

DRAFT
QUALITY ASSURANCE PROJECT PLAN ADDENDUM NO. 1
FOR SAN GABRIEL VALLEY NPL AREA 3
REMEDIAL INVESTIGATION
FIELD ACTIVITIES

SAN GABRIEL BASIN
LOS ANGELES COUNTY, CALIFORNIA

EPA CONTRACT NO. 68-W-98-225
EPA WORK ASSIGNMENT NO. 141-RICO-09ES
CH2M HILL PROJECT NO. 175859.FI.01

Prepared for
U.S. Environmental Protection Agency
Region IX
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October 2004

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U.S. ENVIRONMENTAL PROTECTION AGENCY REGION IX

Plan Title: Draft Quality Assurance Project Plan Addendum No. 1 for San Gabriel Valley NPL Area 3 Remedial Investigation Field Activities
Site Name: NPL Area 3
Site Location: San Gabriel Valley
City/State/Zip: Los Angeles County, California
Site EPA ID#: CAD980818579
Anticipated Sampling Dates: November 2004 to September 2005
Prepared By: Amanda Berens October 2004
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QAPP Approval Date: _____

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Contents

Section	Page
Quality Assurance Project Plan Addendum No. 1 NPL Area 3	1
A. Project Management/Data Quality Objectives.....	1
A.1 Project Organization.....	1
A.2 Problem Definition/Background.....	1
A.3 Project Description and Schedule.....	2
A.4 Data Quality Objectives.....	3
A.5 Special Training Requirements/Certification.....	3
A.6 Documentation and Records.....	3
B. Measurement Data Acquisition.....	3
B.1 Sampling Process Design.....	3
B.2 Sampling Method Requirements.....	6
B.3 Sample Handling and Custody Requirements.....	6
B.4 Analytical Method Requirements.....	6
B.5 Quality Control Requirements.....	6
B.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements.....	7
B.7 Instrument Calibration and Frequency.....	7
B.8 Data Acquisition Requirements (Nondirect Measurements).....	7
B.9 Data Management.....	7
C. Assessment/Oversight.....	7
D. Data Validation and Usability.....	7
D.1 Data Review, Validation, and Verification Requirements.....	7
D.2 Validation and Verification Methods.....	7
D.3 Reconciliation with Data Quality Objectives.....	7
References.....	7

Appendixes

- A San Gabriel Valley NPL Area 3 Remedial Investigation Data Needs
- B DHS 96-Hour Acute Aquatic Toxicity Screening Test

Tables

- A-1 Groundwater Sampling Results
- A-2 Data Needs and Uses – Regulatory Limits for Inorganic Parameters
- A-3 Measurement Performance Criteria
- B-1 Proposed Screen Intervals for the Conventional and MP Monitoring Wells

Figure

- A-1 Area 3 Project Organization

Quality Assurance Project Plan Addendum No. 1

NPL Area 3

This Quality Assurance Project Plan (QAPP) Addendum No. 1 provides supplemental information for field and laboratory activities associated with remedial investigation (RI) activities for National Priorities List (NPL) Area 3 of the San Gabriel Valley Superfund Site in Los Angeles County, California (Area 3). This work is being performed for the U.S. Environmental Protection Agency (EPA) under EPA Contract No. 68-W-98-225 and EPA Work Assignment No. 141-RICO-09ES.

Because this QAPP Addendum is a supplement to an existing, detailed QAPP, not all sections are included as required in the *EPA Guidance for Quality Assurance Project Plans* (EPA, 1998) and *EPA Requirements for Quality Assurance Project Plans* (EPA, 1999). Where required information would be repetitive, the original QAPP is referenced. The installation of one conventional, one cluster, and three multiport (MP) groundwater monitoring wells and subsequent initial and quarterly groundwater sampling through January 2005 was described in the February 2003 Field Sampling Plan (FSP) and QAPP for NPL Area 3, and was approved by the EPA Region IX Quality Assurance Office (QAO). This QAPP Addendum was prepared to describe the installation of two additional conventional and one additional MP groundwater monitoring well(s). This QAPP Addendum also describes associated initial groundwater sampling, and quarterly groundwater sampling at all existing and new groundwater monitoring wells as well as two production wells from February through August 2005.

