



2-1-08



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Schwarzenegger  
Governor

Linda S. Adams  
Secretary for  
Environmental  
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30 January 2008

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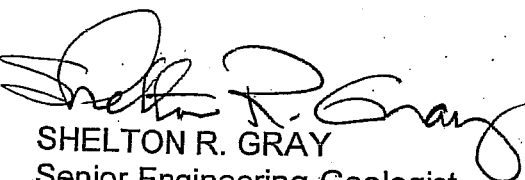
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**BLUE HILLS DISPOSAL FACILITY – FRESNO COUNTY  
REVISED MONITORING AND REPORTING PROGRAM NO. 99-087**

Enclosed is an official copy of Revised Monitoring and Reporting Program No. 99-087. This revised program places the facility into corrective action monitoring, incorporating the *July 2007 Sampling and Analysis for Corrective Action* into the program. Your 17 January 2008 comments were considered in finalizing the revised program. The electronic format and data contained on CD's and tables currently submitted with each monitoring report meet the intent of both Title 23 and the Standard Provisions and Reporting Requirements and can be submitted in future semi-annual monitoring reports.

Since Well E-6 is plugged with tar and no longer able to be sampled, it has been removed from the revised program. Well E-6 and the other wells to be decommissioned will be addressed in a future work plan.

If you have any questions, please call Jim Dowdall of this office at (559) 445-5108.

  
SHELTON R. GRAY  
Senior Engineering Geologist

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Enclosure

cc: Peter Bailey, Department of Toxic Substances Control, Sacramento

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION  
REVISED MONITORING AND REPORTING PROGRAM NO. 99-087  
FOR  
POST-CLOSURE MAINTENANCE  
AND CORRECTIVE ACTION MONITORING  
BLUE HILLS DISPOSAL FACILITY  
FRESNO COUNTY

Compliance with this revised Monitoring and Reporting Program, with Title 23, California Code of Regulations, Section 2510 et seq. (Chapter 15), and with the Standard Provisions and Reporting Requirements dated September 1993, is ordered by Waste Discharge Requirements Order No. 99-087.

**A. REQUIRED REPORTS**

<u>Report</u>	<u>Due</u>
1. Annual Monitoring Summary Report (Standard Provisions and Reporting Requirements, Pages 6 & 7)	Annually as part of 2 <sup>nd</sup> Semi-Annual Report
2. Groundwater Corrective Action Monitoring (Section D.1)	Semi-Annual and Annual <sup>1</sup>
3. Groundwater Constituents of Concern (Section D.1)	Every 5 years <sup>1</sup>
4. Leachate Monitoring (Section D.2)	Semi-Annual
5. Facility Monitoring (Section D.3)	Annually 30 September

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<sup>1</sup>Per the schedule on Table 4 from the Sampling and Analysis Plan, that is included in this revised program.

**B. REPORTING**

The Discharger shall report monitoring data and information as required in this revised Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the Waste Discharge Requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. Data shall be submitted in a digital database format, such as Microsoft Access or Excel that is acceptable to Regional Water Board staff. The data shall be annotated in a manner so that it can be clearly determined whether or not the Discharger is in compliance with the Waste Discharge Requirements.

A **transmittal letter** shall accompany each monitoring report indicating whether or not the facility is in compliance with this revised monitoring and reporting program. A **compliance**

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evaluation summary shall be included in each monitoring report containing the information as described in No. 2 on Pages 5 and 6 of the Standard Provisions and Reporting Requirements (2.i. does not apply since the facility is closed). The transmittal letter shall also contain a summary describing the performance of the corrective action monitoring program, discussing any increasing or decreasing trends.

Field measurements and laboratory tests shall be reported in each monitoring report (No.2.b. & 2.f. on Pages 5 and 6 of the Standard Provisions and Reporting Requirements). Semi-annual, annual, and 5-year monitoring reports shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

Schedule

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Semi-annual	1 <sup>st</sup> Semi-Annual	30 June	31 August
	2 <sup>nd</sup> Semi-Annual	31 December	28 February
Annual*	2 <sup>nd</sup> Semi-Annual	31 December	28 February
5-Year**	2 <sup>nd</sup> Semi-Annual	31 December	28 February

\* Data for annual monitoring parameter constituents (Chloride, Nitrate as Nitrogen, Calcium, Magnesium, Sodium, Potassium, Sulfate) submitted annually as part of 2<sup>nd</sup> Semi-Annual Report.

\*\* Data for Table 4 Constituents of Concern submitted every 5 years as part of the applicable 2<sup>nd</sup> Semi-Annual Report.

The results of any monitoring conducted more frequently at the locations specified herein or by the waste discharge requirements shall be reported to the Regional Water Board.

C. WATER QUALITY PROTECTION STANDARD

1. Water Quality Protection Standards

For each land disposal unit, the water quality protections standard shall include: 1) the list of constituents of concern and corrective action monitoring parameters, 2) a trend analysis for each detected corrective action monitoring parameter and constituent of concern, and 3) the Point of Compliance and groundwater *corrective action monitoring points* specified in this program.

**2. Constituents of Concern**

Constituents of Concern (COCs) are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the land disposal units. The COCs and their monitoring frequency are listed in Table 4 of the *July 2007 Sampling and Analysis Plan for Corrective Action*, which is included in this revised monitoring and reporting program. For any COC detected, the Kendall-Mann Trend Test shall be run to indicate whether a trend exists, and the Sen's slope estimate run to determine whether there is an increasing or decreasing trend.

**3. Corrective Action Monitoring Parameters**

Monitoring parameters are a subset of the COCs and are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from the land disposal units. The groundwater corrective action monitoring parameters and their monitoring frequency are listed in Table 4. Since all the monitoring wells in this revised program are in corrective action as a release from the land disposal units has already been confirmed, for any monitoring parameter detected, the Kendall-Mann Trend Test shall be run to indicate whether a trend exists, and the Sen's slope estimate run to determine whether there is an increasing or decreasing trend.

**4. Point of Compliance**

The point of compliance is the vertical surface located at the hydraulically downgradient limit of the land disposal units extending through the uppermost aquifer underlying these units. The point of compliance is shown on revised Attachment 3.

