

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING ORDER NO. R5-2019-0807

CALIFORNIA WATER CODE SECTION 13267
FOR
NUTRIEN AG SOLUTIONS, MERCED FACILITY
MERCED COUNTY

This Order is issued to Nutrien Ag Solutions, formerly Crop Production Services (hereafter Discharger) pursuant to California Water Code section 13267, which authorizes the Executive Officer of the California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) to issue a Monitoring and Reporting Order (Order).

The Executive Officer finds:

INTRODUCTION

1. Nutrien Ag Solutions (formerly known as Crop Production Services and Western Farm Service) owns and operates a retail agricultural chemical distribution facility at 265 North Arboleda Drive in Merced.
2. Historical site activities may have resulted in the release of chemicals including 1,2-dichloropropane (1,2-DCP), 1,2,3-trichloropropane (1,2,3-TCP), nitrate, and ammonium, to soil and groundwater. Groundwater has been found in three water-bearing zones at approximately 35 feet, 90 feet, and 145 feet below the ground surface (bgs), although the shallowest zone has not consistently contained water since about 2008. This pollution has impaired the beneficial use of groundwater resources from these zones at the Site.
3. Nutrien Ag Solutions conducted an insitu soil treatment for nitrate in a former on-site evaporation pond, implemented a pilot study in groundwater at approximately 90 feet bgs using an in-situ carbon source to remove the chemicals of concern, excavated soil containing organochlorine compounds, replaced numerous downgradient domestic supply wells, and has conducted soil and groundwater assessments in an effort to identify source areas of 1,2,3-TCP in soil.
4. This Monitoring and Reporting Order is issued by the Central Valley Water Board, pursuant to California Water Code (CWC) section 13267 and is necessary to delineate groundwater pollutant plumes and verify that replacement domestic wells do not contain identified contaminants of concern.
5. Existing data and information about the Site show the presence of various chemicals, including 1,2,3-TCP, 1,2-DCP, nitrate, ammonium, and 1,2-dibromoethene (EDB) allegedly emanating from the Discharger's property. The Discharger is responsible for the discharge because it owns and operates this facility.

6. The Discharger shall not implement any changes to this Order unless and until a revised Order is issued by the Executive Officer. This Monitoring and Reporting Order replaces the requirements listed in Order No. R5-2002-0812, which was issued on 2 July 2002.
7. Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new monitoring wells shall be added to the monitoring program and shall be sampled and analyzed according to the schedule provided under the 'Required Actions' section of this Order.

LEGAL PROVISIONS

8. CWC section 13267 states, in part:
 - a. (b)(1) In conducting an investigation, the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
9. The reports required herein are necessary for the reasons described in this Order, to assure protection of waters of the state, and to protect public health and the environment.
10. CWC section 13268 states, in part:
 - a. (a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267 . . . or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).
 - b. (b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with Section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.
 - c. (c) Any person discharging hazardous waste, as defined in Section 25117 of the Health and Safety Code, who knowingly fails or refuses to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, or who knowingly falsifies any information provided in those technical or monitoring program reports, is guilty of a misdemeanor, may be civilly liable in accordance with subdivision (d), and is subject to criminal penalties pursuant to subdivision (e).

- d. (d)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with Section 13323) of Chapter 5 for a violation of subdivision (c) in an amount which shall not exceed five thousand dollars (\$5,000) for each day in which the violation occurs.
11. Failure to submit the required reports to the Central Valley Water Board according to the schedule detailed herein may result in enforcement action(s) being taken against you, which may include the imposition of administrative civil liability pursuant to CWC section 13268. Administrative civil liability of up to \$5,000 per violation per day may be imposed for non-compliance with the directives contained herein.

REQUIRED ACTIONS

IT IS HEREBY ORDERED that Monitoring and Reporting Order No. R5-2002-0812 is rescinded and, pursuant to California Water Code section 13267, Nutrien Ag Solutions shall conduct monitoring and reporting in compliance with new Monitoring and Reporting Order No. R5-2019-0807 according to the following:

Monitoring Specifications

1. The Discharger shall implement monitoring according to the schedule shown in Tables 1, 2, 3, and 4. As shown in Figure 1, there are eight A-zone monitoring wells, fourteen B-zone monitoring wells, and eleven C-zone monitoring wells. As shown in Figure 2, there are 23 domestic wells associated with downgradient and side-gradient properties, 20 of which shall be sampled per this monitoring program. This Monitoring Order applies to these 33 monitoring wells, 20 of the 23 domestic supply wells, and any monitoring wells or supply wells installed subsequent to the issuance of this Order. The Discharger shall collect samples using standard Environmental Protection Agency (EPA) protocol.

