California Regional Water Quality Control Board
Central Valley Region
Katherine Hart, Chair

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Linda S. Adams
Acting Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

26 May 2011

Mr. Jack Badey
EHS Manager, UniFirst Corporation
68 Jonspin Road
Wilmington, MA 01887-1090

NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2008-0149-029, UNIFIRST STOCKTON IN-SITU REMEDIATION OF VOLATILE ORGANIC COMPOUNDS, 819 HUNTER STREET, SAN JOAQUIN COUNTY

UniFirst submitted a Notice of Intent, dated 19 January 2011, requesting coverage under 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. Based on information in your submittal, it is our determination that this project meets the required conditions to be approved under 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. R5-2008-0149-029.

Project Location:
The project is at 819 Hunter Street, Stockton as shown in Figure 1. The Assessor's Parcel Number is 139-053-14, and it is within Township 1 N, Range 6E, Mount Diablo Baseline and Meridian.

Project Description:
As described in the 29 October 2010 *Groundwater Interim Remedial Action Plan* and the 21 February 2011 *Groundwater Interim Remedial Action Plan Addendum*, both prepared by AMEC Geomatrix, UniFirst is conducting a pilot study entailing injecting Hydrogen Releasing Compound® (HRC) and HRC Primer into three aquifer depths. The target depths, 45 feet, 75 feet, and 105 feet below ground surface, correspond to the base of the screen intervals in the proximate downgradient monitoring well cluster. The objective is to accelerate the existing processes of biodegradation to reduce the mass of tetrachloroethene (PCE) and trichloroethene (TCE) in groundwater. The pilot study is anticipated to be concluded in two years.

Contingency Plan

As discussed on 18 March 2011 in a telephone conversation between Mr. Bill Aravanis of AMEC Geomatrix, and Ms. Amy Terrell of my staff, the contingency plan described in the Addendum is modified to state that if a significant and prolonged increase in dissolved organic carbon, or vinyl chloride occurs in the compliance point wells, then the contingency plan will be implemented. If either of these compounds is detected in a compliance point well, then three consecutive quarters of monitoring for these constituent(s) in the compliance well(s) and in the background wells will be conducted. If the background concentration is exceeded and sustained in the compliance well(s) for three consecutive quarters, then UniFirst will provide a work plan to address the particular exceedance. The work plan could include aeration, a pH adjustment, introduction of dehalococcoides bacteria, or continued monitoring, depending upon the nature of the exceedance.

On 24 May 2011, in a telephone call, Mr. Bill Aravanis of AMEC Geomatrix stated that the Monitoring and Reporting program identified a due date of 31 May 2011 to submit a proposal to develop background concentrations. He suggested that this date be extended since it falls so close to the date of this Notice of Applicability. The Monitoring and Reporting Program now reflects a due date of 1 August 2011 for the proposal. No other comments were received during the public comment period ending 23 May 2011.

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 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 revoked.

3. Injection of materials other than HRC and HRC Primer 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 final contingency plan included as part of the 21 February 2011 Addendum, and as refined above, within 60 days of it being triggered.

6. The Discharger shall comply with the attached Monitoring and Reporting Program, Order No. R5-2008-0149-029, 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 or contact her at aterrell@waterboards.ca.gov.

PAMELA C. CREEDON
Executive Officer

Attachments: General Order R5-2008-0149, Monitoring and Reporting Program No. R5-2008-0149-029, Information Sheet, Standard Provisions

cc: Mr. Michael Infurna, San Joaquin County Environmental Health Dept., Stockton
Ms. Della Kramer, Regional Water Quality Control Board, Sacramento
Mr. William Pipes, AMEC Geomatrix, Fresno (with attachments)