A. Project Management/Data Quality Objectives

A.1 Project Organization

Project organization and the line of authority for CH2M HILL efforts are illustrated in Figure A-1. Data users and recipients are shown in Figure A-2 of the original QAPP (EPA, 2003b). Both EPA and CH2M HILL technical personnel and quality assurance personnel are shown.

A.2 Problem Definition/Background

A.2.1 Purpose

This QAPP Addendum presents supplemental information to the policies, organizations, objectives, and functional activities/procedures associated with the RI sampling and analysis activities at the San Gabriel Valley NPL Area 3 described in the QAPP (EPA, 2003b). Data quality objectives (DQOs) (EPA, 1994) can be found in Appendix A of the QAPP (EPA, 2003b).

A.2.2 Problem Statement/Background

EPA installed one conventional (MW1-1), one cluster (MW1-2A and MW1-2B), and three MP (MW1-3, MW1-4, and MW1-5) groundwater monitoring wells in Area 3 in 2003. Quarterly groundwater samples have been collected from the wells between March 2003 and August 2004. Based on these sampling results, routine production well sampling results, and facility groundwater monitoring well sampling results, areas of predominantly trichloroethene (TCE), tetrachloroethene (PCE), and 1,2,3-trichloropropane (1,2,3-TCP) contamination have been delineated.

Table A-1 summarizes water quality data for the existing RI monitoring wells in Area 3. The horizontal and vertical extent of contamination thus far delineated is described in more detail in the *San Gabriel Valley NPL Area 3 Remedial Investigation Data Needs* memorandum (CH2M HILL, 2004), included as Appendix A. Figure 1 of Appendix A illustrates the distribution of volatile organic compounds (VOCs) detected in shallow and deep groundwater wells in Area 3, along with the locations of existing RI monitoring wells.

To date, little site assessment work by potentially responsible parties (PRPs) has been conducted in Area 3. However, at the request of EPA, the Los Angeles Regional Water Quality Control Board (LARWQCB) has increased efforts to identify the potential sources of VOC contamination detected in groundwater in Area 3. Currently, groundwater monitoring data are available at six sites within Area 3: the Temple City Sheriff's Station and Norge Village Cleaners, located in the eastern portion of Area 3, and Reidon, Inc., Pemaco, Ideal Wire Works, and Charter Communications, located in the southwestern portion of Area 3.

A.2.3 Data Needs and Uses

Data needs and uses for the objectives described in this section have been identified through the DQO process presented in Appendix A of the QAPP (EPA, 2003b) and are summarized in Tables A-2A (organics) and A-2B (inorganics) of the QAPP (EPA, 2003b). Supplemental data needs and uses for analytes not included in the QAPP (EPA, 2003b) are summarized in Table A-2. The rationale for sampling for each group of analytes is described in the *San Gabriel Valley NPL Area 3 Remedial Investigation Data Needs* memorandum (CH2M HILL, 2004), included as Appendix A.

Table A-2 presents a comprehensive listing of regulations reviewed and identifies the applicable regulation(s). These regulatory limits were taken into consideration in selecting appropriate methods and reporting levels as described in Section A.4.2 of the QAPP (EPA, 2003b) and summarized in Table A-3.

A.3 Project Description and Schedule

A.3.1 Description of Work to be Performed

Groundwater samples will be collected during the RI field activities from new and existing conventional, cluster, and MP monitoring wells. In addition, groundwater samples will be collected from two existing production wells. Multiple rounds of groundwater samples will be obtained. In addition, samples of investigation-derived wastes will be collected, including drill cuttings and drilling mud, and well development and purge water.

A.3.2 Schedule of Activities

Sampling of investigation-derived wastes is expected to begin in January 2005, will occur periodically, and will last through February 2005. Initial groundwater samples will be collected at newly installed monitoring wells in January 2005 and February 2005. Quarterly groundwater sampling at existing and new monitoring wells and production wells is expected to start in February 2005 and will last through August 2005.

A.4 Data Quality Objectives

The DQOs are described in Section A.4 of the QAPP (EPA, 2003b).

A.5 Special Training Requirements/Certification

All project staff working on the site must be health and safety trained, and must follow requirements specified in the Health and Safety Plan (HSP) of the project, which can be found in Appendix C of the companion FSP Addendum No. 1 (EPA, 2004). The HSP describes the specialized training required for personnel on this project and the documentation and tracking of this training.

A.6 Documentation and Records

Field documentation and records will be as described in Section B of the QAPP (EPA, 2003b) and Section 6 of the FSP (EPA, 2003a).

