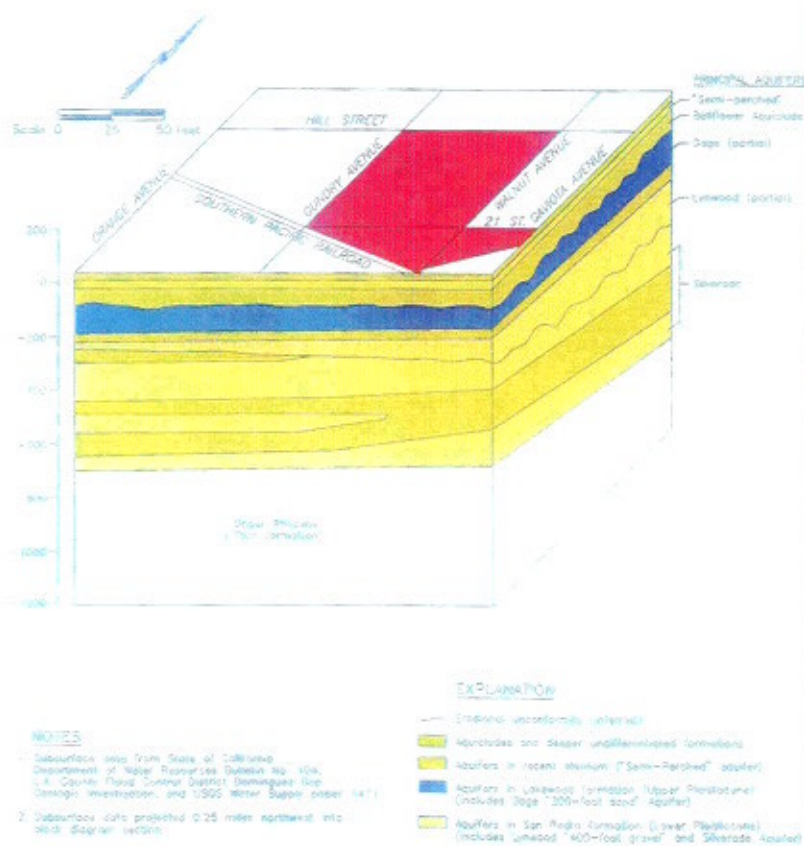


**REPORT ON PHASE I
ADDITIONAL SITE CHARACTERIZATION
JANUARY 2009
FORMER CHEMOIL REFINERY
SLIC No. 453A
SIGNAL HILL, CALIFORNIA**



Prepared for:

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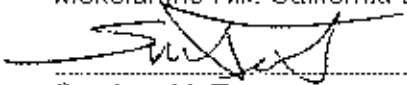
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REPORT ON PHASE I ADDITIONAL SITE CHARACTERIZATION JANUARY 2009 Former Chemoil Refinery Signal Hill, California SLIC No. 453A



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January 15, 2009

California Regional Water Quality Control Board –
Los Angeles Region
420 West Fourth Street, Suite 200
Los Angeles, CA 90013

Attention: Ms. Ann Lin

Subject: Report on Phase I
Additional Site Characterization
January 2009
Former Chemoil Refinery
Signal Hill, California
SLIC No. 453A
Project No. 94-11-1008.62

Dear Ms. Lin:

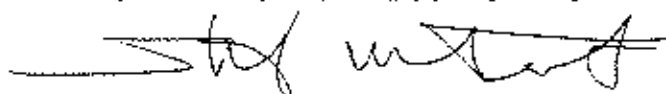
On behalf of Signal Hill Holding Corporation, presented herewith is Testa Environmental Corporation's (TEC) report on the quarterly gauging and groundwater quality monitoring program performed in December 2008, at the former Chemoil refinery site, Signal Hill, California. The work discussed herewith reflects the request of the California Regional Water Quality Control Board – Los Angeles Region (CRWQCB-LAR) for quarterly monitoring and sampling as set forth in their letter dated September 12, 2001. Included is discussion of site description and history, field and laboratory methodology, subsurface hydrogeologic conditions, groundwater quality, and planned activities, as appropriate. Former agency correspondence, annotated hydrographs showing fluctuations of water levels with time, analytical reports for groundwater, and graphs showing fluctuations of dissolved hydrocarbon constituents with time are also provided in their respective appendices.

During the next quarterly reporting period, several activities are planned including groundwater gauging and sampling scheduled to be performed in March 2009, with the report to be submitted by April 15 2009.

Should you have any questions, or require further clarification pertaining to the contents of this report, please do not hesitate to contact us.

Very truly yours,

TESTA ENVIRONMENTAL CORPORATION



Stephen M. Testa
President, CEG No. 1613

cc: Mr. Harrison Chang, Signal Hill Holding Corporation
Mr. Rick McAuley, MPO Walnut Partners, LLP,

**REPORT ON PHASE I ADDITIONAL SITE CHARACTERIZATION
JANUARY 2009
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

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**REPORT ON PHASE I ADDITIONAL SITE CHARACTERIZATION
JANUARY 2009
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

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1.0 EXECUTIVE SUMMARY

Subsurface environmental-related activities have been performed at the Signal Hill Holding Corporation (SHHC) former refinery site located in Signal Hill, California, since 1985, with a hiatus from monitoring between July 1999 and October 2001. On behalf of SHHC, Testa Environmental Corporation (TEC) re-initiated quarterly groundwater quality monitoring at the former Chemoil refinery site in 2001. This activity was performed in accordance with the California Regional Water Quality Control Board – Los Angeles Region's (CRWQCB-LAR) correspondence dated September 12, 2001.

Activities performed during this quarterly reporting period (October, November and December, 2008) included gauging of subsurface fluid levels, and chemical testing of representative groundwater samples retrieved from all operable monitoring wells. In addition, the following tasks were performed in accordance with the workplan prepared by TEC dated October 12, 2008: 1) confirmation of responsible party(ies) 2) re-evaluation of overall groundwater flow directions, 3) rehabilitation of damaged former recovery wells R-4, R-5, and R-6, and former groundwater monitoring well MW-7, or recommendation for abandonment and replacement, and 4) additional chemical testing of groundwater samples for Total Petroleum Hydrocarbons as diesel (TPHd) using a silica gel cleanup. Based on the results presented herein, a Phase II workplan was developed which is presented under separate cover.

The site is underlain by deposits of unconsolidated, stratified, laterally discontinuous sequences of predominantly coarse-grained soil consisting of sand and silty sand, with subordinate fine-grained soils consisting predominantly of silt and to a lesser degree clay. Groundwater occurs under unconfined piezometric conditions. As of December 2008, overall groundwater elevations generally decreased (decreased) from about up to 1.2 feet as measured in well MW-8, in comparison to elevations gauged in September 2008. Beneath the Western Parcel, groundwater occurred at elevations of 4.41 and 6.02 feet relative to mean sea level, respectively (depths ranging from 21.50 to 42.00, respectively), as measured in wells MW-8 and MW-3, respectively. Beneath the Eastern Parcel, groundwater was encountered at elevations of 4.49 and 4.40 feet (i.e., depths of 25.50 to 27.20 feet) as measured in wells MW-2 and MW-10, respectively. Groundwater flow beneath the entire site was generally toward the south, with a slight southwest and southeast component beneath the southern portion of the site. The hydraulic gradient is about 0.003 ft/ft, or less. Re-calculation of past flow directions, following re-establishment of top-of-casing elevations in January 2008, show overall groundwater flow to be consistently toward the south, with an occasional southeast and/or southwest component.

No Light Non-aqueous phase liquid (LNAPL) hydrocarbons were encountered during gauging and sampling of the wells. Several dissolved organic constituents were reported in groundwater samples retrieved from all five wells beneath the Western Parcel in December 2008. The concentration of certain dissolved hydrocarbon constituents were generally consistent in comparison with results reported in September 2008. Concentrations of TPHd, TPHd using a silica gel cleanup, and TPH as gasoline, are summarized below. TPHd beneath the Western Parcel ranged from 0.48 to 7.6 mg/L, in wells MW-3 and MW-9, respectively. TPHd using a silica gel cleanup ranged from non-detect (<0.2) to 1.3 mg/L (MW-9). These data confirm that most of the materials being measured in groundwater as "TPHd" are polar non-hydrocarbons likely resulting from intrinsic biodegradation of the petroleum. The TPHd with silica gel cleanup more closely represents the concentrations of dissolved petroleum hydrocarbons in the groundwater. TPHg was reported at concentrations of 0.25, 1.6, 1.3 and 4.9 mg/L for wells MW-1, MW-1A, MW-8 and MW-9, respectively. BTEX was reported for well MW-9 at concentrations of 160, non-detect, 32 and 50 ug/L, respectively. No MTBE or Tert-Butanol was reported at levels greater than their analytical respective detection limit.

Six other petroleum-related dissolved VOCs and/or SVOCs were reported. These constituents and their respective concentration reported, and associated wells, were:

<u>Volatile Organic Compounds</u>	<u>Concentration (ug/L)</u>
n-Butylbenzene	5.6 (MW-9)
Isopropylbenzene	68 (MW-9)
2-Methylnaphthalene	12 (MW-1A)
Naphthalene	74 (74) (MW-9)
n-Propylbenzene	59 (MW-9)
1,2,4-Trimethylbenzene	100 (MW-9)

Efforts to rehabilitate former LNAPL recovery wells R-4, R-5 and R-6, and former groundwater monitoring well MW-7, were not successful and such wells will require abandonment, and subsequent replacement.

The next quarterly groundwater gauging and sampling event is scheduled to be performed in March 2009, with the subsequent report provided as part of the Phase II Additional Characterization Report. This report is anticipated to be submitted to CRWOCB-LAR by March 2, 2009.