**a. Corrective Action Monitoring Points**

The corrective action monitoring points are shown on revised Attachment 3 and consist of corrective action monitoring wells B-204B, B-207, E-2, E-3, E-7, E-9, and E-10. Table 2, which is from the *July 2007 Sampling and Analysis Plan for Corrective Action* that lists these wells, is included in this revised program.

**D. MONITORING**

All monitoring shall be conducted in accordance with the *July 2007 Sampling and Analysis Plan for Corrective Action*, which is incorporated by reference into this revised monitoring and reporting program. Wells B-204B, B-207, E-2, E-3, E-7, E-9 and E-10 shall serve as the Point of Compliance for groundwater corrective action monitoring for the facility.

**1. Groundwater Corrective Action Monitoring**

The Discharger shall collect, preserve, and transport groundwater samples from wells in accordance with the procedures described in the *July 2007 Sampling and Analysis Plan*.

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*for Corrective Action.* The wells shall be analyzed **semi-annually** and **annually** for the monitoring parameters, except 1,4-Dioxane, listed on Table 4 of this revised program using the analytical methods specified.

The Discharger shall determine groundwater flow rate and direction **quarterly** in the Ss1 Sand and report the results **semi-annually**. The groundwater depths measured from each corrective action well completed in this sand shall be used to determine the groundwater flow direction and velocity. These include Wells B-204B, B-207, E-2, E-3, and Well E-9. The location of these wells shall be provided in a map included in the **semi-annual** Groundwater Monitoring Reports.

Semi-annual and annual groundwater monitoring data shall be submitted in the **semi-annual** Groundwater Monitoring Reports due **as specified in the Section B Reporting**. Each report shall contain, in addition to reporting requirements specified in this revised program, a summary of the groundwater analytical data including an electronic copy of the certified analytical reports, a summary of the laboratory quality assurance/quality control standards, water level forms, groundwater sample field data sheets, equipment calibration logs, chain-of-custody forms, groundwater elevations and maps, and groundwater gradient and velocity calculations and shall indicate that they meet the standards specified in the *July 2007 Sampling and Analysis Plan for Corrective Action*, especially regarding well purging, field parameter measurement and stabilization, and sampling procedures. Table 13 (Sample Container Requirements) from the Sampling and Analysis Plan has been included in this revised program as a reference.

Method detection limits (MDLs) and practical quantitation limits (PQLs), and constituents detected at or above the MDL and between the PQL, shall be reported as indicated in Section 8.3.4 Laboratory Reporting Limits on Page 34 of the *July 2007 Sampling and Analysis Plan for Corrective Action*.

**Every five years**, a report shall be submitted for the corrective action monitoring wells analyzed for the Field Parameters, Monitoring Parameters and Constituents of Concern contained in Table 4 of this revised program. A trend analysis of all detected Monitoring Parameters and Constituents of Concern shall be performed as described in the plan. This report is due **as specified in the Section B Reporting**. This report shall contain the same detailed information as is required in the semi-annual reports as indicated above.

The Discharger may use groundwater analytical methods other than those contained in Table 4 provided the method has an equal or lower MDL and can detect all the required COCs and monitoring parameters.

Should future site monitoring data indicate a sustained presence of dicamba or MCPP in downgradient Corrective Action Well E-9, then the groundwater extraction alternative described on Pages 40 and 41 of the *July 2007 Sampling and Analysis Plan for Corrective Action* shall be implemented.

## POST-CLOSURE MAINTENANCE

## AND CORRECTIVE ACTION MONITORING

## BLUE HILLS DISPOSAL FACILITY

## TRESNO COUNTY

**2. Leachate Monitoring**

During each **semi-annual** groundwater sampling event, the closed land disposal units shall be inspected for leachate seeps. Should leachate seeps be observed, the leachate shall be sampled and analyzed, if possible, for all the constituents contained in Table 4. The analytical results shall be discussed in the applicable **semi-annual** Groundwater Monitoring Report and methods proposed to contain, control, and eliminate the leachate seeps.

**3. Facility Monitoring****a. Facility Inspection**

By **30 September**, the Discharger shall conduct an **annual** inspection of the facility to assess the condition of the closure cap, asphalt lined drainage ditches, and permanent survey monuments. Any maintenance and/or repairs made, such as erosion repairs of the closure cap or drainage ditches, repairs of rodent damage to the closure cap, removal of vegetation or other obstructions from the drainage ditches, and removal of soil debris around the survey monuments shall be completed by **31 October**. Wooden stakes with tops painted bright orange shall be maintained around the permanent survey monuments for ease of location during inspections.

An **annual report** shall be submitted by **30 November** discussing the results of any maintenance and/or repairs are made. The report shall contain photographs both before and after the maintenance and repairs are made.

**b. Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage control facilities for damage within 7 days following a 24-hour rainfall total of one inch or greater. Any necessary repairs shall be completed within 30 days of the inspection. The Discharger shall report any damage and subsequent repairs made within 45 days, with before and after photographs of the damaged and repaired facilities included in the report.

**c. Seismic Events**


The Discharger shall perform a full-scale facility inspection immediately following an earthquake having a magnitude equal to or greater than 5.5 (Richter scale) with an epicenter within 100 miles of the facility. Necessary repairs shall be completed within 45 days of the inspection. The Discharger shall report any damage and subsequent repairs made within 45 days, with before and after photographs of the damaged and repaired facilities included in the report.

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The Discharger shall implement the above Monitoring and Reporting Program on the effective date of this program.

