CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM, REVISION 1
ASSOCIATED WITH WASTE DISCHARGE REQUIREMENTS NO. R5-2004-0055

FOR
JOHN TAYLOR FERTILIZERS CO.
YUBA CITY FACILITY
ENHANCED BIOREMEDIATION PROJECT
SUTTER COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring the progress of the enhanced bioremediation project. This MRP is issued pursuant to California Water Code Section 13267. John Taylor Fertilizers Co. (Discharger) is required to comply with this MRP. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. In addition to this MRP, groundwater monitoring and reporting outlined in MRP No. R5-2004-0815 is still required. The enhanced bioremediation project consisted of injecting Hydrogen Releasing Compound (HRC™) into groundwater.

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

ENHANCED BIOREMEDIATION MONITORING

As shown on Figure 1, there are 10 monitoring wells (MW-1A, MW-1B, MW-2A, MW-3A, MW-6A, MW-7A, MW-8A, MW-9A, MW-10A, and MW-10B) associated with the enhanced bioremediation project. Monitoring wells MW-4A, MW-4B, MW-5B, MW-6B, and MW-10C are not associated with the bioremediation project and are not subject to this MRP. The groundwater monitoring program for the 10 wells and any wells installed subsequent to the issuance of this MRP that are related to monitoring the enhanced bioremediation project, shall follow the schedule below. Sample collection and analysis shall follow standard EPA protocol, and analyses shall be completed by a State certified laboratory. Monitoring well samples shall be obtained annually in the third quarter (July-September) and analyzed for the following constituents and parameters in accordance with the following tables.

Table 1. Bioremediation Groundwater Monitoring Schedule

A = Annually in the third quarter (July-September);
S = Semi-annually in the first (Jan-May) and third quarter (July-Sept).

	MW-1A	MW-1B	MW-2A	MW-3A	MW-6A	MW-7A	MW-8A	MW-9A	MW-10A	MW-10B
Depth to Water	A	A	A	A	A	A	A	A	S	S
Nitrate plus Nitrite (as nitrogen)	A	A	A	A	A	A	A	A	A	A
Ammonia/Ammonium			A	A	A	A	A	A	A	A
Volatile Organic Compounds (including 1,2-DCP)			A	A	A	A	A	A	A	A
1,2,3-Trichloropropane	A	A	A	A	A	A	A	A	A	A
Alkalinity			A	A				A		
Chloride			A	A	A	A	A	A	S	S
Sulfate			A	A	A	A	A	A	A	A
Total Organic Carbon			A	A	A	A	A	A	S	S
Methane (dissolved)			A	A				A		
Oxygen (dissolved)			A	A	A	A	A	A	A	A

Table 2. Analytical Methods and Detection Limits

Constituents	Analytical Method	Maximum Reporting Limit[1]
Depth to Groundwater	---	0.01 ft
Nitrate plus Nitrite (as nitrogen)	SM 4500 or 353	500 ug/l
Ammonia/Ammonium	SM 4500 or 350	500 ug/l
Volatile Organic Compounds, including 1,2-Dichloropropane	8260B	0.5 ug/l
1,2,3-Trichloropropane	8260B or 504.1 or Low Level GC/MS [2]	5.0 or 0.02 or 0.005 [3] ug/l
Alkalinity	SM 2320	10,000 ug/l
Chloride	9056	5,000 ug/l
Sulfate	9056 or 300	1,000 ug/l
Total Organic Carbon	415, 9060, or SM 5310	1,000 ug/l
Methane (dissolved)	RSK 175M or ASTM D1945	10 ug/l
Dissolved Oxygen	Field instrumentation	---

[1] For nondetectable results
[2] 1,2,3-TCP may be analyzed with Method 8260B whenever concentrations are at or above 5.0 ug/L. When 1,2,3-TCP is not detected at a detection limit of 5 ug/L then in the next regularly scheduled monitoring event, 1,2,3-TCP in this well shall be analyzed by Method 504.1 or by Low Level GC/MS. When 1,2,3-TCP is not detected at 0.02 ug/L then in the next regularly scheduled monitoring event, 1,2,3-TCP in this well shall be analyzed by Low Level GC/MS.
[3] Method Reporting Limit for 1,2,3-TCP by Method 8260B is 5 ug/L, by Method 504.1 is 0.02 ug/L, and by Low Level GC/MS Method is 0.005 ug/L.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type, and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall also be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist, signed by the registered professional, and shall be accompanied by a transmittal letter.