2.0 INTRODUCTION

2.1 Site Description

The former Chemoil refinery site is located in the city of Signal Hill, California (Figure 2-1). Prior to Chemoil acquiring the refinery site, the refinery was previously known as the MacMillan-Ring Free refinery. MacMillan Ring Free operated the refinery and associated facilities from 1922 until August, 1988. Following purchase of the refinery by the Chemoil Corporation in 1988, SHHC took control of the site in the late 1990s; the exact date is currently being researched.

The former refinery site is divided into two main parcels: the Western Parcel and the Eastern Parcel. The Western Parcel is situated immediately west of Walnut Avenue, whereas the Eastern Parcel is situated immediately east of Walnut Avenue. The Western Parcel is further divided into three subparcels: two subparcels situated in the northern portion of the site, and a southern subparcel. A figure showing the various parcels and subparcels, and former layout of specific operational units, is presented in Figure 2-2.

The Western Parcel encompasses approximately 5.7 acres. The northern portion of the Western Parcel, or northern subparcel, is further subdivided into two parts. The western part faces Gundry Avenue and is rectangular in shape, and encompasses approximately 0.53 acres and is 150 x 154.5 feet. A scale house and a part of a truck scale previously occupied this area, in part. The eastern part is also rectangular in shape, faces Walnut Avenue, and encompasses approximately 0.75 acres and is 125 x 261 feet. This area was previously occupied by a scale house, several warehouses, truck scale, and a crude oil unloading rack.

The southern portion of the Western Parcel, or southern subparcel, encompasses approximately 4.42 acres, and is further divided into two sections separated by 21st Street. The north section is rectangular in shape and formerly included a warehouse, inspection lab, truck loading racks, about 40 above ground storage tanks, and piping. The south section is triangular in shape and formerly included about 25 above ground storage tanks, boilers, heater units, loading racks, desalter and cooling tower.

The Eastern Parcel encompasses approximately 2.5 acres. Somewhat rectangular in shape with exception of its southern perimeter, the site was formerly occupied by six above ground storage tanks (Nos. 15, 14, 11, 3, 504 and 230). These tanks were reportedly used for the storage of heavy crude oil. An adjoining office, maintenance, truck washing and repair structure, supervisor's office, and adjoining laboratory and warehouse facility, also formerly occupied the site.

In the vicinity of the site, surface water flow is depicted by the City of Signal Hill Public Works Department as toward the south-southwest. In regards to land use, the site is situated in what is referred to as the Civic Center Neighborhood (Signal Hill General Plan, Land Use Element, 2001). Within a few tens of feet to the south of the site is existing residential use areas within the City of Long Beach (Figure 2-3).

2.2 Responsible Party(ies)

The former Chemoil refinery site consists of an Eastern Parcel and Western Parcel; the latter is further divided into a northern and southern subparcel. In addition, in total, there are eighteen subparcels with specific chain of title histories.

SHHC currently owns the entire Eastern Parcel, the entire northern subparcels of the Western Parcel, and only portions of the southern subparcel of the Western Parcel. SHHC is in the process of determining the responsible parties, including among other things, researching the chain of title on the parcels and discussing responsibility with prior owners and adjacent owners. SHHC will notify CRWQCB-LAR promptly after such determination has been made. Specific parcels for which chain of titles are currently being determined is provided in Figure 2-4.

2.3 Site History

Prior to 1922, the property was used as a dairy farm. From 1922 to 1988, the facility was solely owned and operated by the MacMillan Ring-Free Oil Company. Chemoil purchased the former refinery in August 1988, and operated it until February 14, 1994, when the refinery was shut down with occasional operation of its waste water system. Since early 1997, operation of the waste water system was discontinued, and all of the above ground structures were dismantled. The oldest active area lies within the triangular (southwest) portion of the Western Parcel formed by the intersection of Walnut Avenue, 21st Street and the Southern Pacific Railroad right-of-way. The oldest operations occurred in the northeast corner of this area where crude oil processing related activities took place.

2.4 Regulatory Background

Subsurface environmental-related activities have been performed since 1985. A listing of prior reports submitted to the CRWQCB-LAR is tabulated in Table 2-1. Meetings with the CRWQCB-LAR to discuss site closure related-issues were initiated in 1998, with agency correspondence provided in Appendix A. Discussions dealing strictly with the Eastern Parcel initiated in 1999 with the submittal to the CRWQCB-LAR of a "Workplan for Closure Sampling at the East Parcel" by The Source Group dated September 23, 1999 (TSG, 1999). The actual work discussed in this workplan was performed, although to our knowledge, no formal report was ever produced by TSG.

Further discussions were held between Chemoil, TEC and the CRWQCB-LAR on August 30, 2001. During this meeting, the CRWQCB-LAR indicated that they would consider site closure, or partial site closure, of the Eastern Parcel and possibly other portions of the former refinery site, provided further assessment, among other activities, was performed. The quarterly groundwater quality gauging and monitoring program was resumed as noted in the CRWQCB-LAR's letter dated September 12, 2001 (Appendix A). In addition, a proposed workplan titled "Proposal for Subsurface Assessment, Eastern Parcel, Former Chemoil Refinery," dated September 4, 2001 was prepared and submitted to the CRWQCB-LAR for review and comment prior to implementation (TEC, 2001a). Following review and minor modifications as noted in the CRWQCB-LAR's correspondence dated September 19, 2001 (Appendix A), additional subsurface assessment activities were performed as prescribed in the September 4, 2001, workplan (TEC, 2001c). A revised Remedial Action Plan prepared and subsequently approved by the CRWQCB-LAR (TEC, 2002a). However, such Remedial Action Plan was not subsequently implemented.

A workplan dated November 18, 2001, was also prepared to address the need for additional subsurface assessment to be performed at the Western Parcel (TEC, 2001b). Following comments received from the CRWQCB-LAR in their letter dated January 8, 2002, a revised workplan dated July 24, 2002, was prepared which included responses to 14 comments set forth by the CRWQCB-LAR (TEC, 2002b). The scope of work outlined in this workplan was not performed. Since July 2002, quarterly groundwater gauging and sampling has been performed.

A limited subsurface site characterization was performed by parties interested in purchasing this site. This characterization was performed during May and June, 2006. The soil and water quality data generated was compiled and subsurface conditions re-assessed in light of this information. This information has been incorporated into the existing subsurface data base for this site.

A revised proposed workplan dated October 12, 2008, was prepared by TEC and submitted to the CRWQCB-LAR. The purpose of the proposed workplan was to address various outstanding issues and data gaps, necessary in order to formulate a closure strategy for the site.

The report contained herein addresses overall groundwater conditions beneath both the Western and Eastern Parcels for the quarterly reporting period of October, November and December, 2008. The former groundwater monitoring network comprised 11 wells: eight groundwater monitoring wells (MW-1, MW-1A, MW-2, MW-3, MW-7, MW-8, MW-9 and MW-10) and three former LNAPL recovery

wells (R-4, R-5 and R-6). Certain wells have since been damaged during past demolition and dismantling activities or vandalized (wells R-4, R-5, R-6, and MW-7). The overall monitoring network currently incorporates seven groundwater monitoring wells: MW-1, MW-1A, MW-2, MW-3, MW-8, MW-9 and MW-10. Included is discussion of background information, subsurface geologic and hydrogeologic conditions, current groundwater quality conditions, and light non-aqueous phase liquid (LNAPL) hydrocarbon occurrence. Planned activities to be performed during the next quarterly reporting period (January, February and March, 2009) are also provided.

3.0 PURPOSE AND SCOPE

The purpose for the work described herein was to continue with quarterly evaluation of hydrogeologic and groundwater quality conditions beneath the former Chemoil refinery. In addition, additional activities were performed in accordance with the October 12, 2008, Phase I Workplan prepared by TEC, to address areas where additional data was necessary for consideration of a site closure plan. To accomplish this objective, the scope of work was divided into tasks as outlined in Table 3-1 and further discussed below.

**Table 3-1
Task Summary**

Task No.	Description
1.0	Groundwater Gauging Program
2.0	Groundwater Quality Sampling Program
3.0	Analytical Program
4.0	Re-evaluation of Groundwater Flow Directions
5.0	Rehabilitation of Certain Wells
6.0	Data Analysis
7.0	Confirmation of Responsible Party(ies)
8.0	Report Preparation
9.0	Phase II Workplan Preparation

Task No. 1.0 – Groundwater Gauging Program: Prior to groundwater sampling, all monitoring wells and former LNAPL recovery wells were gauged for depth to groundwater and potential presence of LNAPL, if present. In addition, all wells were resurveyed on January 23, 2008, by Dulin and Boynton, California licensed surveyors located in the City of Signal Hill. Gauging data generated since 1994 were tabulated and is provided in Appendix B, Part I. Annotated hydrographs are provided in Appendix B, Part II.

Task No. 2.0 – Groundwater Quality Sampling Program: Representative groundwater samples were retrieved on December 9, 2008, from all operable monitoring wells and former recovery wells situated on the former Chemoil refinery site. Wells sampled included:

<u>Western Parcel</u>	<u>Eastern Parcel</u>
MW-1, MW-1A, MW-3, MW-8, MW-9	MW-2 MW-10

Three wells could not be sampled: former LNAPL recovery wells R-4, R-5 and R-6, and monitoring well MW-7. These wells were either damaged or filled with soil and no longer suitable for groundwater monitoring and sampling purposes. Prior to sampling, each well was purged a minimum of three times the volume of stagnant water in the well, or upon stabilization of pertinent groundwater parameters (i.e., pH, dissolved oxygen, specific conductance and temperature). Such activities were performed in accordance with the sampling protocol provided in Appendix C (Part I); field sampling forms are also contained in Appendix C (Part I).