Ordered by:

  
for PAMELA C. CREEDON, Executive Officer  
1-30-2008  
(Date)

JKD:desktop\Blue Hills\Revised MRP\Rev. 99-087 rev3

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Table 2\*  
Construction Details of Monitoring Wells  
Blue Hills Disposal Facility

Well	Construction Date	Casing Dia. (inches)	Old Top of Casing Elev. (ft., MSL) <sup>1</sup>	New Top of Casing Elev. (ft., MSL) <sup>1,2,5</sup>	New Ground Surface Elev. (ft., MSL) <sup>1,5</sup>	Screened Interval (ft., BTOC) <sup>3</sup>	Screened Interval (ft. MSL) <sup>1,5</sup>	Well Depth (ft., BTOC) <sup>3</sup>	Latitude	Longitude	Range of Historic Groundwater Elevations (ft. MSL) <sup>1,5</sup>	Geologic Unit Monitored
B-204A	NI <sup>4</sup>	2	NI <sup>4</sup>	NI <sup>4</sup>		145-155	NI <sup>4</sup>	155.5	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>2</sub>
B-204B	NI <sup>4</sup>	2	842.90	846.01	845.71	98-108	738.01-748.01	108.5	36.3070466	120.3217207	757.35-763.19	Ss <sub>1</sub>
B-204C	NI <sup>4</sup>	2	842.50	NI <sup>4</sup>		57-67	775.5-785.5	82.5	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>1</sub>
B-207	9/27/1993	2	845.10	849.52	848.64	55-80	769.52-794.52	80.4	36.3069279	120.3218569	779.36-795.45	Ss <sub>1</sub>
E-1A	5/22/1986	2	858.48	NI <sup>4</sup>		82-112	746.48-776.48	118.5	NI <sup>4</sup>	NI <sup>4</sup>	749.21-766.46	Ss <sub>1</sub>
E-1B	5/23/1986	2	858.76	NI <sup>4</sup>		133-163	695.76-725.76	169.6	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>2</sub>
E-1C	5/22/1986	2	858.50	NI <sup>4</sup>		179-189	669.50-679.50	195.0	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>3</sub>
E-1D	3/19/1986	2	858.48	NI <sup>4</sup>		203-243	615.48-655.48	248.5	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>4</sub>
E-2	3/23/1986	4	857.71	860.83	859.54	87-127	733.83-773.83	128.9	36.3075746	120.3219753	744.21-770.37	Ss <sub>1</sub>
E-3	3/19/1986	4	848.77	851.87	850.97	74-114	737.87-777.87	115.4	36.3073329	120.3218294	759.74-766.37	Ss <sub>1</sub>
E-4	4/3/1986	2	891.57	NI <sup>4</sup>		218-258	633.57-673.57	264.0	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>1</sub>
E-5	5/20/1986	2	850.56	NI <sup>4</sup>		202-242	608.56-648.56	244.0	NI <sup>4</sup>	NI <sup>4</sup>	NI <sup>4</sup>	Ss <sub>4</sub>
E-6	8/5/1987	2	894.43	897.66	897.28	136-201	696.66-761.66	202.0	36.3064562	120.3209070	693.02-715.72	Ss <sub>1</sub>
E-7	8/4/1987	2	843.27	846.33	845.52	137-162	684.33-709.33	163.5	36.3070892	120.3216850	690.70-696.85	Ss <sub>2</sub>
E-9	3/28/1995	3	834.83	838.02	836.35	133-163	675.02-705.02	163.5	36.3074913	120.3212812	714.90-720.11	Ss <sub>1</sub>
E-10	4/30/2004	3*	837.79	841.04	839.39	168.82-188.45	652.59-672.22	188.8	36.3074114	120.3215572	662.72-666.10	Ss <sub>2</sub>

Notes:

<sup>1</sup>ft., MSL = Elevation in feet measured relative to mean sea level

<sup>2</sup> Top of Well PVC used as measuring point for depth to water. Resurveyed for Geotracker submittals in 2005.

<sup>3</sup> ft., BTOC = Feet below top of casing

<sup>4</sup> NI = No information readily available.

<sup>5</sup> Elevations based on North American Vertical Datum (NAVD) of 1988

\* = Well screen is 3-inch Schedule 80 (I.D. 2-7/8")

\* Table from July 2007 Sampling and Analysis Plan for Corrective Action



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Table 4 \*  
 Corrective Action Program Monitoring Parameters  
 Blue Hills Disposal Facility

Constituent	Units	USEPA Method	Sampling and Analysis Interval
<b>FIELD PARAMETERS (SEMIANNUALLY ALL WELLS)</b>			
Groundwater Elevation	Feet	Field Analysis	Semiannually
pH	pH Units	Field Analysis	Semiannually
Electrical Conductivity (EC)	mS/cm	Field Analysis	Semiannually
Temperature	Degrees °C	Field Analysis	Semiannually
Dissolved Oxygen (DO)	mg/L	Field Analysis	Semiannually
Oxidation Reduction Potential (ORP)	mV	Field Analysis	Semiannually
Turbidity	NTU	Field Analysis	Semiannually
<b>MONITORING PARAMETERS (SEMIANNUALLY ALL WELLS)</b>			
Total Dissolved Solids (TDS)	mg/L	160.1	Semiannually
Total Organic Carbon (TOC)	mg/L	415.1	Semiannually
<b>Chlorophenoxy Herbicides (Semiannually All Wells)</b>			
Dalapon	µg/L	8151A	Semiannually
Dicamba	µg/L	8151A	Semiannually
Dichloroprop	µg/L	8151A	Semiannually
2,4-D (2,4-Dichlorophenoxyacetic acid)	µg/L	8151A	Semiannually
2,4-DB (2,4-Dichlorophenoxybutyric acid)	µg/L	8151A	Semiannually
Dinoseb (DNBP: 2-sec-Butyl-4,6-dinitrophenol)	µg/L	8151A	Semiannually
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)	µg/L	8151A	Semiannually
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	µg/L	8151A	Semiannually
MCPA	µg/L	8151A	Semiannually
MCPP	µg/L	8151A	Semiannually
<b>Volatile Organic Compounds, Extended List (Semiannually All Wells)</b>			
Acetone	µg/L	8260B	Semiannually
Acetonitrile (Methyl cyanide)	µg/L	8260B	Semiannually
Acrolein	µg/L	8260B	Semiannually
Acrylonitrile	µg/L	8260B	Semiannually
Allyl chloride (3-chloropropene)	µg/L	8260B	Semiannually
Benzene	µg/L	8260B	Semiannually
Bromochloromethane (Chlorobromomethane)	µg/L	8260B	Semiannually
Bromodichloromethane (Dibromochloromethane)	µg/L	8260B	Semiannually
Bromoforn (Tribromomethane)	µg/L	8260B	Semiannually
n-Butylbenzene	µg/L	8260B	Semiannually
Carbon disulfide	µg/L	8260B	Semiannually
Carbon tetrachloride	µg/L	8260B	Semiannually
Chlorobenzene	µg/L	8260B	Semiannually
Chloroethane (Ethyl chloride)	µg/L	8260B	Semiannually
Chloroform (Trichloromethane)	µg/L	8260B	Semiannually
Chloroprene	µg/L	8260B	Semiannually
Dibromochloromethane (Chlorodibromomethane)	µg/L	8260B	Semiannually
1,2-Dibromo-3-Chloropropane (DBCP)	µg/L	8260B	Semiannually
1,2-Dibromomethane (Ethylene dibromide; EDB)	µg/L	8260B	Semiannually
o-Dichlorobenzene (1,2-Dichlorobenzene)	µg/L	8260B	Semiannually
m-Dichlorobenzene (1,3-Dichlorobenzene)	µg/L	8260B	Semiannually
p-Dichlorobenzene (1,4-Dichlorobenzene)	µg/L	8260B	Semiannually
trans-1,4-Dichloro-2-butene	µg/L	8260B	Semiannually
Dichlorodifluoromethane (CFC 12)	µg/L	8260B	Semiannually
1,1-Dichloroethane (Ethylidene chloride)	µg/L	8260B	Semiannually
1,2-Dichloroethane (Ethylene dichloride)	µg/L	8260B	Semiannually
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)	µg/L	8260B	Semiannually
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)	µg/L	8260B	Semiannually
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)	µg/L	8260B	Semiannually
1,2-Dichloropropane (Propylene dichloride)	µg/L	8260B	Semiannually
1,3-Dichloropropane (Trimethylene dichloride)	µg/L	8260B	Semiannually
2,2-Dichloropropane (Isopropylidene chloride)	µg/L	8260B	Semiannually
1,1-Dichloropropene	µg/L	8260B	Semiannually
cis-1,3-Dichloropropene	µg/L	8260B	Semiannually
trans-1,3-Dichloropropene	µg/L	8260B	Semiannually
1,4-Dioxane	µg/L	8260B	Semiannually
Ethylbenzene	µg/L	8260B	5 Years
Ethyl methacrylate	µg/L	8260B	Semiannually