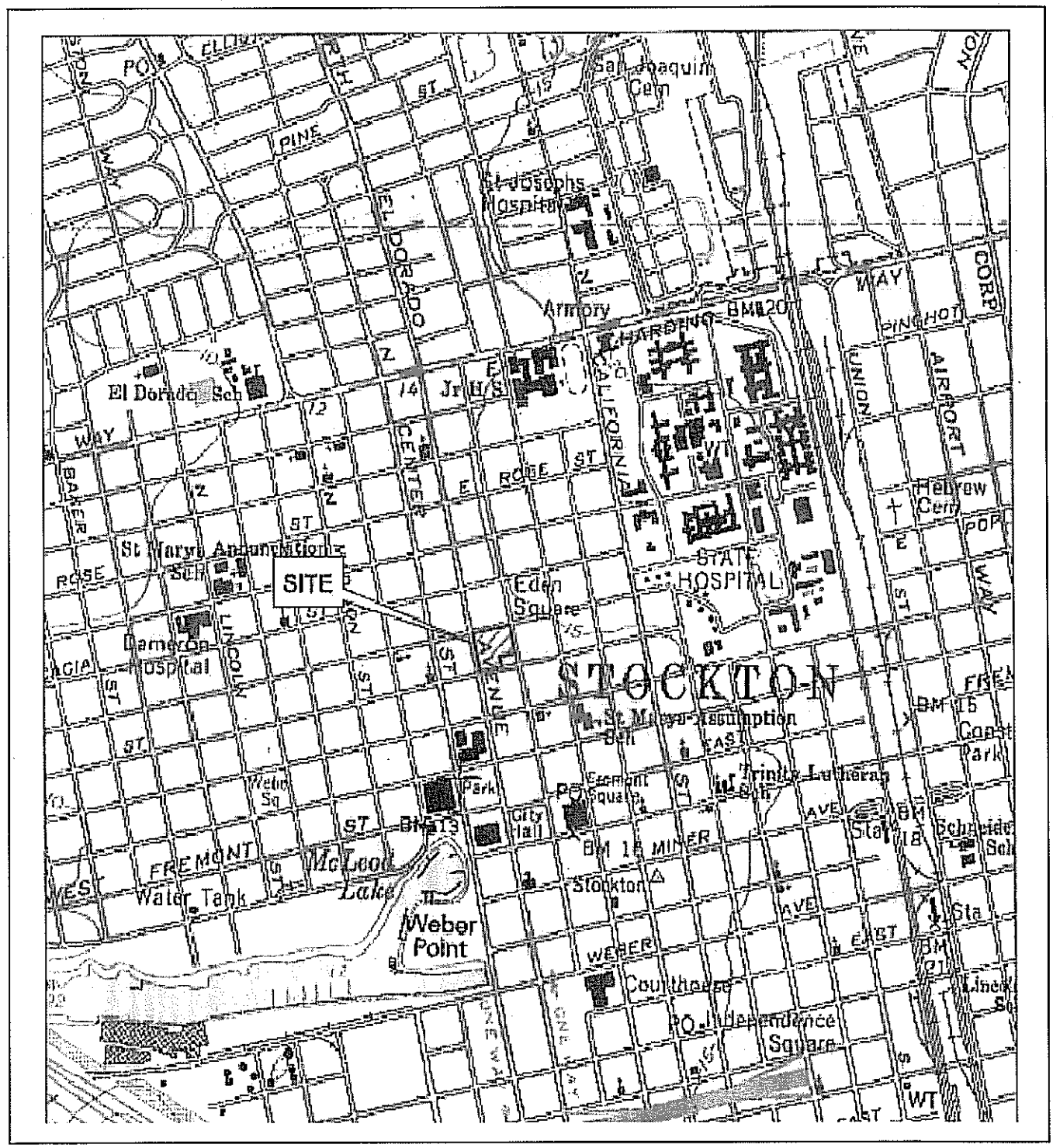


Figure 1. Vicinity Map, 819 Hunter Street, Stockton

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-0149-029

FOR
IN-SITU GROUNDWATER REMEDIATION AT SITES WITH VOLATILE ORGANIC COMPOUNDS

UNIFIRST STOCKTON FACILITY
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a pilot-scale treatment of groundwater using subsurface injections to stimulate biological remediation of volatile organic chemicals at 819 North Hunter Street in Stockton. The pilot-scale treatment is anticipated to be concluded in two years. 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 11 monitoring wells associated with this site. The groundwater monitoring program for these wells and any treatment system wells installed subsequent to the issuance of this MRP shall follow the schedule below as applicable. Sample collection and analysis shall follow standard EPA protocol.