A. Annual Report

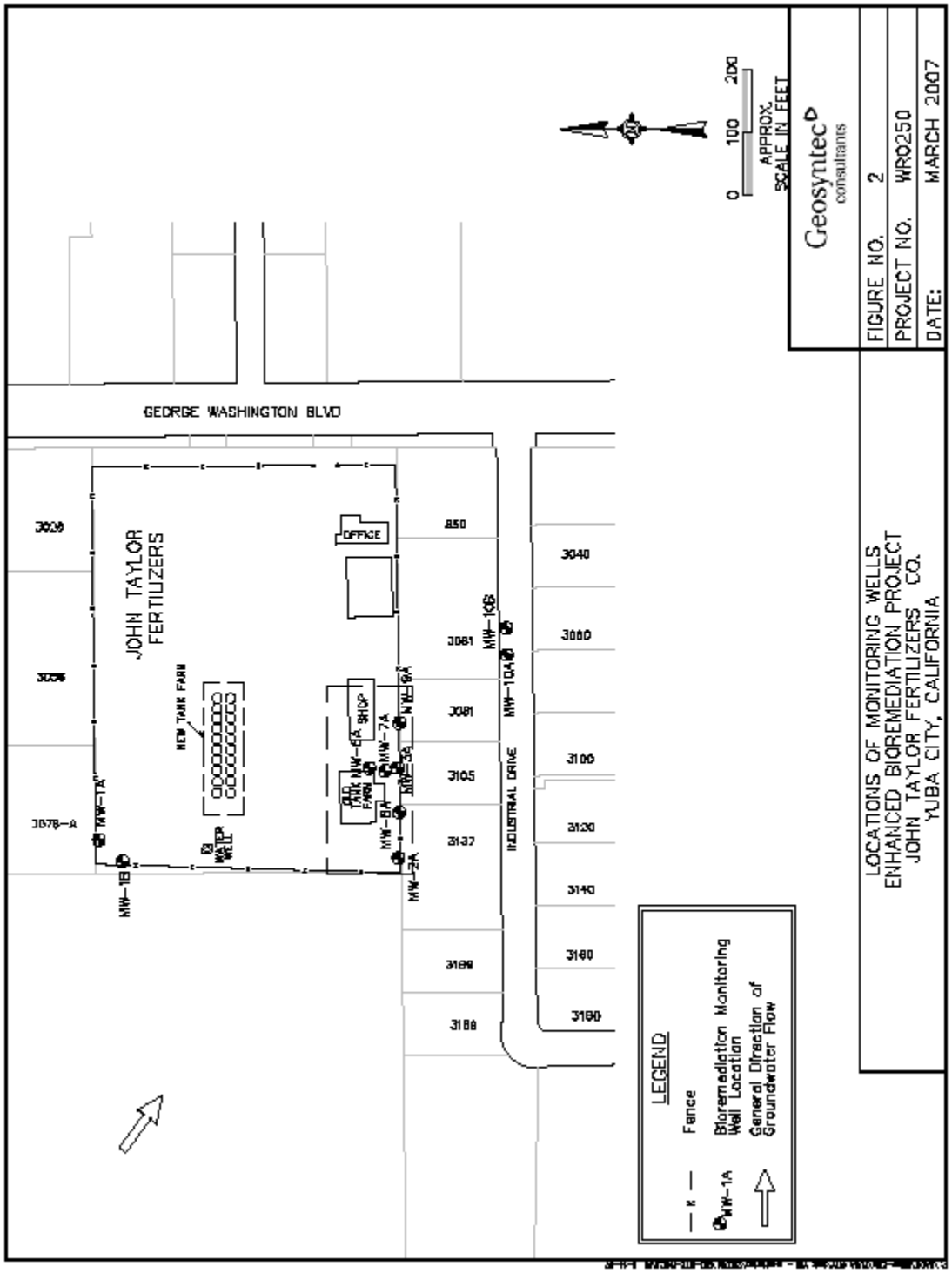
An annual report shall be submitted to the Board by **1 November** each year. These reports may be combined with the corresponding reports required by MRP No. R5-2004-0815. The annual report shall contain the following minimum information:

1. Summary data tables of historical and currrent water table elevations and analytical results.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance or lack thereof with the waste discharge requirements, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; calculation of casing volume; total volume of water purged, etc.;
3. Calculation of groundwater elevations and discussion of seasonal trends, if any;
4. A table showing well construction details such as well number, groundwater zone being monitored, coordinates, top of casing elevation, depth of well, and depth of screen intervals;
5. A narrative discussion of the analytical results for all groundwater locations monitored, including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
6. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
7. A scaled map showing relevant structures and features of the facility, the injection grid, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
8. Copies of all laboratory analytical report(s) for groundwater monitoring not previously transmitted. These may be provided on electronic media.
9. An evaluation of the performance of the HRC® and an analysis of its effectiveness in destroying the pollutants;
10. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program; and
11. If desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.

The Discharger shall implement the above monitoring program as of the date of the Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____15 June 2009_____
(Date)


GEORGE WASHINGTON BLVD
JOHN TAYLOR FERTILIZERS
OFFICE
SHOP
NEW TANK FARM
OLD TANK FARM
MW-1A
MW-1B
MW-2A
MW-3A
MW-4A
MW-5A
MW-6A
MW-7A
MW-10A
MW-10B
INDUSTRIAL DRIVE
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110
3120
3130
3140
3150
3160
3170
3180
3190
LEGEND
Fence
Bioremediation Monitoring Well Location
General Direction of Groundwater Flow
0
100
200
APPROX. SCALE IN FEET
Geosyntec consultants
FIGURE NO. 2
PROJECT NO. WR0250
DATE: MARCH 2007
LOCATIONS OF MONITORING WELLS
ENHANCED BIOREMEDIATION PROJECT
JOHN TAYLOR FERTILIZERS CO.
YUBA CITY, CALIFORNIA