ATTACHMENT B

Table from July 2007 Sampling and Analysis  
 Plan for Corrective Action

**POST-CLOSURE MAINTENANCE  
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**Table 4 (Cont.)  
Corrective Action Program Monitoring Parameters  
Blue Hills Disposal Facility**

Constituent	Units	USEPA Method	Sampling and Analysis Interval
Hexachlorobutadiene	µg/L	8260B	Semiannually
2-Hexanone (Methyl butyl ketone)	µg/L	8260B	Semiannually
Isobutyl alcohol	µg/L	8260B	Semiannually
Methacrylonitrile	µg/L	8260B	Semiannually
Methyl bromide (Bromomethane)	µg/L	8260B	Semiannually
Methyl chloride (Chloromethane)	µg/L	8260B	Semiannually
Methyl ethyl ketone (MEK; 2-Butanone)	µg/L	8260B	Semiannually
Methyl iodide (Iodomethane)	µg/L	8260B	Semiannually
Methyl methacrylate	µg/L	8260B	Semiannually
4-Methyl-2-pentanone (Methyl isobutyl ketone)	µg/L	8260B	Semiannually
Methylene bromide (Dibromomethane)	µg/L	8260B	Semiannually
Methylene chloride (Dichloromethane)	µg/L	8260B	Semiannually
Naphthalene	µg/L	8260B	Semiannually
Propionitrile (Ethyl cyanide)	µg/L	8260B	Semiannually
Styrene	µg/L	8260B	Semiannually
1,1,1,2-Tetrachloroethane	µg/L	8260B	Semiannually
1,1,2,2-Tetrachloroethane	µg/L	8260B	Semiannually
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)	µg/L	8260B	Semiannually
Toluene (1,2,4-Trichlorobenzene)	µg/L	8260B	Semiannually
1,1,1-Trichloroethane (Methylchloroform; TCA)	µg/L	8260B	Semiannually
1,1,2-Trichloroethane	µg/L	8260B	Semiannually
Trichloroethylene (Trichloroethene; TCE)	µg/L	8260B	Semiannually
Trichlorofluoromethane (CFC-11)	µg/L	8260B	Semiannually
1,2,3-Trichloropropane	µg/L	8260B	Semiannually
Vinyl acetate	µg/L	8260B	Semiannually
Vinyl chloride (Chloroethene)	µg/L	8260B	Semiannually
Xylene (Total)	µg/L	8260B	Semiannually
<b>MONITORING PARAMETERS - ANNUALLY ALL WELLS</b>			
Chloride	mg/L	300.0	Annually
Nitrate as Nitrogen	mg/L	353.2	Annually
<b>Standard Minerals</b>			
Calcium	mg/L	200.7	Annually
Magnesium	mg/L	200.7	Annually
Sodium	mg/L	200.7	Annually
Potassium (K)	mg/L	200.7	Annually
Sulfate	mg/L	300	Annually
<b>CONSTITUENTS OF CONCERN (EVERY 5 YEARS ALL WELLS IN ADDITION TO SEMIANNUAL AND ANNUAL CONSTITUENTS)</b>			
<b>Metals (Every 5 Years All Wells)</b>			
Arsenic (total)	mg/L	200.7	5 Years
Copper (total)	mg/L	200.7	5 Years
Lead (total)	mg/L	200.7	5 Years
Mercury (total)	mg/L	200.7	5 Years
Zinc (total)	mg/L	200.7	5 Years
<b>Appendix IX Metals and Minerals (Every 5 Years All Wells)</b>			
Antimony (total)	mg/L	6010	5 Years
Barium (total)	mg/L	6010	5 Years
Beryllium (total)	mg/L	6010	5 Years
Cadmium (total)	mg/L	6010	5 Years
Chromium (total)	mg/L	6010	5 Years
Cobalt (total)	mg/L	6010	5 Years
Cyanide (total)	mg/L	6010	5 Years
Nickel (total)	mg/L	6010	5 Years
Selenium (total)	mg/L	7520	5 Years
Silver (total)	mg/L	7741	5 Years
Sulfide	mg/L	6010	5 Years
Thallium (total)	mg/L	200.7	5 Years
Tin (total)	mg/L	7841	5 Years
Vanadium (total)	mg/L	6010	5 Years