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

Table 1: Sampling Frequency and Constituent Suites

Well Number[1]	Frequency	Constituent Suite(s)[2]	Monitoring Objective
MW-1, MW-5A, MW-5B, MW-5C, MW-6, MW-7, MW-8, MW-9	Pre-Injection	A	Baseline
MW-5A, MW-5B, MW-5C	Month 1, Semi-annual[3]	A & B	Transition Zone[4]
MW-7, MW-8, MW-9	Semi-annual[3]	A & B	Compliance[5]
MW-1, MW-6	Semi-annual[3]	A	Background[6]
MW-1, MW-2, MW-3, MW-4, MW-6	Semi-annual[3]	B	Ambient Conditions

Footnotes on following page

Footnotes to Table 1

[1] Well numbers as shown on Figure 1.
[2] Constituent suite components are listed in Table 2.
[3] Semi-annually in the 1st quarter (Jan-March) and 3rd quarter (July-September).
[4] Wells sampled to evaluate in-situ bioremediation progress within the transition zone.
[5] Wells used to determine compliance with groundwater limitations.
[6] Wells used to develop background concentrations.

Table 2: Analytical Methods

Constituent	Method[1]	Maximum Practical Quantitation Limit (µg/L)[2]
Suite A		
Total Dissolved Solids	EPA 160.1	10,000
Dissolved Iron	EPA 6010B	50
Dissolved Manganese	EPA 6010B	5
Sulfate	EPA 300	1,000
Nitrate/Nitrite (as nitrogen)	EPA 300	500
Ammonium (as nitrogen)	EPA 350.1	500
Dissolved Organic Carbon	SM5310B	500
Total Organic Carbon	SM5310B	500
Alkalinity	SM2320B	2,000
Metabolic Acids (volatile fatty acids)	Standard Operating Procedure	1,000
Suite B		
Volatile Organic Compounds (Including PCE and TCE)	EPA 8260B	1

[1] Or an equivalent method that achieves the maximum Practical Quantitation Limit

[2] 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 analysis, field parameter sampling and analysis shall be conducted each time a monitoring well or extraction well is sampled. The sampling and analysis 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	µhmos/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 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	Meter/Tank Level
Amendment(s) Added	Kilograms	Measured

AMENDMENT ANALYSIS

The Regional Board has analyses of the amendments, Hydrogen Release Compound® (HRC) and HRC primer. Additional analyses are not required.

ESTABLISHMENT OF BACKGROUND CONCENTRATION VALUES

The Discharger shall develop background values for concentrations of dissolved iron, dissolved manganese, total dissolved solids and electrical conductivity in groundwater following the procedures found in CCR Section 20415(e) (10). Background concentrations will be developed based on samples collected during the first 2 years of monitoring described in Table 1. As such, estimates of background concentration shall be submitted in the Second Semiannual 2013 Groundwater Monitoring for the site. The Discharger shall submit a proposal to develop the background concentrations by **1 August 2011**.

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 or subordinate and signed by the registered professional.

The Discharger shall submit semi-annual electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. The semiannual reports shall be submitted electronically over the internet to the Geotracker database system by **31 May, and 30 November** until such time as the Executive Officer determines that the reports are no longer necessary. UniFirst may recommend changes to the Monitoring and Reporting Progam by submitting a request in an Annual Report.

Hard copies of semiannual reports shall be submitted to the Regional Board by **31 May, and 30 November** each year. Each semiannual 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, and how and when samples were collected;

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

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

(d) a table(s) showing well construction details such as well number, reference elevation, depth of screen, depth of bentonite, and depth of well bottom;

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

(f) a copy of the laboratory analytical data report, which may be submitted in an electronic format;

(g) the status of any ongoing remediation and the effectiveness of the remediation; and

An Annual Report shall be submitted to the Regional Board by **30 November** 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. The Annual Report shall contain the following minimum information:

(a) both tabular and graphical summaries of chlorinated volatile organic compound monitoring data obtained during the year;

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

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

(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 effectiveness;