Table 1. A-Zone Groundwater Monitoring Schedule¹

	Depth to Groundwater	Nitrate, nitrite (as N)	Ammonium	Volatile organic compounds	1,2,3-trichloropropane	Fumigants (EDB, DBCP)
TW-1S	A	A	-	A	A	A
MW-1S	S	S	S ²	S	S	-
MW-2S	S	S	S ²	S	S	-
MW-3S	A	A	-	A	A	-
MW-4S	S	S	-	S	S	-
MW-5S	S	S	-	S	S	-
MW-6S	A	A	-	A	A	-
MW-9S	S	S	-	S	S	-

¹ S = Semi-annually, in the 1st and 3rd quarters (January-March, and July-September).

A = Annually in the 1st quarter (January - March).

- = Not applicable at this time.

² Ammonium may be removed from the monitoring schedule for an A-zone monitoring well if it is below 1.5 mg/L in two consecutive semi-annual monitoring events.

Table 2. B-Zone Groundwater Monitoring Schedule¹

	Water Levels	Nitrate, nitrite (as N)	Volatile organic compounds	1,2,3- trichloropropane	Fumigants (EDB, DBCP)
MW-3D	A	A	A	A	A
MW-4D	S	S	S	S	S
MW-5D	S	S	S	S	S
MW-7D	S	S	S	S	S
MW-10D	A	A	A	A	-
MW-11B	S	S	S	S	S
MW-12B	S	S	S	S	-
MW-13B	S	S	S	S	-
MW-14B	S	S	S	S	-
MW-15B	S	S	S	S	S
MW-16B	S	S	S	S	S
MW-18B	S	S	S	S	S
MW-19B	S	S	S	S	S
MW-20B	S	S	S	S	S

¹ S = Semi-annually, in the 1st and 3rd quarters (January-March, and July-September).

A = Annually in the 1st quarter (January - March).

- = Not applicable at this time.

Table 3. C-Zone Groundwater Monitoring Schedule¹

	Water Levels	Nitrate, nitrite (as N)	Volatile organic compounds	1,2,3- trichloropropane	Fumigants (EDB, DBCP)
MW-8C	S	S	S	S	S
MW-11C	S	S	S	S	B
MW-12C	S	S	S	S	B
MW-13C	S	S	S	S	B
MW-14C	A	A	A	A	B
MW-15C	S	S	S	S	B
MW-16C	S	S	S	S	S
MW-17C	S	S	S	S	S
MW-18C	S	S	S	S	S
MW-19C	S	S	S	S	S
MW-20C	A	A	A	A	A

¹ S = Semi-annually, in the 1st and 3rd quarters (January-March, and July-September).
 A = Annually in the 1st quarter (January - March).
 B = Biennially in the 1st quarter of even-numbered years (January-March).
 - = Not applicable at this time.

Table 4. Domestic Supply Well Monitoring Schedule^{2, 3, 4}

If a sample cannot be obtained at the scheduled interval, a sample shall be obtained at the next sampling event.

Address	Property Number	Nitrate, nitrite (as N)	Fumigants (EDB, DBCP)	1,2-dichloropropane	1,2,3-trichloropropane
5454 East Highway 140	3 ⁵	B	B	B	B
5510 East Highway 140	4 ⁵	S ⁶	S ⁶	S ⁶	S ⁶
5586 East Highway 140	5	S ⁶	S ⁶	S ⁶	S ⁶
5616 East Highway 140	6	S ⁶	S ⁶	S ⁶	S ⁶
5632 East Highway 140	7	S ⁶	S ⁶	S ⁶	S ⁶
5650 East Highway 140	8	S ⁶	S ⁶	S ⁶	S ⁶
5670 East Highway 140	9 ⁵	S ⁶	S ⁶	S ⁶	S ⁶
5708 East Highway 140	10	S ⁶	S ⁶	S ⁶	S ⁶
5728 East Highway 140	11	S ⁶	S ⁶	S ⁶	S ⁶
5736 East Highway 140	12 ⁵	S ⁶	S ⁶	S ⁶	S ⁶
5762 East Highway 140	13	S	S	S	S
5766 East Highway 140	14	S	S	S	S
5774 East Highway 140	15/16	S	S	S	S
5804 East Highway 140	17a	S	S	S	S
5820 A East Highway 140	17b	S	S	S	S
5824 East Highway 140	18	S	S	S	S
5966 East Highway 140	19	A ⁷	A ⁷	A ⁷	A ⁷
5988 East Highway 140	20	A ⁷	A ⁷	A ⁷	A ⁷
463 North Arboleda Dr.	21 ⁵	S	S	S	S
265 North Arboleda Dr.	22	B	B	B	B

² Well sampling is subject to obtaining permission to sample from property owner or tenant.