**POST-CLOSURE MAINTENANCE  
AND CORRECTIVE ACTION MONITORING  
BLUE HILLS DISPOSAL FACILITY  
FRESNO COUNTY**

**Table 4(Cont.)  
Corrective Action Program Monitoring Parameters  
Blue Hills Disposal Facility**

Constituent	Units	USEPA Method	Sampling and Analysis Interval
<b>Organo-Chlorine Pesticides (Every 5 Years All Wells)</b>			
alpha-BHC	µg/L	8081/8080	5 Years
beta-BHC	µg/L	8081/8080	5 Years
delta-BHC	µg/L	8081/8080	5 Years
gamma-BHC (Lindane)	µg/L	8081/8080	5 Years
Aldrin	µg/L	8081/8080	5 Years
Chlordane (Technical)	µg/L	8081/8080	5 Years
4,4'-DDD	µg/L	8081/8080	5 Years
4,4'-DDE	µg/L	8081/8080	5 Years
4,4'-DDT	µg/L	8081/8080	5 Years
Dieldrin	µg/L	8081/8080	5 Years
Endosulfan I	µg/L	8081/8080	5 Years
Endosulfan II	µg/L	8081/8080	5 Years
Endosulfan sulfate	µg/L	8081/8080	5 Years
Endrin	µg/L	8081/8080	5 Years
Endrin aldehyde	µg/L	8081/8080	5 Years
Heptachlor	µg/L	8081/8080	5 Years
Heptachlor epoxide	µg/L	8081/8080	5 Years
Methoxychlor	µg/L	8081/8080	5 Years
Toxaphene	µg/L	8081/8080	5 Years
<b>Polychlorinated Biphenyls (Every 5 Years All Wells)</b>			
Aroclor 1016	µg/L	8082/8080	5 Years
Aroclor 1221	µg/L	8082/8080	5 Years
Aroclor 1232	µg/L	8082/8080	5 Years
Aroclor 1242	µg/L	8082/8080	5 Years
Aroclor 1248	µg/L	8082/8080	5 Years
Aroclor 1254	µg/L	8082/8080	5 Years
Aroclor 1260	µg/L	8082/8080	5 Years
<b>Organo-Phosphorus Compounds (Every 5 Years All Wells)</b>			
O,O-Diethyl O-2-pyrazinyl phosphorothioate	µg/L	8141	5 Years
Azinphos methyl	µg/L	8141	5 Years
Bolstar	µg/L	8141	5 Years
Chlorpyrifos	µg/L	8141	5 Years
Coumaphos	µg/L	8141	5 Years
Demeton-O,S	µg/L	8141	5 Years
Diazinon	µg/L	8141	5 Years
Dichlorvos	µg/L	8141	5 Years
Dimethoate	µg/L	8141	5 Years
Disulfoton	µg/L	8141	5 Years
Ethionop	µg/L	8141	5 Years
Fenstuthion	µg/L	8141	5 Years
Fenthion	µg/L	8141	5 Years
Malathion	µg/L	8141	5 Years
Merphos	µg/L	8141	5 Years
Methyl parathion	µg/L	8141	5 Years
Mevinphos	µg/L	8141	5 Years
Naled	µg/L	8141	5 Years
Parathion	µg/L	8141	5 Years
Phorate	µg/L	8141	5 Years
Ronnel	µg/L	8141	5 Years
Stirophos	µg/L	8141	5 Years
Tekuthion	µg/L	8141	5 Years
Trichloronate	µg/L	8141	5 Years
<b>Appendix IX Dioxins and Furans (Every 5 Years All Wells)</b>	ng/L	8280A	5 Years
<b>Appendix IX Phenols (Every 5 Years All Wells)</b>	µg/L	420.2	5 Years
<b>Appendix IX Base Neutral and Acid Extractables (Every 5 Years All Wells)</b>			
Acenaphthene	µg/L	8270C	5 Years
Acenaphthylene	µg/L	8270C	5 Years
Acetophenone	µg/L	8270C	5 Years

POST-CLOSURE MAINTENANCE  
AND CORRECTIVE ACTION MONITORING  
BLUE HILLS DISPOSAL FACILITY  
FRESNO COUNTY

Table 4 (Cont.)  
Corrective Action Program Monitoring Parameters  
Blue Hills Disposal Facility