Task No. 3.0 – Analytical Program: Seven representative groundwater samples obtained from existing monitoring and former recovery wells were submitted to Advanced Technology Laboratories, a California-certified laboratory located in Signal Hill, California, for chemical testing. The samples were analyzed for:

- Volatile organic compounds (VOCs) and oxygenated compounds using EPA Method 8260B;
- Semi-volatile organic compounds (SVOCs) using EPA Method 8270C; and
- Petroleum hydrocarbons using EPA Method 8015B (modified for diesel and gasoline); and
- Petroleum hydrocarbons using EPA Method 8015B (modified for diesel and including a silica gel cleanup)

Laboratory reports and associated chain-of-custody forms are provided in Appendix C (Part II). Graphs showing fluctuations of dissolved hydrocarbon constituents in groundwater with time were also generated and contained in Appendix C (Part III).

Task No. 4.0 – Re-evaluation of groundwater flow direction(s): Groundwater flow direction(s) were re-evaluated for the past two years based on re-established top-of-casing elevations.

Task No. 5.0 – Rehabilitation of Certain Wells: Efforts to rehabilitate and repair former recovery wells R-4, R-5 and R-6, and former groundwater monitoring well MW-7, were made.

Task No. 6.0 – Data Analysis: Upon receipt of field and laboratory data, such information was compiled, tabulated and graphically illustrated.

Task No. 7.0 – Confirmation of Responsible Party(ies): The responsible party or parties, for achieving site closure for the site, was confirmed.

Task No. 8.0 - Report Preparation: Upon completion of Task Nos. 1.0 through 6.0, the comprehensive report presented herein was prepared. This report addresses overall subsurface hydrogeologic and environmental conditions beneath the former Chemoil refinery site. Included is discussion of background information, subsurface geologic and hydrogeologic conditions, groundwater quality, and LNAPL hydrocarbon occurrence. Conclusions and planned activities to be performed during the next quarterly reporting period are also provided, as appropriate.

Task No. 9.0 – Phase II Workplan Preparation: Based on the results contained in the report herein, a Phase II workplan was prepared to further address data gaps. Such workplan will be presented under separate cover, and anticipated to be submitted to CRWQCB-LAR by March 2, 2009.

4.0 HYDROGEOLOGIC CONDITIONS ENCOUNTERED

Evaluations of geologic and hydrogeologic conditions beneath the site have been performed since 1985 (Table 2-1). Discussion of subsurface conditions, however, are based on a limited number of sample points.

4.1 Geologic Conditions

The site is underlain by a thin veneer of artificial fill overlying Holocene non-marine terrace and marine terrace deposits of the Upper Pleistocene Formation (Poland, et al., 1956 and 1959; Zielbauer, et al., 1962; Testa, et al., 1998). Terrace deposits consist predominantly of an unconsolidated, stratified, lateral and vertically discontinuous sequence of sand, silty sand, silt and clay. Contacts between soil types are commonly gradational. The shallow Pleistocene strata are subhorizontal with a gentle dip toward the southwest produced by active uplift and deformation of the adjacent southwest flank of the Signal Hill anticline along the Newport-Inglewood Structural Zone (Cherry Hill Fault segment; Hauksson, 1987). A schematic block diagram showing regional hydrogeologic conditions beneath the site, based on compilation of data obtained from adjacent water well logs, is presented in Figure 4-1. Location of on-site soil borings, monitoring wells and former LNAPL recovery wells are shown in Figure 4-2.

Predominantly coarse-grained soils consisting of sand (SP) and silty sand (SM) were encountered during drilling of soil borings and wells, with subordinate fine-grained soils consisting predominantly of silt (ML and MH) and to a lesser degree clay (CL), were also encountered. Soil boring data is summarized in Table 4-1.

4.1.1 Western Parcel

Beneath the Western Parcel, relatively fine-grained sandy silt and clayey silt predominate from ground surface to approximately 10 to 20 feet below ground surface, with exception to an area in the southern portion of the Western Parcel, where relatively more permeable very fine to medium-grained sand and silty sand predominate (Figures 4-3 and 4-4). A very fine-grained, relatively low permeability clayey silt and silty clay is encountered at a depth of 40 to 50 feet bgs (Figures 4-3 and 4-4). This fine-grained soil strata varies in maximum depth ranging from about 35 to 45 feet bgs, and is inferred to extend laterally beneath the Western Parcel.

4.1.2 Eastern Parcel

Geologic conditions beneath the Eastern Parcel are similar to those encountered beneath the Western Parcel. However, beneath the northern portion of the Eastern Parcel, relatively very fine to medium-grained sand and silty sand predominate, with a subordinate amount of very fine-grained sandy silt extending from the ground surface to about 12 feet below ground surface, in the northeastern portion of the Eastern Parcel (Figure 4-2). Very fine-grained, relatively impermeable clayey silt and silty clay is encountered beneath the southeast portion of the Eastern Parcel (Figure 4-3). These fine-grained soils are encountered at ground surface extending to a depth of about 18 feet bgs, and at a depth of about 28 to 30 feet bgs.

4.2 Hydrogeologic Conditions

Shallow groundwater beneath the site is encountered within the Semi-perched Aquifer within the southern portion of the West Coast groundwater basin. Regionally, native groundwater in this area is deemed of poor quality as characterized by Piper, et al., (1953), Poland, et al., (1956), and Poland, et al., (1959). Data pertaining to regional shallow groundwater flow in the vicinity of the site is sparse. Chapter IV of the September 2007 Groundwater Basin Reports, Los Angeles County Coastal Plain Basins – West Coast Basin, shows regional groundwater flow at depth to be regionally toward the south-southwest. Only one regional contour is shown in the vicinity of the site.

During sampling, pH, dissolved oxygen (DO), temperature and Total Dissolved Solids (TDS) were field determined. pH was reported for all wells at 7.1. Temperature ranged from 71 to 72°F. Total dissolved solids ranged from 1,150 to 31,000 mg/L as measured in wells MW-10 and MW-1, respectively. DO ranged from 0.40 to 0.50 ppm.

Regional groundwater flow beneath the majority of the site is generally toward the south, albeit localized variable flow components have occasionally been noted. A contour map of the unconfined piezometric level is presented in Figure 4-4. A summary of gauging data generated since 1994 and hydrographs are provided in Appendix B, Parts I and II, respectively.

As of December 9, 2008, overall groundwater elevations generally decreased from about up to 1.2 feet as measured in well MW-8, in comparison to elevations gauged in September 2008. Beneath the Western Parcel, groundwater occurred at elevations of 4.41 and 6.02 feet relative to mean sea level, respectively (depths ranging from 21.50 to 42.00, respectively), as measured in wells MW-8 and MW-3, respectively. Beneath the Eastern Parcel, groundwater was encountered at elevations of 4.49 and 4.40 feet (i.e., depths of 25.50 to 27.20 feet) as measured in wells MW-2 and MW-10, respectively. Groundwater flow beneath the entire site was generally toward the south, with a slight southwest and southeast component beneath the southern portion of the site. The hydraulic gradient is about 0.003 ft/ft, or less.

Re-calculation of past flow directions, following re-establishment of top-of-casing elevations in January 2008, show overall groundwater flow to be consistently toward the south, with an occasional southeast and/or southwest component. Unconfined piezometric contour maps for 2007 and 2008 are provided in Appendix B, Part III.

4.3 Hydrocarbon Vapor Detection during Gauging

No hydrocarbon vapor was detected using a PID during gauging and sampling of wells in December 2008. Relatively slight to strong hydrocarbon odors were noted in wells MW-1A, MW-3, MW-9 and MW-10, respectively.

5.0 GROUNDWATER QUALITY

5.1 Groundwater Monitoring Network

Monitoring of groundwater quality beneath the former refinery site has been periodically performed since 1985, with a hiatus from monitoring between July 1999 and October 2001. Eight groundwater monitoring wells and three former LNAPL recovery wells were originally installed at the site. Following dismantling of the refinery from 1997 to 1998, monitoring well MW-7 and former recovery wells R-5 and R-6, were found to be no longer operational. These wells appeared to have broken casings and to be filled with soil, and subsequent efforts to remedy this situation have not been successful.

Nine wells, six monitoring wells (MW-1, MW-1A, MW-3, MW-7, MW-8 and MW-9) and three former recovery wells (R-4, R-5 and R-6) are situated on the Western Parcel. The remaining two groundwater monitoring wells, MW-2 and MW-10, are situated on the Eastern Parcel. Of the total number of wells, only seven wells are currently usable for the purpose of groundwater gauging and sampling related activities (MW-1, MW-1A, MW-2, MW-3, MW-8, MW-9 and MW-10). The location of the groundwater monitoring and former recovery wells is presented in Figure 3-1. A summary of general well construction details is presented in Table 4-2. Dissolved hydrocarbons reported at concentrations at or above their respective analytical detection limit are summarized in Table 5-1.

5.2 December 2008 Analytical Results

5.2.1 Western Parcel

Five operable wells are situated in the Western Parcel: wells MW-1, MW-1A, MW-3, MW-8 and MW-9.

Several dissolved organic constituents were reported in groundwater samples retrieved from all five wells beneath the Western Parcel in December 2008. The concentration of certain dissolved hydrocarbon constituents were generally consistent in comparison with results reported in September 2008. Concentrations of TPH_d, TPH_d using a silica gel cleanup, and TPH_g, are summarized below.