³ If potable water is being delivered, the supply well shall be sampled biennially in the 1st quarter of even numbered years.

⁴ S = Semi-annually in the 1st and 3rd quarters. A = Annually in the first quarter. B = Biennially in the 1st quarter of even-numbered years.

⁵ The irrigation or secondary well shall be also sampled, if possible.

⁶ If two consecutive sample events do not detect 1,2,3-TCP or other fumigants above water quality objectives, the well may be placed on an Annual sampling schedule.

⁷ If two consecutive sample events do not detect 1,2,3-TCP or other fumigants above water quality objectives, the well may be placed on a Biennial sampling schedule.

- The Discharger shall conduct field sampling measurements and analyze samples according to standard Environmental Protection Agency (EPA) protocol using the methods shown in Table 5.

Table 5. Field Sampling Measurements and Analytical Methods

Constituents	Analytical Method ⁸	Maximum Practical Quantitation Limit ⁹
Depth to Groundwater ¹⁰	---	---
pH, temperature, electrical conductivity ¹⁰	Field Meter	Varies
Nitrate (with or without nitrite)	EPA 300 or 353 or SM4500 NO3	1 mg/L
Ammonium	SM 4500 NH3	0.5 mg/L
Volatile Organic Compounds (including 1,2-dichloropropane)	EPA 8260B	0.5 ug/L
1,2,3-trichloropropane	524.2 Low Level	0.005 ug/L
Fumigants (including 1,2-dibromoethene)	EPA 504.1	0.05 ug/L

⁸ Or equivalent method that achieves the Maximum Practical Quantitation Limit.

⁹ All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as trace.

¹⁰ Field measurements to be conducted with monitoring wells, not domestic supply wells.

Reporting Specifications

- When reporting data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible and shall summarize the data in such a manner as to illustrate clearly the compliance with this Order.
- 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 shall be signed by the registered professional.
- Semi-annual** electronic reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30, shall be submitted over the internet to the State Water Resources Control Board Geotracker database system by **1 May and 1 November**, or as otherwise indicated by Central Valley Water Board staff, until such time as the Executive Officer determines that the reports are

no longer necessary. A paper report shall be provided as requested 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 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) Isocontour pollutant concentration maps for all groundwater zones and all major constituents of concern, if applicable.
- (e) A figure illustrating private property boundaries, property identifications, domestic well results superimposed with E. Hwy 140 monitoring well locations.
- (f) A table showing domestic well depths and installation dates (if known) and cumulative water quality results.
- (g) 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.
- (h) A table showing historical lateral and vertical (if applicable) flow directions and gradients.
- (i) Cumulative data tables for all major constituents of concern containing the water quality analytical results and depth to groundwater for all monitoring wells for the past five years, if applicable. Older data may be provided on electronic media or provided in hardcopy in the report. The Central Valley Water Board may request additional data as necessary.
- (j) A copy of the laboratory analytical data report, which may be provided on electronic media and included in the report.
- (k) If applicable, the status of any ongoing remediation, including cumulative information on the 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.

- (l) An estimate of the mass of pollutants removed from the subsurface during the reporting period, including an estimate of pollutant mass eliminated through in-situ treatment and natural attenuation processes.
 - (m) 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.
6. An Annual Report shall be submitted to the Central Valley Water Board by **1 May** of each year. This report shall contain an evaluation of the effectiveness and progress of the investigation and remediation, and may be substituted for the second semi-annual monitoring report, provided that all information that must be submitted in the semi-annual report is included along with the following minimum information:
- (a) A cumulative table of domestic well sampling data, including address, property identification number, well depth and date of installation (if known), sampling dates and pollutant concentrations.
 - (b) Both tabular and graphical summaries of all monitoring data obtained during the year. A graphic that includes both B-zone and C-zone monitoring data.
 - (c) A discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells.
 - (d) 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.
 - (e) A cumulative summary of pollutant mass removed from the subsurface, including elimination of pollutant mass through in-situ remedial methods or natural attenuation.
 - (f) An identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.
 - (g) If applicable, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.
 - (h) A discussion of next steps to be taken in the upcoming year.
7. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Order also shall be reported to the Central Valley Water Board.
8. The Discharger shall implement the above monitoring program as of the effective date of the Order.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with CWC section 13320 and California Code of Regulations, Title 23, Sections 2050 and following. The State Water Resources Control Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

This Order is effective upon the date of signature.

Ordered by:



ANDREW ALTEVOGT, Assistant Executive Officer

2/5/19

(Date)

Figure 1. Monitoring Well Locations



Figure 2. Downgradient properties with domestic supply wells.