Constituent	Units	USEPA Method	Sampling and Analysis Interval
2-Acetylaminofluorene	µg/L	8270C	5 Years
4-Aminobiphenyl	µg/L	8270C	5 Years
Aniline	µg/L	8270C	5 Years
Anthracene	µg/L	8270C	5 Years
Benzo(a)anthracene	µg/L	8270C	5 Years
Benzo(a)pyrene	µg/L	8270C	5 Years
Benzo(b)fluoranthene	µg/L	8270C	5 Years
Benzo(g,h,i)perylene	µg/L	8270C	5 Years
Benzo(k)fluoranthene	µg/L	8270C	5 Years
Benzyl alcohol	µg/L	8270C	5 Years
bis(2-chloroethoxy) methane	µg/L	8270C	5 Years
bis(2-chloroethyl) ether	µg/L	8270C	5 Years
bis(2-chloroisopropyl) ether	µg/L	8270C	5 Years
4-Bromophenyl phenyl ether	µg/L	8270C	5 Years
Butylbenzyl phthalate	µg/L	8270C	5 Years
cis-Chlordane	µg/L	8270C	5 Years
p-Chloroaniline	µg/L	8270C	5 Years
Chlorobenzilate	µg/L	8270C	5 Years
p-Chloro-m-cresol (4-Cresol-3-methylphenol)	µg/L	8270C	5 Years
2-Chloronaphthalene	µg/L	8270C	5 Years
2-Chlorophenol	µg/L	8270C	5 Years
4-Chlorophenyl phenyl ether	µg/L	8270C	5 Years
Chrysene	µg/L	8270C	5 Years
Diallate	µg/L	8270C	5 Years
Dibenz(a,h)anthracene	µg/L	8270C	5 Years
Dibenzofuran	µg/L	8270C	5 Years
Di-n-butyl phthalate	µg/L	8270C	5 Years
1,2-Dichlorobenzene	µg/L	8270C	5 Years
1,3-Dichlorobenzene	µg/L	8270C	5 Years
1,4-Dichlorobenzene	µg/L	8270C	5 Years
3,3'-Dichlorobenzidine	µg/L	8270C	5 Years
2,4-Dichlorophenol	µg/L	8270C	5 Years
2,6-Dichlorophenol	µg/L	8270C	5 Years
Diethyl phthalate	µg/L	8270C	5 Years
p-(Dimethylamino) azobenzene	µg/L	8270C	5 Years
7,12-Dimethylbenz(a)anthracene	µg/L	8270C	5 Years
3,3'-Dimethylbenzidine	µg/L	8270C	5 Years
2,4-Dimethylphenol	µg/L	8270C	5 Years
Dimethyl phthalate	µg/L	8270C	5 Years
m-Dinitrobenzene	µg/L	8270C	5 Years
4,6-Dinitro-o-cresol	µg/L	8270C	5 Years
2,4-Dinitrophenol	µg/L	8270C	5 Years
2,4-Dinitrotoluene	µg/L	8270C	5 Years
2,6-Dinitrotoluene	µg/L	8270C	5 Years
Di-n-octyl phthalate	µg/L	8270C	5 Years
Diphenylamine	µg/L	8270C	5 Years
Ethyl methanesulfonate	µg/L	8270C	5 Years
Famphur	µg/L	8270C	5 Years
Fluoranthene	µg/L	8270C	5 Years
Fluorene	µg/L	8270C	5 Years
Hexachlorobenzene	µg/L	8270C	5 Years
Hexachlorocyclopentadiene	µg/L	8270C	5 Years
Hexachloroethane	µg/L	8270C	5 Years
Hexachloropropene	µg/L	8270C	5 Years
Indeno(1,2,3-c,d)pyrene	µg/L	8270C	5 Years
Isophthalene	µg/L	8270C	5 Years
Isosafrole	µg/L	8270C	5 Years
Kepone	µg/L	8270C	5 Years
Methapyrilene	µg/L	8270C	5 Years
Methoxychlor	µg/L	8270C	5 Years
3-Methylchloranthrene	µg/L	8270C	5 Years
Methyl methanesulfonate	µg/L	8270C	5 Years
2-Methylnaphthalene	µg/L	8270C	5 Years
2-Methylphenol (o-Cresol)	µg/L	8270C	5 Years

REVISED MONITORING AND REPORTING PROGRAM NO. 99-087  
 POST-CLOSURE MAINTENANCE  
 AND CORRECTIVE ACTION MONITORING  
 BLUE HILLS DISPOSAL FACILITY  
 FRESNO COUNTY

-12-

Table 4 (Cont.)  
 Corrective Action Program Monitoring Parameters  
 Blue Hills Disposal Facility

Constituent	Units	USEPA Method	Sampling and Analysis Interval
3-Methylphenol (m-Cresol)	µg/L	8270C	5 Years
4-Methylphenol (p-Cresol)	µg/L	8270C	5 Years
1,4-Naphthoquinone	µg/L	8270C	5 Years
1-Naphthylamine	µg/L	8270C	5 Years
2-Naphthylamine	µg/L	8270C	5 Years
2-Nitroaniline	µg/L	8270C	5 Years
3-Nitroaniline	µg/L	8270C	5 Years
4-Nitroaniline	µg/L	8270C	5 Years
Nitrobenzene	µg/L	8270C	5 Years
2-Nitrophenol	µg/L	8270C	5 Years
4-Nitrophenol	µg/L	8270C	5 Years
N-Nitrosodi-n-butylamine	µg/L	8270C	5 Years
N-Nitrosodiethylamine	µg/L	8270C	5 Years
N-Nitrosodimethylamine	µg/L	8270C	5 Years
N-Nitrosodiphenylamine	µg/L	8270C	5 Years
N-Nitrosodipropylamine	µg/L	8270C	5 Years
N-Nitrosomethylethylamine	µg/L	8270C	5 Years
N-nitrosopiperidine	µg/L	8270C	5 Years
N-Nitrosopyrrolidine	µg/L	8270C	5 Years
5-Nitro-o-toluidine	µg/L	8270C	5 Years
Pentachlorobenzene	µg/L	8270C	5 Years
Pentachloronitrobenzene (PCNB)	µg/L	8270C	5 Years
Pentachlorophenol	µg/L	8270C	5 Years
Phenacetin	µg/L	8270C	5 Years
Phenanthrene	µg/L	8270C	5 Years
p-Phenylenediamine	µg/L	8270C	5 Years
Pronamide	µg/L	8270C	5 Years
Pyrene	µg/L	8270C	5 Years
Safrole	µg/L	8270C	5 Years
1,2,4,5-Tetrachlorobenzene	µg/L	8270C	5 Years
2,3,4,6-Tetrachlorophenol	µg/L	8270C	5 Years
o-Toluidine	µg/L	8270C	5 Years
1,2,4-Trichlorobenzene	µg/L	8270C	5 Years
2,4,6-Trichlorophenol	µg/L	8270C	5 Years
2,4,6-Trichlorophenol	µg/L	8270C	5 Years
O,O,O-Triethyl phosphorothioate	µg/L	8270C	5 Years
sym-Trinitrobenzene	µg/L	8270C	5 Years

**POST-CLOSURE MAINTENANCE  
AND CORRECTIVE ACTION MONITORING  
BLUE HILLS DISPOSAL FACILITY  
FRESNO COUNTY**

**Table 13 \***  
**Sample Container Requirements**  
**Corrective Action Program Monitoring Parameters and Constituents of Concern**  
**Blue Hills Disposal Facility**