B. Measurement Data Acquisition

This section presents sampling process design and requirements for sampling methods, sampling handling and custody, analytical methods, quality control (QC), and instrumentation for the sampling activities that will be conducted as a part of an RI in Area 3. Data acquisition requirements and data management for these sampling events are also addressed in this section.

B.1 Sampling Process Design

The sampling process design is detailed below.

B.1.1 Background

EPA installed one conventional (MW1-1), one cluster (MW1-2A and MW1-2B), and three MP (MW1-3, MW1-4, and MW1-5) groundwater monitoring wells in Area 3 in 2003. Quarterly groundwater samples have been collected from the newly installed wells between March 2003 and August 2004. Based on these sampling results, routine production well sampling results, and facility groundwater monitoring well sampling results, areas of predominantly TCE, PCE, and 1,2,3-TCP contamination have been delineated. The field activities described in this QAPP Addendum are intended to result in data that can be used to refine the preliminary site conceptual model sufficiently so that it can be used to support: (1) preparation of a Feasibility Study (FS) for the Area 3 Operable Unit (OU) and selection of a remedy (i.e., Record of Decision), and (2) identification by EPA of PRPs who would perform the FS and remedial action.

As part of the RI field activities discussed in this FSP Addendum, one MP (MW1-6) and two conventional (MW1-7 and MW1-8) monitoring wells will be installed to further assess the lateral and vertical extent of contamination and hydrogeology in Area 3, and to further identify potential contaminant source areas. Initial groundwater samples will be collected at new groundwater monitoring wells, and quarterly groundwater samples will be collected at new and existing groundwater monitoring wells as well as two existing production wells in Area 3.

The sampling process design for investigation-derived wastes and quarterly monitoring in Area 3 includes the schedule of analyses and rationale for sampling design, as described in detail below.

B.1.2 Schedule of Analyses

The analytes scheduled for the RI field program are presented in Table A-3 of the QAPP (EPA, 2003) and in Table A-3 of this QAPP Addendum. Analytical services for all samples collected from the monitoring and production wells will be submitted for analysis to the EPA Region IX Analytical Program and to private laboratories under subcontract to CH2M HILL as described in Section B.4 of the QAPP (EPA, 2003b).

Sampling of investigation-derived wastes is expected to begin in January 2005, will occur periodically, and will last through February 2005.

An initial groundwater sampling event for VOCs will be conducted within approximately 2 weeks after completion of each monitoring well. It is anticipated that the initial sampling event will occur in two phases: one for MP well MW1-6 during January 2005 and one for conventional wells MW1-7 and MW1-8 during February 2005. Ongoing groundwater sampling events for new and existing monitoring wells as well as two existing production wells will be conducted on a quarterly basis for VOCs for 6 months, for a total of two quarterly sampling events, with the last event occurring in August 2005.

During the second quarterly sampling event at the new wells, anticipated to take place in August 2005, additional groundwater sampling will be conducted at each well for dissolved metals, semivolatile organic compounds (SVOCs), n-nitrosodimethylamine (NDMA), perchlorate, nitrate, 1,4-dioxane, hexavalent chromium, and 1,2,3-TCP. Additional or continued sampling for these analytes will depend on the results of the second quarterly sampling event. For example, one additional confirmation sample will be collected if an analyte is detected in a well. Existing RI monitoring wells will be sampled for VOCs only during the second quarterly sampling event.

It is likely that quarterly sampling will occur beyond the two events described in this QAPP Addendum. However, these activities will be conducted on a new work assignment.

B.1.3 Rationale for Sampling Design

The rationale for the sampling design is detailed in the subsections below.

Groundwater Monitoring

Sampling Locations. Figure 1 in Appendix A shows the locations of the proposed conventional and MP monitoring wells and proposed production well sampling locations

(01900547 and 01902979) in Area 3. Proposed screen intervals for conventional and MP monitoring wells are shown in Table B-1. Note that there are several screen intervals at the MP monitoring well location.

The conventional wells (MW1-7 and MW1-8) are located in the western portion of Area 3 to collect groundwater data between existing production wells with VOC contamination toward the east and suspected sources in the west.

The proposed MP well (MW1-6) will be installed between the contamination source area identified near the Temple City Sheriff's Station and downgradient production wells impacted with PCE. The proposed MP well will be constructed with seven depth discrete groundwater sampling intervals. Groundwater data collected from the MP well will be used to assess the lateral and vertical nature and extent of this contamination.