Summary of Total Petroleum Hydrocarbon Analyses (mg/l)				
Well No.	Location	TPH diesel	TPH diesel with silica gel	TPH gasoline
MW-1	Western Parcel	6.2	0.84	0.25
MW-1A	Western Parcel	4.8	0.84	1.6
MW-2	Eastern Parcel	ND	ND	ND
MW-3	Western Parcel	0.48	ND	ND
MW-8	Western Parcel	11	1.2	1.3
MW-9	Western Parcel	7.6	1.3	4.9
MW-10	Eastern Parcel	1.6	0.41	ND

TPH_d beneath the Western Parcel ranged from 0.48 to 7.6 mg/L, in wells MW-3 and MW-9, respectively. TPH_d using a silica gel cleanup ranged from non-detect (<0.2) to 1.3 mg/L (at MW-9). These data indicate that the vast majority of the mass measured in groundwater as "TPH_d" are polar non-hydrocarbons, likely resulting from the intrinsic biodegradation of the petroleum. The fact that the polar biodegradation byproducts are measured as "TPH_d" has been widely known since the mid-1990s, and use of the silica gel cleanup removes or reduces these polar compounds. The petroleum hydrocarbons are non-polar and are not removed by the silica gel cleanup. The TPH_d with silica gel cleanup more closely represents the concentration of dissolved petroleum hydrocarbons in the groundwater. Evaluation of the chromatograms indicates that minor amounts of

non-dissolved diesel are present in the water samples, likely from minor amounts of petroleum affected soil within the sample. Therefore, the actual concentration of dissolved petroleum constituents in the groundwater is likely lower than the concentrations shown here. TPHg was reported at concentrations of 0.25, 1.6, 1.3 and 4.9 mg/L for wells MW-1, MW-1A, MW-8 and MW-9, respectively. BTEX was reported for well MW-9 at concentrations of 160, non-detect, 32 and 50 ug/L, respectively. No MTBE or Tert-Butanol was reported at levels greater than their analytical respective detection limit.

Six other petroleum-related dissolved VOCs and/or SVOCs were reported. These constituents and their respective concentration reported, and associated wells, were:

<u>Volatile Organic Compounds</u>	<u>Concentration (ug/L)</u>
n-Butylbenzene	5.6 (MW-9)
Isopropylbenzene	68 (MW-9)
2-Methylnaphthalene	12 (MW-1A)
Naphthalene	74 (74) (MW-9)
n-Propylbenzene	59 (MW-9)
1,2,4-Trimethylbenzene	100 (MW-9)

5.2.2 Eastern Parcel

Two wells are situated in the Eastern Parcel; wells MW-2 and MW-10. No dissolved hydrocarbons were detected beneath the Eastern Parcel during the December 2008 sampling event with exception of well MW-10; whereas, TPHd was reported at 1.6 mg/L, and TPHd (with a silica gel cleanup) was reported at 0.41 mg/L.

6.0 LNAPL OCCURRENCE

Historically, LNAPL presence was previously reported as three separate and localized thin pools of limited lateral extent, overlying the shallow semi-perched saturated zone beneath the Western Parcel (Figure 6-1). Former Pool No. I encompassed former recovery well R-4 and monitoring well MW-9, and was characterized as a combination of naphtha, kerosene and gas-oil, with an API gravity ranging between 44.9 and 47.3, and total lead content between 10.9 and 198.2 ppm, as measured in R-4 and MW-9, respectively. Pool No. II was situated in the vicinity of former recovery well R-6, and characterized as heavy crude oil or lubricating oil, with an API gravity of 19.0. Pool No. III was situated in the vicinity of former recovery well R-5, and characterized as a combination of naphtha, kerosene and gas-oil, with an API gravity of 40.9 and a total lead content of 179.0 ppm. Physical characteristics of the former LNAPL pools are summarized in Table 6-1.

Operation of a LNAPL recovery program on the Western Parcel was initiated in former recovery wells R-4 and R-6 in March 1987, and R-5 in December 1988. The estimated volume of total fluids removed since July 1988 was approximately 253,902 barrels. Of this volume, an estimated volume of 27.9 barrels of LNAPL was recovered. The LNAPL recovery system was terminated in February 1994, with subsequent hand bailing of residual LNAPL in certain wells thereafter (notably, former recovery well R-4 and monitoring MW-9).

In December 2002, LNAPL was solely encountered in former LNAPL recovery well R-4. Apparent LNAPL thickness was measured at 2.65 feet, whereas, actual thickness was less than 0.51 feet. A light sheen was observed in monitoring well MW-9. These conditions were consistent with previous gauging events. The presence of residual LNAPL is not unusual reflecting a continued fluctuation in the unconfined piezometric level since the recovery wells were deemed no longer efficient for LNAPL recovery in 1994, and continued contact with hydrocarbon-saturated soil at the hydrocarbon affected soil above the water table and adjacent to the screened interval (termed the "smear zone"). Approximately 12.5 gallons of LNAPL had been periodically bailed from R-4 during the period between June and December, 2002.

Former LNAPL recovery well R-4 was vandalized between December 2002 and March 2003, and is no longer usable for monitoring purposes. No LNAPL was detected during gauging of existing wells during the past several years of gauging, or in 2008.

During conduct of the Environmental Due Diligence Evaluation in 2006, LNAPL was reported in one boring (OSB1), with off-site migration inferred (GEM et al., 2006). Based on the data generated to date, this conclusion is questionable. This matter will be further addressed as part of the Phase II workplan.

7.0 CONCLUSIONS AND PLANNED ACTIVITIES

Based on the information and results presented herein, the following conclusions are offered:

- The site is underlain by deposits of unconsolidated, stratified, laterally discontinuous sequences of predominantly coarse-grained soil consisting of sand and silty sand, with subordinate fine-grained soils consisting predominantly of silt and to a lesser degree clay;
- As of December 9, 2008, overall groundwater elevations generally decreased from about up to 1.2 feet as measured in well MW-8, in comparison to elevations gauged in September 2008. Beneath the Western Parcel, groundwater occurred at elevations of 4.41 and 6.02 feet relative to mean sea level, respectively (depths ranging from 21.50 to 42.00, respectively), as measured in wells MW-8 and MW-3, respectively. Beneath the Eastern Parcel, groundwater was encountered at elevations of 4.49 and 4.40 feet (i.e., depths of 25.50 to 27.20 feet) as measured in wells MW-2 and MW-10, respectively. Groundwater flow beneath the entire site was generally toward the south, with a slight southwest and southeast component beneath the southern portion of the site. The hydraulic gradient is about 0.003 ft/ft, or less;
- Re-calculation of past flow directions, following re-establishment of top-of-casing elevations in January 2008, show overall groundwater flow to be consistently toward the south, with an occasional southeast and/or southwest component;
- Several dissolved organic constituents were reported in groundwater samples retrieved from all five wells beneath the Western Parcel in December 2008. The concentration of certain dissolved hydrocarbon constituents were generally consistent in comparison with results reported in September 2008. Concentrations of TPHd, TPHd using a silica gel cleanup, and TPHg, are summarized below. TPHd beneath the Western Parcel ranged from 0.48 to 7.6 mg/L, in wells MW-3 and MW-9, respectively. TPHd using a silica gel cleanup ranged from non-detect (<0.2) to 1.3 mg/L (at MW-9). These results confirm that most of the material being measured as "TPHg" in groundwater is the polar non-hydrocarbons resulting from intrinsic biodegradation of the petroleum. The TPHd with silica gel cleanup more closely represents the concentrations of dissolved petroleum hydrocarbons in the groundwater. TPHg was reported at concentrations of 0.25, 1.6, 1.3 and 4.9 mg/L for wells MW-1, MW-1A, MW-8 and MW-9, respectively. BTEX was reported for well MW-9 at concentrations of 160, non-detect, 32 and 50 ug/L, respectively. No MTBE or Tert-Butanol was reported at levels greater than their analytical respective detection limit.

Six other petroleum-related dissolved VOCs and/or SVOCs were reported. These constituents and their respective concentration reported, and associated wells, were:

<u>Volatile Organic Compounds</u>	<u>Concentration (ug/L)</u>
n-Butylbenzene	5.6 (MW-9)
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Naphthalene	74 (74) (MW-9)
n-Propylbenzene	59 (MW-9)
1,2,4-Trimethylbenzene	100 (MW-9)

- Efforts to rehabilitate former LNAPL recovery wells R-4, R-5 and R-6, and former groundwater monitoring well MW-7, were not successful and such wells will require abandonment, and subsequent replacement, as appropriate.

The following activities are planned:

- The next quarterly groundwater gauging and sampling event is scheduled to be performed in March 2009, with the subsequent report submitted to the CRWQCB-LAR upon completion of work to be completed as part of the Phase II workplan.

In addition, a Proposed Phase II Workplan will be submitted. Such workplan will include:

- Compilation and analysis of all subsurface data generated by various investigators to date;
- Development of hydrogeologic cross-sections and demonstration of an adequate understanding of subsurface hydrogeologic conditions;
- Abandonment and replacement of former recovery wells R-4, R-5 and R-6, and former groundwater monitoring well MW-7, and the drilling and installation of additional wells in strategic off-site locations, to further assess the lateral extent of subsurface hydrocarbons;
- Analytical program for selected soil and groundwater samples; and
- Preparation of a comprehensive report summarizing all subsurface hydrogeologic and geologic information generated to date, discussion of the vertical and lateral extent of subsurface hydrocarbons; and consideration of a site closure plan.

8.0 REFERENCES

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- Testa Environmental Corporation, 2003b. Report on Quarterly Groundwater Monitoring, March 2003, Former Chemoil Refinery, Signal Hill, California: unpublished report dated March 15, 2003, prepared for the Signal Hill Holding Corporation.
- Testa Environmental Corporation, 2003c. Report on Quarterly Groundwater Monitoring, July 2003, Former Chemoil Refinery, Signal Hill, California: unpublished report dated July 15, 2003, prepared for the Signal Hill Holding Corporation.
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10.0 LIMITATIONS

The observations, conclusions and recommendations presented in this report are based upon:

- Review of data and referenced material noted in this report;
- Observations of TEC personnel and representatives during gauging of monitoring and former LNAPL recovery wells, groundwater sampling and other field-related activities performed in September 2008; and
- Review of results of laboratory analyses performed on select groundwater samples as reported by a California State-certified analytical laboratory.