Parameters	Minimum Volume per Bottle (milliliters)	Minimum Number of Bottles	Container Type	Preservation <sup>1</sup>	Holding Time	Analytical Method <sup>2</sup>
<b>MONITORING PARAMETERS (SEMI-ANNUALLY)</b>						
Total Dissolved Solids	250	1	Plastic	None	7 days	EPA 160.1
Total Organic Carbon	250	1	Glass Amber	H <sub>2</sub> SO <sub>4</sub>	28 days	EPA 415.1
Chlorophenoxy Herbicides	1,000	2	Glass Amber	HCl to pH <2	14 days	EPA 8151
Volatile Organic Compounds	40	3	Glass	HCl to pH <2	14 days	EPA 8260
<b>MONITORING PARAMETERS (ANNUALLY)</b>						
<b>Standard Minerals</b>						
Calcium	250	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Magnesium	250	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Sodium	250	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Potassium	250	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Sulfate	250	1	Plastic	None	28 days	EPA 300.0
Chloride	250	1	Plastic	None	28 days	EPA 300.0
Nitrate as Nitrogen (NO <sub>3</sub> -N)	250	1	Plastic	H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days	EPA 353.2
<b>CONSTITUENTS OF CONCERN (EVERY 5 YEARS)<sup>3</sup></b>						
<b>Metals</b>						
Arsenic	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Copper	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Lead	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Mercury	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
Zinc	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 200.7
<b>Minerals</b>						
Antimony	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Barium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Beryllium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Cadmium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Chromium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Cobalt	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Cyanide	500	1	Plastic	NaOH	14 days	EPA 6010
Nickel	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 7520
Selenium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 7741
Silver	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Sulfide	500	1	Plastic	Zinc Acetate	7 days	EPA 200.7
Thallium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 7841
Tin	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Vanadium	500	1	Plastic	HNO <sub>3</sub> to pH <2	180 days	EPA 6010
Dioxins and Furans	1,000	1	Glass Amber	None	28 days	EPA 8280A
Phenols	500	1	Glass Amber	H <sub>2</sub> SO <sub>4</sub>	28 days	EPA 420.2
Base Neutral and Acid Extractables	1,000	1	Glass Amber	None	7 days	EPA 8270C
<b>Organics</b>						
Organo-Chlorine Pesticides and PCBs	1,000	2	Glass Amber	None	14 days	EPA 8080/8081
Organo-Phosphorus Compounds	1,000	2	Glass Amber	None	7 days extraction 40 days after extraction	EPA 8141A

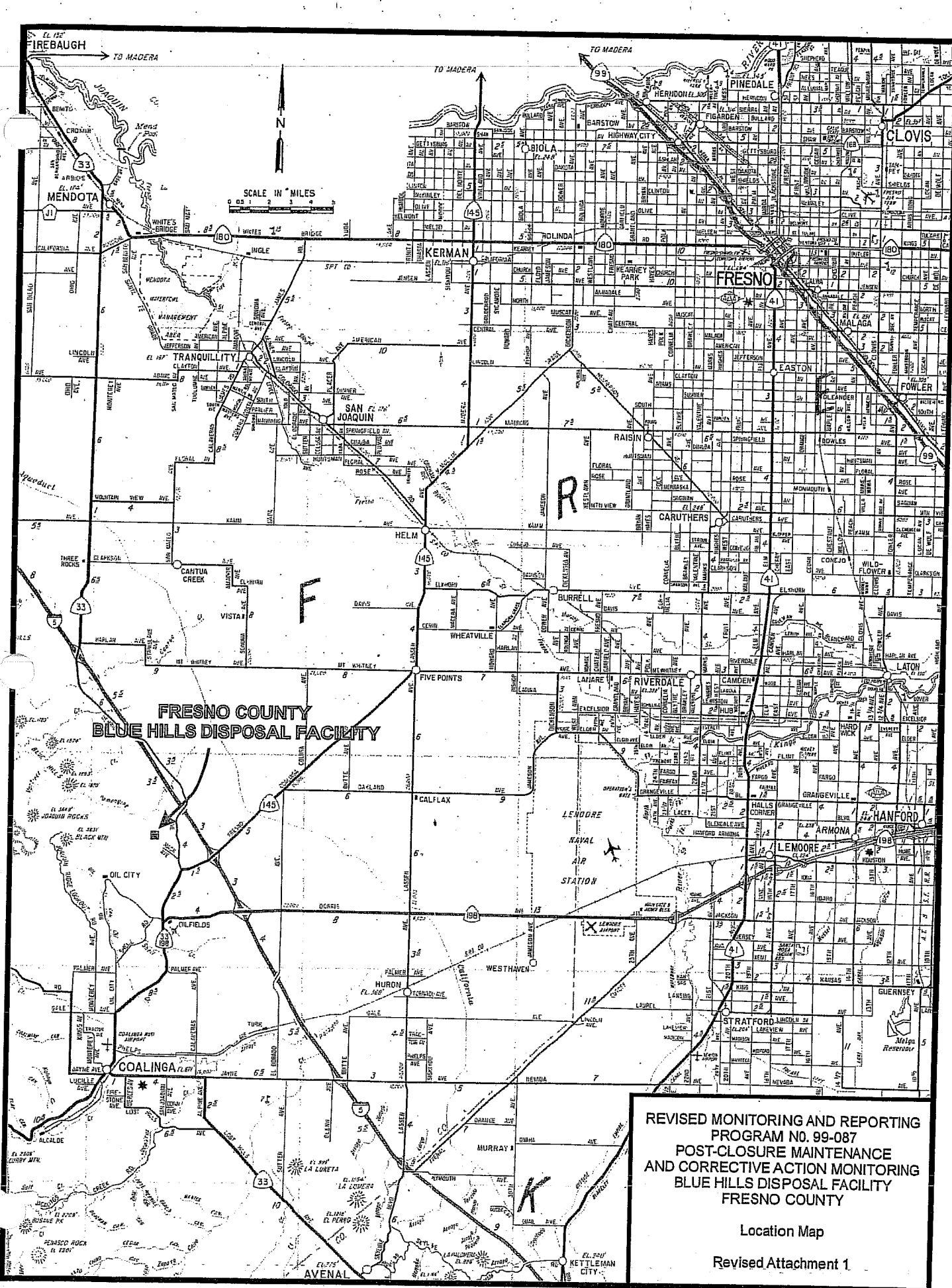
**Notes:**

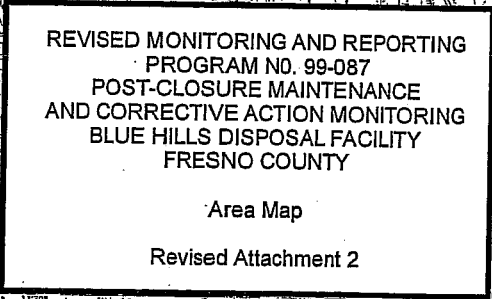
Preservation - Procedures to preserve sample integrity including maintaining samples at 4 °C and using preservatives as indicated: HCl.