The rationale for the proposed conventional and MP well locations and screen intervals is described in the *San Gabriel Valley NPL Area 3 Remedial Investigation Data Needs* memorandum (CH2M HILL, 2004), included as Appendix A.

The two existing production wells are located at the San Gabriel Valley Country Club and are used to irrigate the golf course. Most production wells in Area 3 are sampled approximately annually. Groundwater samples have not been previously collected at production well 01900547 and have not been collected at production well 01902979 since 1987. These production wells have narrow screen intervals compared to other production wells in Area 3. Therefore, samples from these wells will provide current water quality data from relatively specific depths.

Number of Samples. An initial groundwater sampling event will be conducted at new RI monitoring wells roughly 2 weeks after the completion of each monitoring well. Ongoing groundwater sampling events will be conducted on a quarterly basis at new and existing RI monitoring wells and proposed production well sampling locations for the remainder of a 6-month period, for a total of two quarterly sampling events. The quarterly sampling events at existing RI monitoring wells will be for VOCs. For new RI monitoring wells, the first quarterly groundwater sampling event will be for VOCs and the second quarterly groundwater sampling event will be for the expanded analyte list (VOCs, dissolved metals, SVOCs, NDMA, perchlorate, nitrate, 1,4-dioxane, hexavalent chromium, and 1,2,3-TCP). These sampling events will be used to evaluate temporal changes in the nature and extent of VOC contamination in Area 3 that might be related to groundwater production, evaluate any exceedances of regulatory limits, assist in identifying contaminant source areas, and assess the need for continued monitoring or future treatment. Future sampling for the expanded analyte list will depend on the results of the second quarterly sampling event at the new wells. At least one additional confirmation sample will be collected if the analyte is detected.

Groundwater sampling at production wells 01900547 and 01902979 will occur contemporaneous with quarterly monitoring well sampling for a total of two quarterly events. The schedule for groundwater sampling at the production wells will be coordinated with the San Gabriel Valley Country Club to occur while the wells are in use. The production well groundwater samples will be analyzed for the same analytes as the new monitoring wells.

Quality assurance (QA) sampling is described in Section B.1.3 of the QAPP (EPA, 2003b).

It is likely that quarterly sampling will occur beyond the two events described in this QAPP Addendum. These activities will be conducted on a new work assignment.

Laboratory Analyses. Analysis of VOCs with low-detection limits will be used to assess the magnitude of groundwater contamination in the monitoring and production wells and to determine whether any of the VOCs detected exceed regulatory limits. Sampling for VOCs will be included in each of the sampling events. In addition, sampling for dissolved metals, SVOCs, NDMA, perchlorate, nitrate, 1,4-dioxane, hexavalent chromium, and 1,2,3-TCP will be conducted at new monitoring wells as well as two San Gabriel Valley Country Club production wells during one sampling event to evaluate exceedances of regulatory limits and to assess the need for continued monitoring or future treatment for these analytes. The rationale for these analyses is described in the FSP (EPA, 2003a).

Investigation-Derived Wastes

Investigation-derived waste sampling is described in Section 4.2 of the FSP (EPA, 2003a). Drill cuttings and drilling mud samples previously collected during field investigation activities at Area 3 indicated an elevated pH due to the installation of cement seals during well construction. Therefore, in addition to the investigation-derived waste sampling described in the QAPP (EPA, 2003b), the drill cuttings and drilling mud may be analyzed for California Department of Health Services (DHS) 96-hour acute aquatic toxicity, according to local landfill requirements for samples with elevated pH.

A quick turnaround time (7 days) will be necessary for characterization and disposal of the drill cuttings and drilling mud to avoid costs associated with long-term storage of the wastes.

Purge water from the sampling of production wells will be used by San Gabriel Valley Country Club as irrigation water for the golf course. Therefore, samples for purge water disposal will not be collected.

B.2 Sampling Method Requirements

Sampling method requirements are described in Section 6 of the FSP (EPA, 2003a).

B.3 Sample Handling and Custody Requirements

Sample handling and custody requirements are described in Section B.3 of the QAPP (EPA, 2003b).

B.4 Analytical Method Requirements

Analytical method requirements are described in Section B.4 of the QAPP (EPA, 2003b).