It is possible that variations in soil and groundwater conditions may exist beyond the limits of or between the data points and locations explored during this assessment. Also, changes may occur in surface and groundwater conditions encountered in the site area at some time in the future due to variations in rainfall, temperature, regional water level fluctuations and usage, or other factors, which may ultimately impact the conditions discussed herein.

The services performed by TEC have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty, expressed or implied, is made.

TABLES

TABLE 2-1
SUMMARY OF PREVIOUS REPORTS

Date	Report Title
<u>Engineering Enterprises, Inc. (EEI)</u>	
December 1985	Groundwater Assessment Phase I Report MacMillan Ring-Free Oil Company
August 1986	Groundwater Assessment Phase II Report MacMillan Ring-Free Oil Company
October 1986	Groundwater Assessment Phase II Report Clarifications
March 1987	First Quarterly Groundwater Monitoring Report, MacMillan Ring-Free Refinery, Signal Hill, California
April 1987	Second Quarterly Groundwater Monitoring Report, MacMillan Ring-Free Refinery, Signal Hill, California
September 1987	Third Quarterly Groundwater Monitoring Report, MacMillan Ring-Free Refinery, Signal Hill, California
January 1988	Fourth Quarterly Groundwater Monitoring Report, MacMillan Ring-Free Refinery, Signal Hill, California
January 1988	Revised Workplan to Address Outstanding Issues, California Regional Water Quality Control Board File No. 85-15, MacMillan Ring-Free Refinery
July 1988	Biannual Interim Monitoring Report, MacMillan Ring-Free Refinery, Signal Hill, California
January 1989	Biannual Interim Monitoring Report, January 1989, Chemoil Refinery, Signal Hill, California
July 1989	Biannual Interim Monitoring Report, July 1989, Chemoil Refinery, Signal Hill, California
January 1990	Biannual Interim Monitoring Report, January 1990, Chemoil Refinery, Signal Hill, California
<u>Applied Environmental Services, Inc. (AES)</u>	
July 1990	Biannual Interim Monitoring Report, July 1990, Chemoil Refinery, Signal Hill, California
January 1991	Biannual Interim Monitoring Report, January 1991, Chemoil Refinery, Signal Hill, California
July 1991	Biannual Interim Monitoring Report, July 1991, Chemoil Refinery, Signal Hill, California
January 1992	Biannual Interim Monitoring Report, January 1992, Chemoil Refinery, Signal Hill, California
July 1992	Biannual Interim Monitoring Report, July 1992, Chemoil Refinery, Signal Hill, California
January 1993	Biannual Interim Monitoring Report, January 1993, Chemoil Refinery, Signal Hill, California
July 1993	Biannual Interim Monitoring Report, July 1993, Chemoil Refinery, Signal Hill, California

TABLE 2-1
SUMMARY OF PREVIOUS REPORTS

Date	Report Title
January 1994	Biannual Interim Monitoring Report, January 1994, Chemoil Refinery, Signal Hill, California
July 1994	Biannual Interim Monitoring Report, July 1994, Chemoil Refinery, Signal Hill, California
<u>Testa Environmental Corporation (TEC)</u>	
January 1995	Biannual Interim Monitoring Report, January 1995, Chemoil Refinery, Signal Hill, California
July 1995	Biannual Interim Monitoring Report, July 1995, Chemoil Refinery, Signal Hill, California
January 1996	Biannual Interim Monitoring Report, January 1996, Chemoil Refinery, Signal Hill, California
July 1996	Biannual Interim Monitoring Report, July 1996, Chemoil Refinery, Signal Hill, California
January 1997	Biannual Interim Monitoring Report, January 1997, Chemoil Refinery, Signal Hill, California
July 1997	Biannual Interim Monitoring Report, July 1997, Chemoil Refinery, Signal Hill, California
December 1997	Proposal for Subsurface Soil Quality Assessment, December 1997, Former Chemoil Refinery, Signal Hill, California
May 1998	Report of Additional Subsurface Assessment and Groundwater Monitoring, May 1998, Former Chemoil Refinery, Signal Hill, California
November 1998	Proposed Workplan for Off-site Subsurface Soil and Groundwater Quality Conditions, November 6, 1998, Former Chemoil Refinery, Signal Hill, California
August 1999	Report on Additional Subsurface Assessment, August 1999, Former Chemoil Refinery, Signal Hill, California
September 2001	Proposed Workplan for Subsurface Assessment, Eastern Parcel, Former Chemoil Refinery, Signal Hill, California
November 2001	Report on Additional Subsurface Assessment, Former Chemoil Refinery -- Eastern Parcel, Signal Hill, California
March 2002	Proposed Remedial Action Plan, Former Chemoil Refinery -- Eastern Parcel, Signal Hill, California

TABLE 2-1
SUMMARY OF PREVIOUS REPORTS

Date	Report Title
June 2002	Revised Remedial Action Plan, Former Chemoil Refinery – Eastern Parcel, Signal Hill, California
July 2002	Report on Quarterly Groundwater Quality, July, 2002, Former Chemoil Refinery, Signal Hill, California
July 2002	Revised Workplan for Subsurface Assessment, Former Chemoil Refinery Site, Western Parcel, Signal Hill, California
October 2002	Report on Quarterly Groundwater Quality, October 2002, Former Chemoil Refinery, Signal Hill, California
January 2003	Report on Quarterly Groundwater Quality, January, 2003, Former Chemoil Refinery, Signal Hill, California
April 2003	Report on Quarterly Groundwater Quality, April, 2003, Former Chemoil Refinery, Signal Hill, California
July 2003	Report on Quarterly Groundwater Quality, July, 2003, Former Chemoil Refinery, Signal Hill, California
October 2003	Report on Quarterly Groundwater Quality, October, 2003, Former Chemoil Refinery, Signal Hill, California
January 2004	Report on Quarterly Groundwater Quality, January, 2004, Former Chemoil Refinery, Signal Hill, California
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SUMMARY OF PREVIOUS REPORTS

Date	Report Title
July 2007	Report on Quarterly Groundwater Quality. July, 2007, Former Chemoil Refinery, Signal Hill, California.
October 2007	Report on Quarterly Groundwater Quality. October, 2007, Former Chemoil Refinery, Signal Hill, California.
January 2008	Report on Quarterly Groundwater Quality. January, 2008, Former Chemoil Refinery, Signal Hill, California.
April 2008	Report on Quarterly Groundwater Quality. April, 2008, Former Chemoil Refinery, Signal Hill, California.
July 2008	Report on Quarterly Groundwater Quality. July, 2008, Former Chemoil Refinery, Signal Hill, California.
October 2008	Report on Quarterly Groundwater Quality. October, 2008, Former Chemoil Refinery, Signal Hill, California.

Table 4-1
Summary of Soil Boring Data for the Western Parcel

Soil Boring No.	Boring Depth (feet)	Depth interval (feet)	Soil Type	Soil Symbol (USCS) ^{1a)}	Remarks
<u>Engineering Enterprises, Inc. (1988)</u>					
B-1	10	0-7.5 7.5-10	Sandy silt Sand	ML SP	
B-2	10	0-10	Silty sand	SM	Moderate Hydrocarbon odor
B-3	10	0-7.5 7.5-9 9-10	Silty sand Sandy silt Sand	SM ML SP	
B-4	10	0-10	Sandy silt	ML	Slight hydrocarbon odor at 0-2' bgs
B-5	10	0-4 4-10	Sandy clay Sandy silt	CL ML	Strong hydrocarbon odor Slight hydrocarbon odor
B-6	10	0-10	Silty sand	SM	Hydrocarbon saturation at 0.5' bgs
B-7	10	0-6 6-10	Sandy silt Sand	ML SP	Moderate sweet odor
B-8	10	0-9 9-10	Sandy silt Silty sand	ML SM	
B-9	10	0-3 3-10	Silty sand Sandy silt	SM ML	
B-10	10	0-7 7-10	Silty sand Sandy silt	SM ML	Slight hydrocarbon odor Slight hydrocarbon odor
B-11	10	0-2 2-10	Clay Silty sand	CL SM	Slight hydrocarbon odor Moderate hydrocarbon odor
B-12	10	0-2 2-6 6-10	Silty sand Sandy silt Silty sand	SM ML SM	Moderate hydrocarbon odor Moderate hydrocarbon odor Moderate hydrocarbon odor
B-13	10	0-3 3-10	Sandy silt Silty sand	ML SM	Slight hydrocarbon odor Moderate-strong hydrocarbon odor
B-14	10	0-3 3-10	Silty sand Sandy silt	SM ML	
B-15	10	0-10	Silty sand	SM	Slight hydrocarbon odor
B-16	10	0-1 1-5 5-10	Silty sand Sandy silt Silty sand	SM ML SM	Moderate hydrocarbon odor Slight hydrocarbon odor Slight hydrocarbon odor