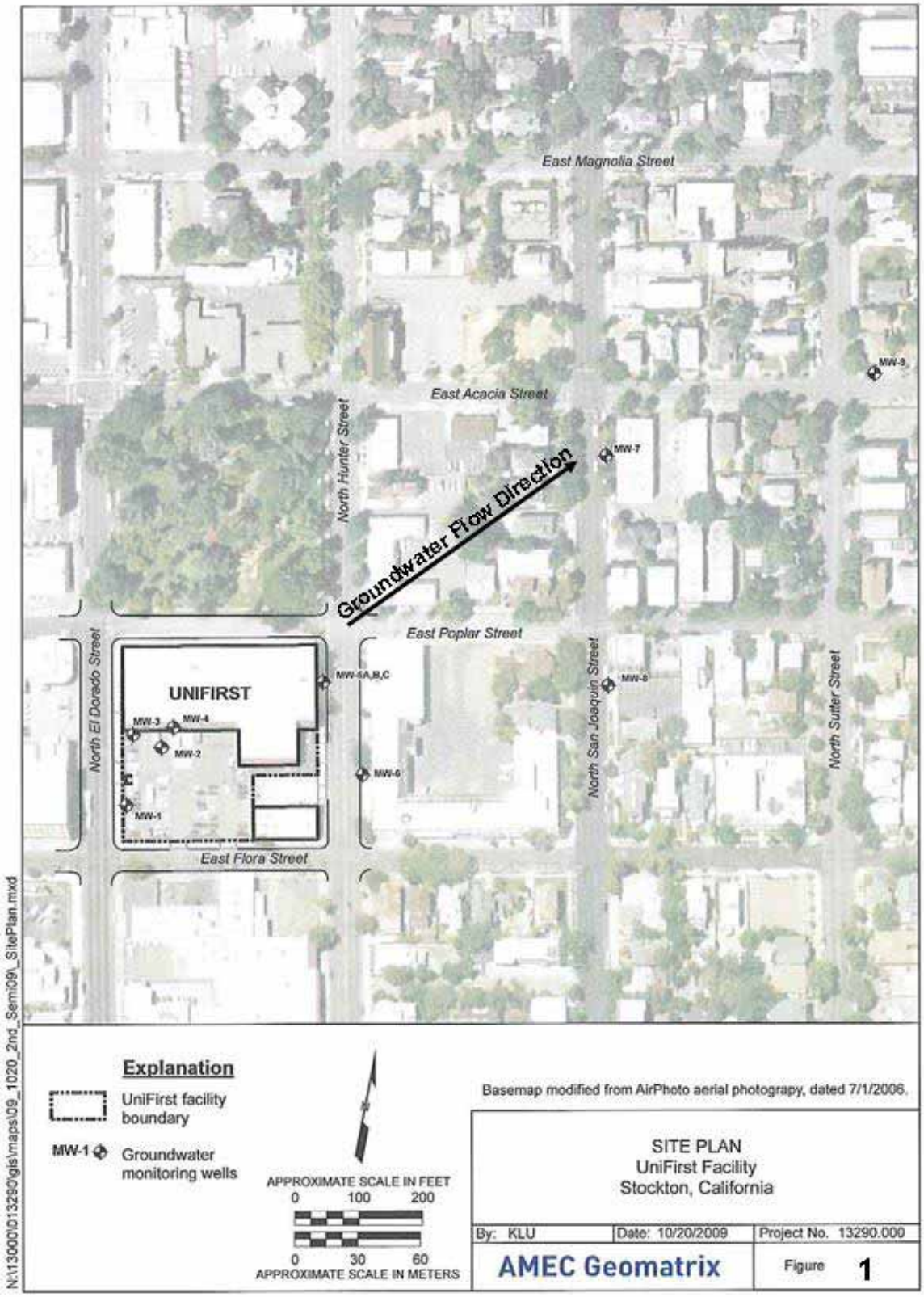
(e) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program; and

(f) 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 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: Frederick Moore
for PAMELA C. CREEDON, Executive Officer
25 May 2011
(Date)


East Magnolia Street
East Acacia Street
North Hunter Street
Groundwater Flow Direction
East Poplar Street
North El Dorado Street
North San Joaquin Street
North Sutter Street
East Flora Street
UNIFIRST
MW-1
MW-2
MW-3
MW-4
MW-5A,B,C
MW-6
MW-7
MW-8
MW-9
Explanation
UniFirst facility boundary
MW-1 Groundwater monitoring wells
APPROXIMATE SCALE IN FEET
0 100 200
0 30 60
APPROXIMATE SCALE IN METERS
Basemap modified from AirPhoto aerial photograpy, dated 7/1/2006.
SITE PLAN
UniFirst Facility
Stockton, California
By: KLU
Date: 10/20/2009
Project No. 13290.000
AMEC Geomatrix
Figure 1
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