B.5 Quality Control Requirements

QC requirements are described in Section B.5 of the QAPP (EPA, 2003b).

B.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Instrument/equipment testing, inspection, and maintenance requirements are described in Section B.6 of the QAPP (EPA, 2003b).

B.7 Instrument Calibration and Frequency

Instrument calibration and frequency requirements are described in Section B.7 of the QAPP (EPA, 2003b).

B.8 Data Acquisition Requirements (Nondirect Measurements)

Data acquisition requirements (nondirect measurements) are described in Section B.8 of the QAPP (EPA, 2003b).

B.9 Data Management

Data management is described in Section B.9 of the QAPP (EPA, 2003b).

C. Assessment/Oversight

Assessment and oversight actions are described in Section C of the QAPP (EPA, 2003b).

D. Data Validation and Usability

D.1 Data Review, Validation, and Verification Requirements

Data review, validation, and verification requirements are described in Section D.1 of the QAPP (EPA, 2003b). Investigation-derived waste analytical batches will be reviewed for specified analytical parameters for detections and nondetections, at Tier 1, as defined by the regional EPA QAO guidance. Data validation results will be submitted with final analytical data to facilitate disposal of the investigation-derived wastes.

D.2 Validation and Verification Methods

Validation and verification methods are described in Section D.2 of the QAPP (EPA, 2003b).

D.3 Reconciliation with Data Quality Objectives

Reconciliation with DQOs is described in Section D.3 of the QAPP (EPA, 2003b).

References

U.S. Environmental Protection Agency. 1992. *Interim San Gabriel Basin Remedial Investigation Report, Los Angeles County, California*. Prepared by CH2M HILL. June 15.

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Figure

Figure A-1

Tables

Table A-1 Groundwater Sampling Results

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Page 1 of 2

TABLE A-2

Data Needs and Uses – Regulatory Limits for Inorganic Parameters

Inorganic Parameter	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable or Relevant and Appropriate Requirements (ARAR) ⁽²⁾	California DHS DLR (µg/L) ⁽³⁾	Additional ARARs (µg/L)
Groundwater and Well Development Water					
Perchlorate ⁽¹⁾	Define nature and extent of contamination Compare data to Federal and State drinking water standards Assess source of contaminants Assess need for monitoring or treatment	6	CA DHS State Action Level ⁽⁴⁾	6	1 ⁽⁵⁾
Investigation-Derived Waste					
Drill Cuttings and Drilling Mud:					
DHS 96-Hour Acute Aquatic Toxicity screening Test	Compare to Federal, State and TSDF-specific limits for proper disposal.	Not Applicable	Landfill-specific	NA	LC50 < 500 mg/L ⁽⁶⁾

NOTES:

(1) Perchlorate is included in Table 2B of the QAPP (EPA, 2003b). Perchlorate is included in this QAPP Addendum No. 1 because the applicable regulatory limit has changed since the QAPP (EPA, 2003b) was finalized.

(2) Applicable or Relevant and Appropriate Requirements (ARARs) from August 2000 California EPA Compilation of Water Quality Goals and Updates through November 2001.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) California Department of Health Services State Action Level for toxicity.

(5) Per EPA revised draft toxicity assessment.

(6) California Code of Regulations, Title 22, Article 3, Section 66261.24(a)(6).

TABLE A-3
Measurement Performance Criteria

Parameter	Method	Reporting Limit/Target Detection Limit	Analytical Accuracy (% Recovery)	Analytical Precision (Relative % Deviation)	Overall Completeness (%)
Investigation-Derived Waste Drill Cuttings and Drilling Mud:					
DHS 96-Hour Acute Aquatic Toxicity Screening Test	Cal-DHS ^a	NA	NA	NA	90

Notes:

^a A project Standard Operating Procedure (SOP) is provided in Appendix B as this analyte may be analyzed by laboratories other than the EPA regional laboratory.

TABLE B-1
Proposed Screen Intervals for Conventional and Multiport Monitoring Wells

Well Name	MW1-6	MW1-7	MW1-8
Well Type	Multiport	Conventional	Conventional
Screen Intervals (feet bgs)	270-290 350-360 440-450 520-530 600-610 680-690 770-780	270-290	270-290

Appendix A
San Gabriel Valley NPL Area 3 Remedial Investigation
Data Needs

Appendix B
DHS 96-Hour Acute Aquatic Toxicity Screening Test