**Table 4-1
Summary of Soil Boring Data for the Western Parcel**

Soil Boring No.	Boring Depth (feet)	Depth interval (feet)	Soil Type	Soil Symbol (USCS) ¹²	Remarks
B-17	10	0-10	Silty sand	SM	
B-18	10	0-8 8-10	Silty sand Sand	SM SP	
B-19	10	0-3 3-4 4-10	Silty sand Clay Silty sand	SM CL SM	Hydrocarbon saturation Strong hydrocarbon odor
B-20	10	0-1.5 1.5-5 5-10	Sand Sandy silt Silty sand	SP ML SM	Strong hydrocarbon odor Hydrocarbon saturation 3-4' bgs Slight hydrocarbon odor
B-21	10	0-2 2-3 3-8 8-10	Sandy silt Clay Silty sand Sand	ML CL SM SP	Hydrocarbon saturation Moderate hydrocarbon odor
B-22	10	0-2.5 2.5-10	Sandy silt Silty sand	ML SM	Strong hydrocarbon odor
B-23	10	0-2 2-10	Sandy silt Silty sand	ML SM	Strong hydrocarbon odor
B-24	10	0-1.5 1.5-10	Sand Silty sand	SP SM	Hydrocarbon saturation Slight hydrocarbon odor to 5' bgs
B-25	10	0-1 1-10	Gravelly sand Sandy silt	SD ML	Hydrocarbon saturation Moderate hydrocarbon odor
B-26	10	0-3 3-10	Silty sand Sandy silt	SM ML	Strong hydrocarbon odor Slight hydrocarbon odor
B-27	5	0-5	Clayey silt	ML	
B-28	10	0-3 3-10	Silty sand Clayey silt	SM ML	Strong hydrocarbon odor

On-site Western Parcel Monitoring Wells and Former Recovery Wells (EEI, 1987)

MW-1	45	0-7.0 7.0-15.0 15.0-20.0 20.0-40.0 40.0-45.0	Sandy silt Clayey silt Sandy silt Sand Clayey silt	ML MH ML SP MH	
MW-1A	35	0-15.0 15.0-25.0	Sandy silt Sand	ML SP	

Table 4-1
Summary of Soil Boring Data for the Western Parcel

Soil Boring No.	Boring Depth (feet)	Depth interval (feet)	Soil Type	Soil Symbol (USCS) ^(a)	Remarks
MW-2	45	0-7.0	Sandy silt	ML	
		7.0-12.5	Clayey silt	MH	
		12.5-20.0	Sandy silt	ML	
		20.0-37.5	Sand	SP	
		37.5-45.0	Clayey silt	MH	
MW-3	45	0-7.5	Sandy silt	ML	
		7.5-15.0	Silt	ML	
		15.0-25.0	Sandy silt	ML	
		25.0-37.5	Sand	SP	
		37.5-45.0	Clayey silt	ML	
R-4	45	0-7.5	Silty sand	SM	Hydrocarbon odor noted at 30' bgs
		7.5-12.5	Silt	ML	
		12.5-20.0	Clayey silt	MH	
		20.0-25.0	Silty sand	SM	
		25.0-40.0	Sand	SP	
		40.0-45.0	Clayey silt	MH	
R-5	45	0-7.5	Silt	ML	Hydrocarbon odor noted at 35' bgs
		7.5-17.5	Silty sand	SM	
		17.5-37.5	Sand	SP	
		37.5-45.0	Clayey silt	MH	
R-6	45	0-7.5	Sandy silt	ML	Hydrocarbon odor noted at 15-25' bgs
		7.5-12.5	Clayey silt	MH	
		12.5-22.5	Silty sand	SM	
		22.5-37.5	Sand	SP	
		37.5-45.0	Clayey silt	MH	
MW-7	45	0-7.5	Silt	ML	Hydrocarbon odor noted at 35' bgs
		7.5-15.0	Clayey silt	MH	
		15.0-25.0	Silty sand	SM	
		25.0-40.0	Sand	SP	
		40.0-45.0	Clayey silt	MH	
MW-8	45	0-10.0	Silt	ML	
		10.0-17.5	Sandy silt	ML	
		17.5-40.0	Sand	SP	
		40.0-45.0	Sandy silt	ML	
MW-9	35	0-15.0	Sandy silt	ML	Shell fragments at 15' bgs; well installed to depth of 49.0 feet bgs
		15.0-35.0	Sand	SP	
MW-10	40	0-15.0	Sandy silt	ML	Shell fragments from 20-25' bgs Some organics Some shell fragments
		15.0-35.0	Sand	SP	
		35.0-40.0	Silty sand	SM	
		40.0-41.0	Sand	SP	

Table 4-1
Summary of Soil Boring Data for the Western Parcel

Soil Boring No.	Boring Depth (feet)	Depth interval (feet)	Soil Type	Soil Symbol (USCS) ^(a)	Remarks
<u>On-site Western Parcel (southern subparcel) Soil Borings</u>					
B-1	35	0-2.5	Silty sand	SM	Slight hydrocarbon odor from ground surface to 35' bgs
		2.5-7.5	Silty clay	CL	
		7.5-35.0	Sand	SP	
B-2	30	0-2.5	Silty sand	SM	Slight hydrocarbon odor from ground surface to 30' bgs; strong at 5' and 25' bgs
		2.5-7.5	Clayey silt	CL	
		7.5-12.5	Silty sand	SM	
		12.5-30.0	Sand	SP	
B-3	25	0-2.5	Silty sand	SM	Strong hydrocarbon odor from ground surface to 25' bgs
		2.5-7.5	Sandy silt	ML	
		7.5-12.5	Silty sand	SM	
		12.5-22.5	Sand	SP	
		22.5-25.0	Silty sand	SM	
<u>Off-site Geoprobes (TEC, 1999)</u>					
GP-1	20	0-12.5	Clayey silt	CL	
		12.5-17.5	Silty sand	SM	
		17.5-20.0	Sand	SP	
GP-2	20	0-12.5	Clayey silt	CL	
		12.5-17.5	Silty sand	SM	
		17.5-20.0	Sand	SP	
GP-3	20	0-20	Clayey silt	CL	

(a) USCS = Unified Soil Classification System

Table 4-2
Summary of Monitoring and Recovery Well Data – December 2008

Well Number	Well Casing Diameter (in)	Top of Casing Elevation (ft)(a,b)	Well Depth (ft)	Elevation of Screened Interval Upper	Elevation of Screened Interval Lower	Depth to Groundwater (ft)(c)	Apparent LNAPL Thickness (ft)(c)	Corrected Elevation of Groundwater (a,b)	Piezometric Elevation Rise or Decline (-) (ft)	Comments
MW-1	4	22.22	62.0	-7.87	-37.87	17.50	NA (d)	4.72	-0.00	
MW-1A	4	23.02	64.0	9.60	-11.14	18.60	NA	4.42	-1.30	Slight hydrocarbon odor
MW-2	4	29.09	60.0	1.81	-20.19	25.50	NA	4.49	-1.10	
MW-3	4	-18.02	72.0	6.48	-23.52	42.00	NA	6.02	-0.30	Strong hydrocarbon odor
R1-4 (e)	4	36.12	45.0	0.53	-23.47	NID	NA	ND	ND	Residual LNAPL formerly noted (refer to Table 7-1)
R1-5 (e)	4	28.14	60.0	0.78	-29.22	NID	NA	ND	ND	No fluid in well
R1-6 (e)	4	24.15	50.0	4.26	-25.74	NID	NA	ND	ND	Well no longer useable.
MW-7 (e)	4	21.41	50.0	4.14	-25.86	NID	NA	ND	ND	Well no longer useable.
MW-8	4	25.91	52.0	5.70	-24.30	21.50	NA	4.41	-1.20	
MW-9	4	36.88	49.0	7.73	-12.27	32.30	NA	4.58	-0.40	Slight hydrocarbon odor.
MW-10	4	31.60	46.0	5.39	-14.61	27.20	NA	4.40	-0.30	Slight hydrocarbon odor

(a) Elevations re-established on January 23, 2000. All elevations referenced relative to City of Long Beach Benchmark No. 331 located on southwest corner of Walnut Avenue at 20th Street Brass Cap in Well 28W/Curb 8' E-Catch Basin. 1985 elevation = 16.397 feet NGVD20.; horizontal datum NAD83, Zone 5; NGS PID Stations AJ1847 and AJ1053 EPOCH DATE: 2000.35.

(b) Measured relative to the top of PVC casing at well head (refer to Appendix S).

(c) Fluid level depths gauged on December 9, 2008; well MW-3 corrected to reflect an estimated 5 feet in change in top of casing.

(d) NA = Not applicable.

(e) ND = Not determined; former LNAPL recovery wells R-4, R-5 and R-6, and monitoring well MW-7 are no longer useable (structural integrity compromised during past facility dismantling related activities (MW-7) and vandalism (R-4, R-5 and R-6).

Table 5-1
Summary of Analytical Results for Organics in Groundwater
December, 2008^(a)

Parameter	Monitoring Well Designation						
	MW-1	MW-1A	MW-2	MW-3	MW-8	MW-9	MW-10
TPH ^(b) (total petroleum hydrocarbons)	0.84	0.84	ND ^(c)	ND	1.2	1.3	0.41
TPH ^(b)	6.2	4.8	ND	0.48	11.0	7.6	1.6
TPH ^(b)	0.25	1.6	ND	ND	1.3	4.9	ND
Volatile Organic Compounds (VOCs) using EPA Method 8260B in ug/L^(d)							
Benzene	ND	ND	ND	ND	ND	160	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	32	ND
Isopropylbenzene	ND	ND	ND	ND	48	68	ND
MTBE	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	74	ND	ND	74	100	ND
n-Butylbenzene	ND	ND	ND	ND	ND	5.6	ND
n-Propylbenzene	ND	ND	ND	ND	37	53	ND
Tert-Butanol	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	5.6	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND
m,p-o-Xylenes	ND	ND	ND	ND	ND	50	ND
Semi-Volatile Organic Compounds (VOCs) using EPA Method 8270C in ug/L							
Naphthalene	ND	26	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	26	ND	ND	ND	ND	ND

(a) Groundwater sampling was performed on December 9, 2008.

(b) TPH^(b) = Total petroleum hydrocarbons as diesel and as gasoline, respectively, in milligrams per liter.

