are associated with the remediation and are therefore included in this MRP. The groundwater monitoring program for these 8 wells and any remediation monitoring wells installed subsequent to the issuance of this MRP shall be sampled according to the schedule in Table 1 and the samples shall be analyzed by the methods in Table 2. Sample collection and analysis shall follow standard EPA protocol.

The monitor wells, extraction wells and/or injection wells shall be sampled according to the schedule in Table 1 and the samples shall be analyzed by the methods in Table 2.

Table 1: Remediation Well Sampling Schedule[1]

Monitoring Wells[2]	Pre-injection	1 week	2 week	1 month	2 months	3 months/ quarterly[3]	Semi-annually[4]	Constituent Suite[5]
MW-103, MW-104 Treatment Zone	x	x	x	x	x	x	x	A
CRW-4 Transition Zone	x	x	x	x	x	x	x	A
RMW-5S, RMW-6S Compliance Zone	x					x	x	B
RMW-7S, RMW-10S, MW-101 Background	x					x	x	B

[1] Sampling frequencies are approximate, to be measured from injection date.
[2] Well locations are shown in Figure 1.
[3] Quarterly sampling shall occur about every 3 months until 1 year has elapsed from injection date.
[4] Semi-annual sampling shall commence one year following injection.
[5] Constituent Suites are listed in Table 2.

Table 2: Constituent Suites and Analytical Methods

Constituent	Method[6]	Maximum Practical Quantitation Limit[7]
Suite A		
Nitrate	EPA 300, EPA 353.2	0.5 mg/L
Ammonium	SM 4500	0.1 mg/L
Sulfate	EPA 300	1 mg/L
Dissolved Iron	SM 3500	0.01 mg/L
Dissolved organic carbon	SM 5310B	0.5 mg/L
Alkalinity	EPA 310.2	10 mg/L
Suite B		
Nitrate	EPA 300, EPA 353.2	0.5 mg/L
Ammonium	SM 4500	0.1 mg/L
Dissolved Iron, Manganese	SM 3500	0.05 mg/L
Dissolved organic carbon	SM 5310B	0.5 mg/L
Total Dissolved Solids	EPA 160.1	10 mg/L

[6] Or an equivalent Method that achieves the maximum Practical Quantitation Limit.
[7] 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 analyses, field sampling and analyses shall be conducted each time a monitor well or extraction well is sampled. The sampling and analyses of field parameters shall be as specified in Table 3.

Table 3: Field Sampling Requirements

Parameters	Units	Type of Sample
Groundwater Elevation	Feet, Mean Sea Level	Measurement
Oxidation-Reduction Potential	Millivolts	Grab
Electrical Conductivity	uhmos/cm	Grab
Dissolved Oxygen	mg/L	Grab
pH	pH Units (to 0.1 units)	Grab

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.

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 4. Each amendment addition shall be recorded individually, along with information regarding the time period over which the amendment was injected into the aquifer.

Table 4: Discharge Monitoring Requirements

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

AMENDMENT ANALYSIS

An analysis of the amendment has been received. No additional analysis is required.

ESTABLISHMENT OF BACKGROUND CONCENTRATION VALUES

The Discharger shall develop background values for concentrations of dissolved iron, dissolved manganese, total organic carbon, total dissolved solids and electrical conductivity in groundwater following the procedures found in CCR Section 20415(e) (10). The Discharger shall submit a proposal to develop background concentrations by **1 December 2012**.

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. In addition, the Discharger shall notify the Central Valley Water Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system. 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 or their subordinate and signed by the registered professional.

The Discharger shall submit electronic data tables to Central Valley Water Board staff within 6 weeks of a sampling event occurring in the first 3 months of the treatability study. In the first year following the implementation of the treatability study, reports shall be submitted quarterly. Quarterly reports shall 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 calendar quarter by **1 February, 1 May, 1 August, and 1 November** or a due date as deemed appropriate by Central Valley Water Board staff until such time as the Executive Officer determines that the reports are no longer necessary. After one year has passed since implementation, report submittal may be semi-annual.

Hard copies of quarterly reports shall be submitted to the Central Valley Water Board by the **1st day of the second month following the end of each calendar quarter (i.e., by 1 February, 1 May, 1 August, and 1 November**), and semi-annual reports shall be submitted **by 1 February and 1 November**, or a due date as deemed appropriate by Central Valley Water Board staff. Each report 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/are 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, which may be submitted in an electronic format;

(i) the status of any ongoing remediation, including 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 February** of each year, or by a due date as deemed appropriate by Central Valley Water Board staff. This report shall contain an evaluation of the effectiveness and progress of the investigation and remediation, and may be substituted for the fourth quarter (or second semi-annual) monitoring 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.