Analytical method may be substituted by another approved equivalent US Environmental Protection Agency Method.

Metals are to be field filtered.

\* **ATTACHMENT B**  
Sampling and Analysis  
Plan for Corrective Action





161 3-3 1/2 mi. SW DAVIS, 2 mi. NE  
DRAVING AREA 1-1-61

162 8 1/2 mi. S. of DRAVING AREA 1-1-61  
DRAVING AREA 1-1-61

120-15

ROAD CLASSIFICATION

Primary highway, all weather, light duty road, all weather,  
hard surface \_\_\_\_\_

Secondary highway, all weather, unimproved road, fast dry  
hard surface \_\_\_\_\_

☐ Interstate Route ☐ U. S. Route ☐ State Route

DOMENGINE RANCH, CALIF.  
MAY 1948  
36123-33 1-1-61

1552  
PHOTOGRAPHED 1 1970  
DMA 1206 17 SC-SERIES 1983

QUADANGLE LOCATION

161 3-3 1/2 mi. SW DAVIS, 2 mi. NE  
DRAVING AREA 1-1-61

162 8 1/2 mi. S. of DRAVING AREA 1-1-61  
DRAVING AREA 1-1-61

120-15

ROAD CLASSIFICATION

Primary highway, all weather, light duty road, all weather,  
hard surface \_\_\_\_\_

Secondary highway, all weather, unimproved road, fast dry  
hard surface \_\_\_\_\_

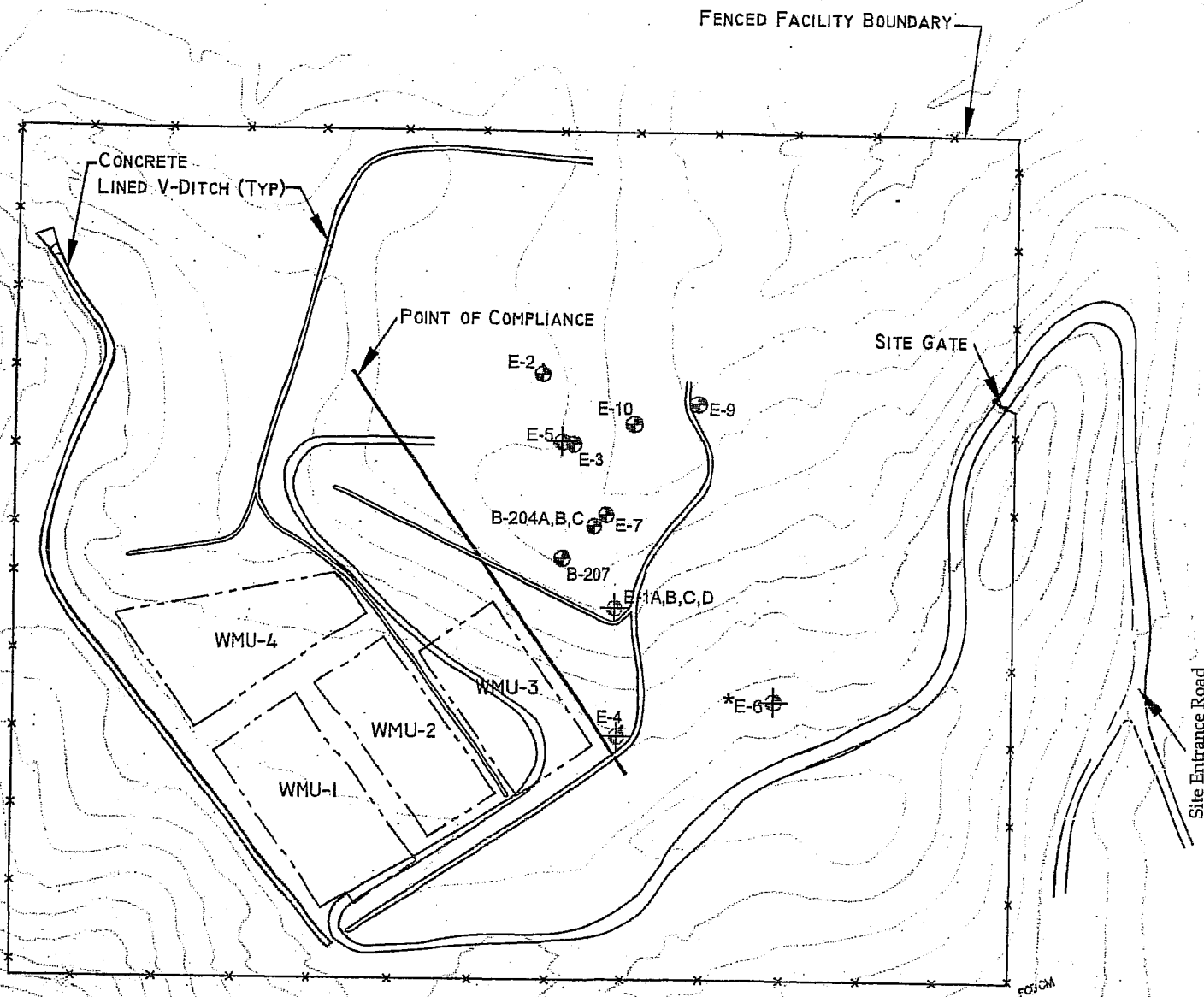
☐ Interstate Route ☐ U. S. Route ☐ State Route

DOMENGINE RANCH, CALIF.  
MAY 1948  
36123-33 1-1-61

1552  
PHOTOGRAPHED 1 1970  
DMA 1206 17 SC-SERIES 1983

QUADANGLE LOCATION





200

400

SCALE IN FEET

### LEGEND

Corrective Action Monitoring Wells

Wells To Be Decommissioned

\*E-6 Well With Tar

REVISED MONITORING AND REPORTING  
PROGRAM NO. 99-087  
POST-CLOSURE MAINTENANCE  
AND CORRECTIVE ACTION MONITORING  
BLUE HILLS DISPOSAL FACILITY  
FRESNO COUNTY

Facility Layout and Well Locations

Revised Attachment 3