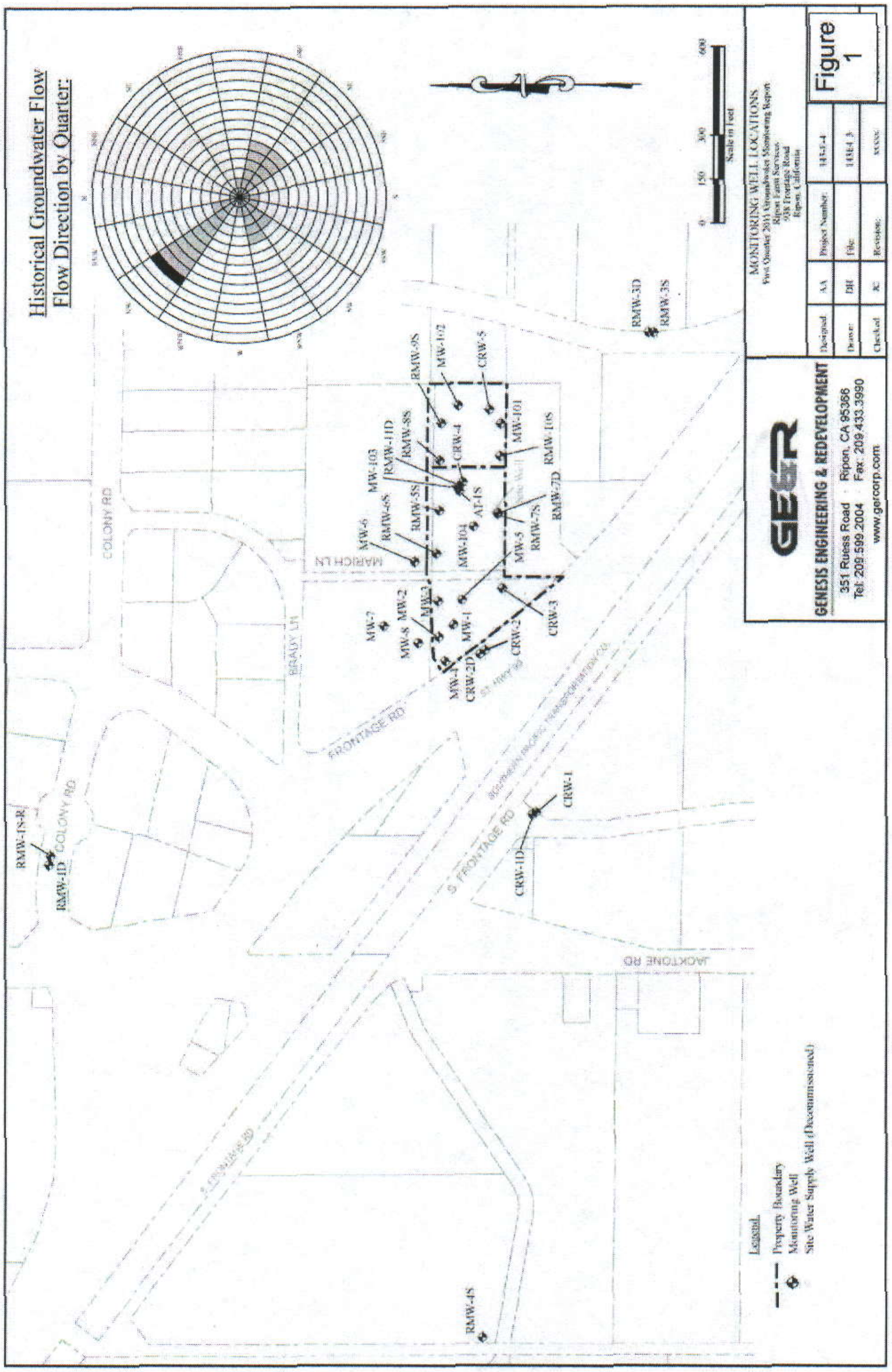
A letter transmitting the monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger 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:

for Frederick S. Moss
PAMELA C. CREEDON, Executive Officer

24 October 2012
(Date)


Historical Groundwater Flow
Flow Direction by Quarter:
MONITORING WELL LOCATIONS
Figure 1
GENESIS ENGINEERING & REDEVELOPMENT
351 Ruess Road Ripon, CA 95366
Tel: 209.599.2004 Fax: 209.433.3990
www.gercorp.com
Scale in Feet
0 150 300 600
COLONY RD
MARCH LN
BRADY LN
FRONTAGE RD
S FRONTAGE RD
JACKTONE RD
RMW-1S-R
RMW-1D
CRW-1
CRW-1D
RMW-4S
RMW-3D
RMW-3S
CRW-2
CRW-2D
CRW-3
CRW-4
CRW-5
MW-1
MW-2
MW-3
MW-5
MW-6
MW-7
MW-8
MW-101
MW-102
MW-103
MW-104
RMW-5S
RMW-6S
RMW-7S
RMW-7D
RMW-8S
RMW-9S
RMW-10S
RMW-11D
AI-1S
Legend
Property Boundary
Monitoring Well
Site Water Supply Well (Decommissioned)