(c) ND = Not detected at or above the analytical detection limit; refer to laboratory reports (Appendix C) for detection limit where appropriate.

(d) ug/L = micrograms per liter or equivalent to parts per billion.

**Table 6-1
Summary of LNAPL Characteristics**

Pool No.	Well No.	Estimated Extent (acres)	Estimated Original Volume (barrels) ^(a)	Lead Content (ppm)	LNAPL Type	Specific Gravity	API Gravity	Apparent LNAPL Thickness ^(b) (feet)	Actual LNAPL Thickness ^(c) (feet)
I	F1-4	15,890	0.13	463	10.9	naphtha, kerosene and light gas-oil	0.0022	44.9 ^(d)	2.65
	MW-9 ^(e)				198.2	naphtha, kerosene, light gas-oil, and trace gasoline	0.7914	47.3	ND ^(f)
									<0.01 (not detected)
II	F1-6	NA ^(g)	2.7	na	ND	crude oil	0.9402	19.0	0.25 ^(h)
III	F1-5	1700	0.04	21	179.0	naphtha, kerosene and light to heavy gas-oil	0.8708	40.9	ND ^(f)

(a) Reflects total in-place LNAPL volume, rather than recoverable volume, prior to LNAPL recovery system operation. One barrel = 42 gallons.

(b) Data generated on June 29, 1999, with exception to that generated for F1-4 and MW-9, which was generated on December 4, 2002.

(c) Actual volume is conservative and reflects actual LNAPL thickness in addition to the height of the capillary fringe based upon baildown testing conducted in February 1995 (Testa and Winegardner, 2000).

(d) Apparent LNAPL thickness prior to LNAPL recovery operations was 4.49 feet.

(e) Apparent LNAPL thickness prior to LNAPL recovery operations was 0.80 feet; current gauging results as of December 9, 2008, in parentheses.

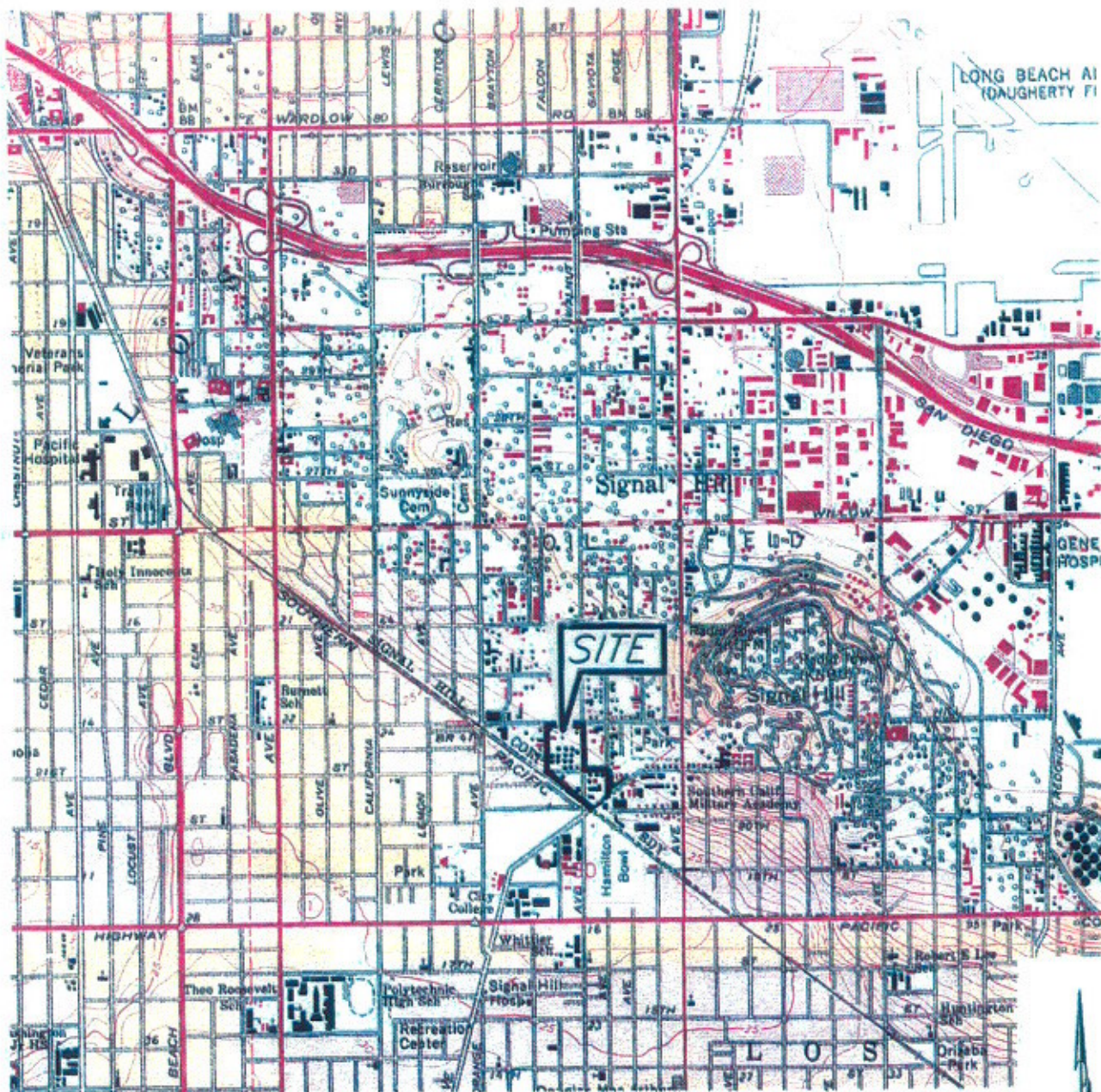
(f) ND = Not detected.

(g) NA = Not applicable.

(h) Apparent LNAPL thickness prior to LNAPL recovery operations was 0.28 feet.

(i) F1-5 is currently inoperable.

FIGURES



SOURCE: USGS 7.5-minute quadrangle, Long Beach, California (photorevised 1981).

**SITE LOCATION MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: **94-11-1008**

FILE: **.62**

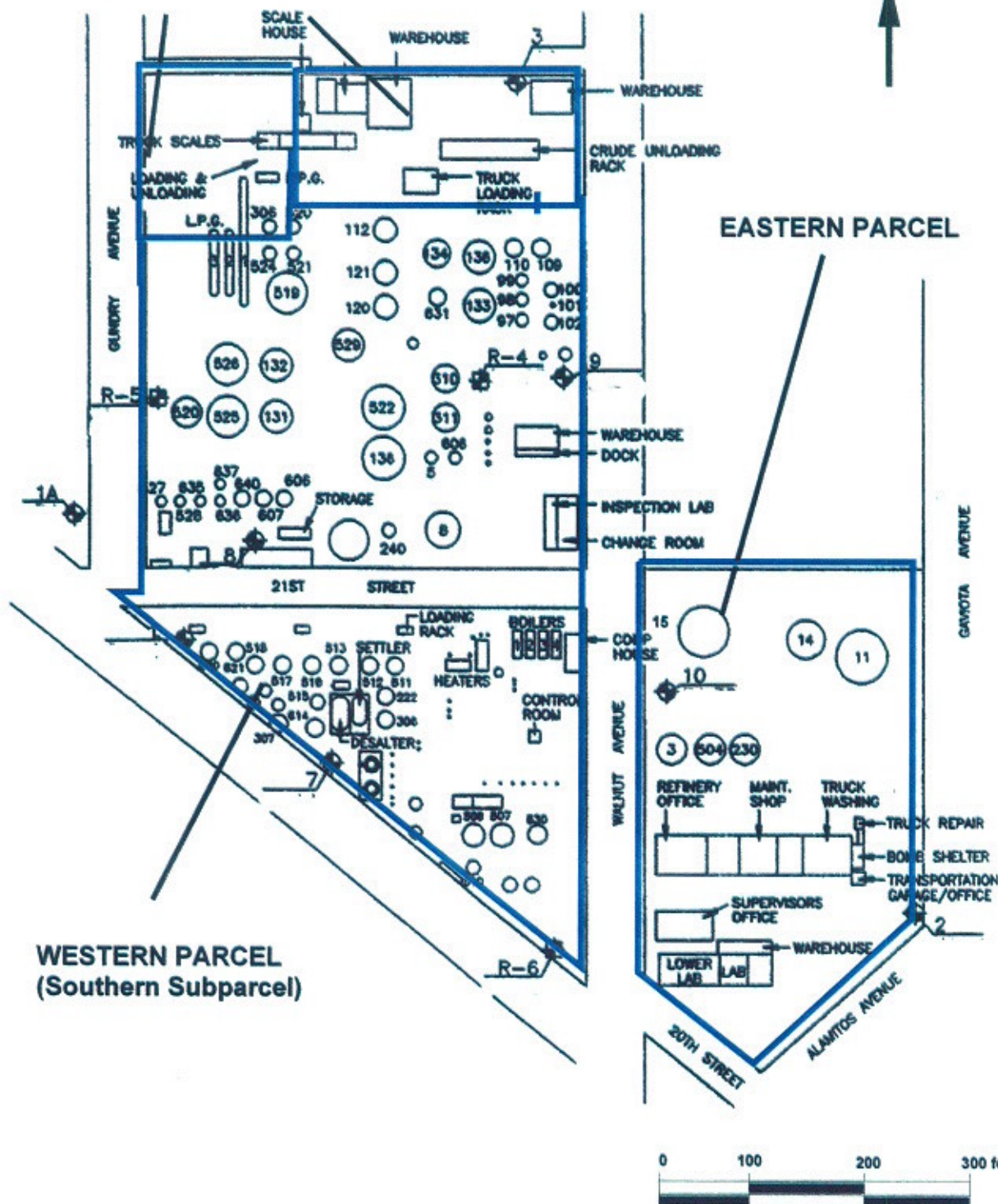
FIGURE NO:

DATE: **January 2009**

DRAWN BY: **SMT**

2-1

WESTERN PARCEL (Northern Subparcels)



**SITE LAYOUT MAP
FORMER CHEMOIL REFINERY SITE
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

2-2

ZONING MAP (SOUTH-WEST)



EXPLANATION

- CO = Commercial Office
- LI = Light Industrial
- OS = Open Space
- RH = Residential High Density
- RLM-2 = Residential Low/Medium
- SP-7 = Specific Purpose Housing Specific Plan

**CITY OF SIGNAL HILL LAND USE MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: **94-11-1008**

FILE: **.62**

FIGURE NO:

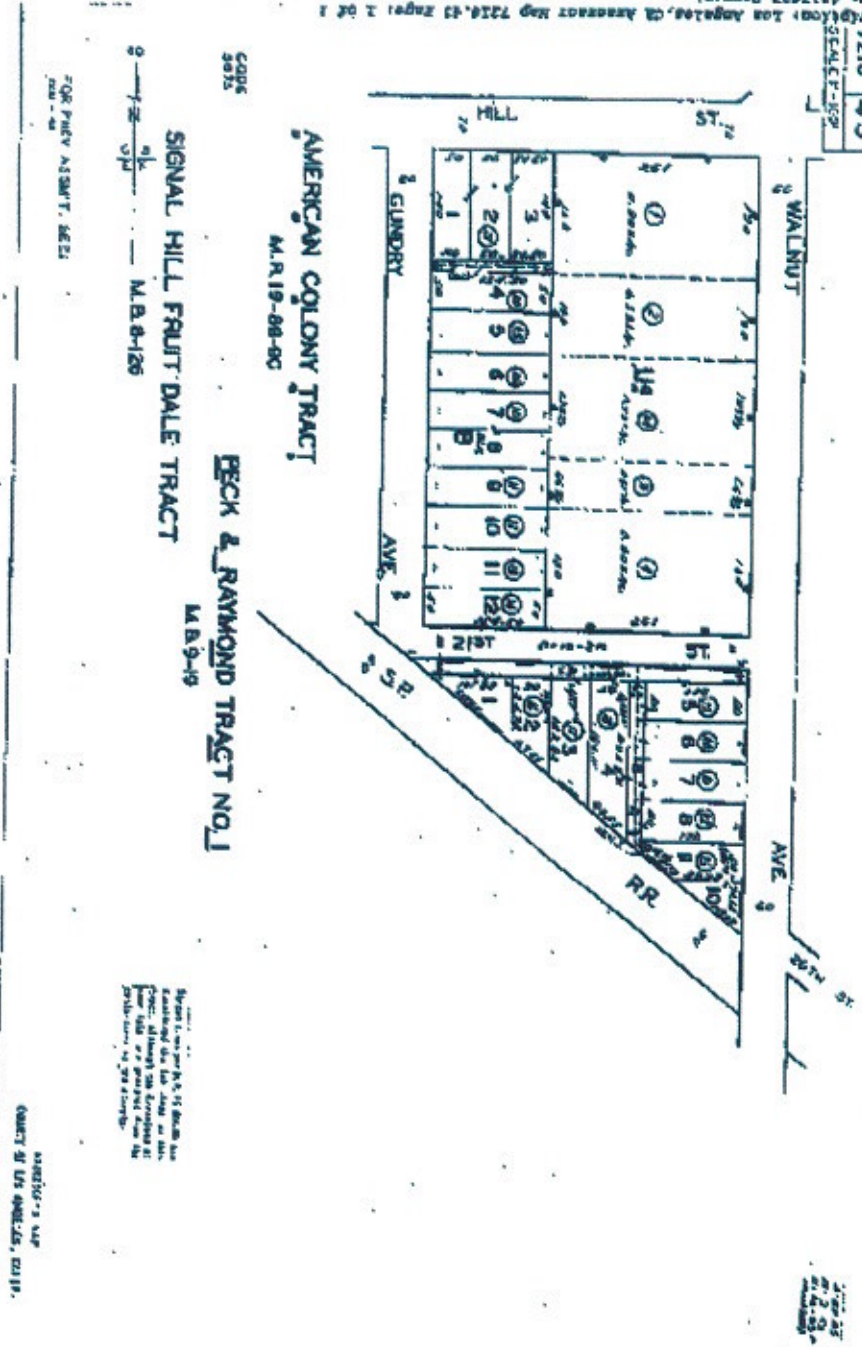
DATE: **January 2009**

DRAWN BY: **SMT**

2-3

Reported by: Los Angeles, CA Area Map 7210-43 Page 1 of 1
 Order: 487577 Comment:

7210 43
 SCALE: 1"=50'

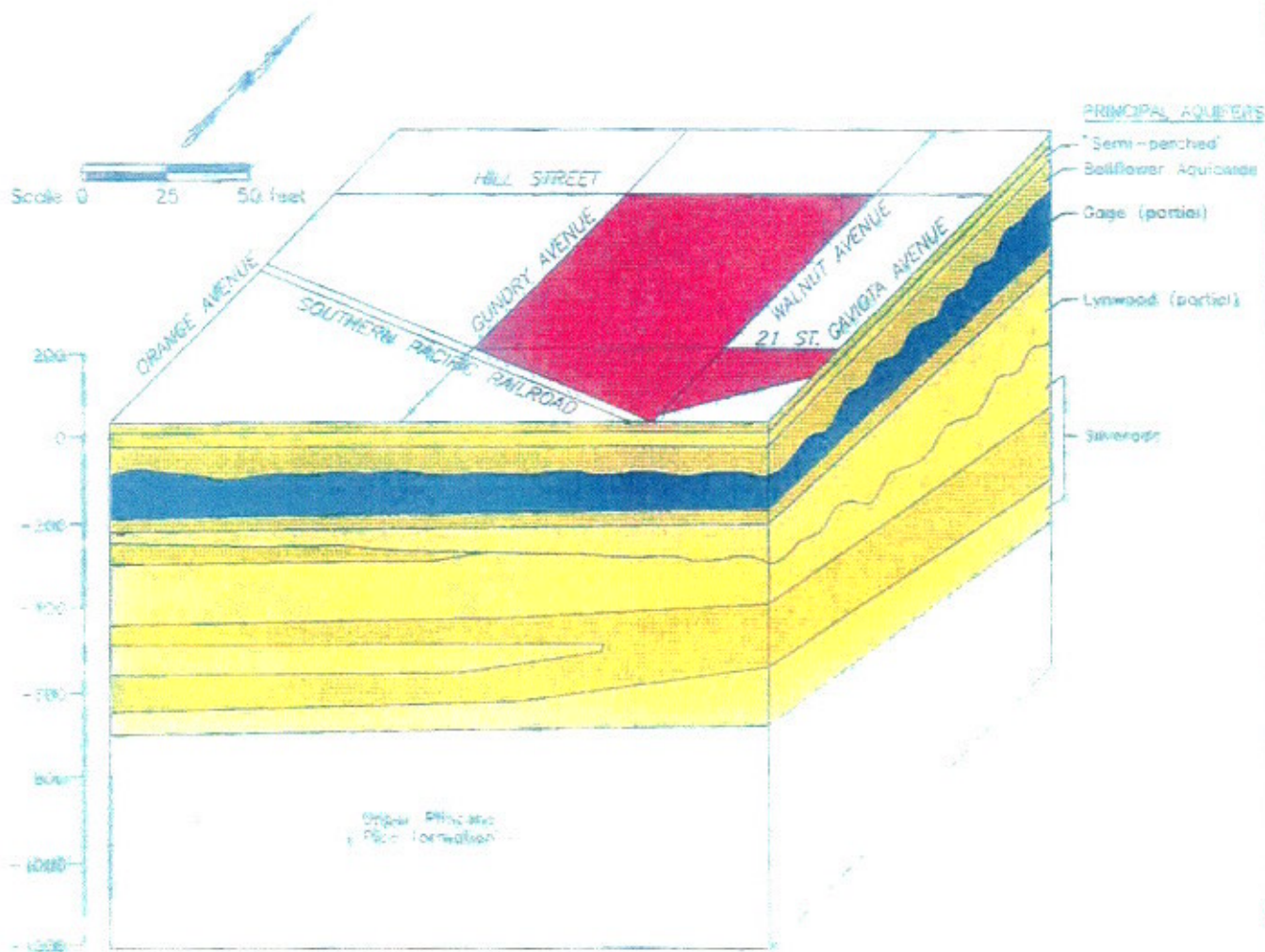


**WESTERN PARCELS SUBPARCEL MAP
 FORMER CHEMOIL REFINERY
 SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008	FILE: 62	FIGURE NO:
DATE: January 2009	DRAWN BY: SMT	2-4



NOTES

1. Subsurface data from State of California Department of Water Resources Bulletin No. 104, L.A. County Flood Control District Dominguez Gap Geologic Investigation, and USGS Water Supply paper 1471.
2. Subsurface data projected 0.25 miles southwest into block diagram section.

EXPLANATION

- Erosional unconformity (inferred)
- Aquicludes and deeper undifferentiated formations
- Aquifers in recent alluvium ("Semi-Perched" aquifer)
- Aquifers in Lakewood formation (Upper Pleistocene) (includes Gage "200-foot sand" Aquifer)
- Aquifers in San Pedro formation (Lower Pleistocene) (includes Lynwood "400-foot gravel" and Silverado Aquifer)

SCHEMATIC SHOWING BLOCK DIAGRAM OF SUBSURFACE HYDROGEOLOGIC CONDITIONS FORMER CHEMOIL REFINERY SIGNAL HILL, CALIFORNIA

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

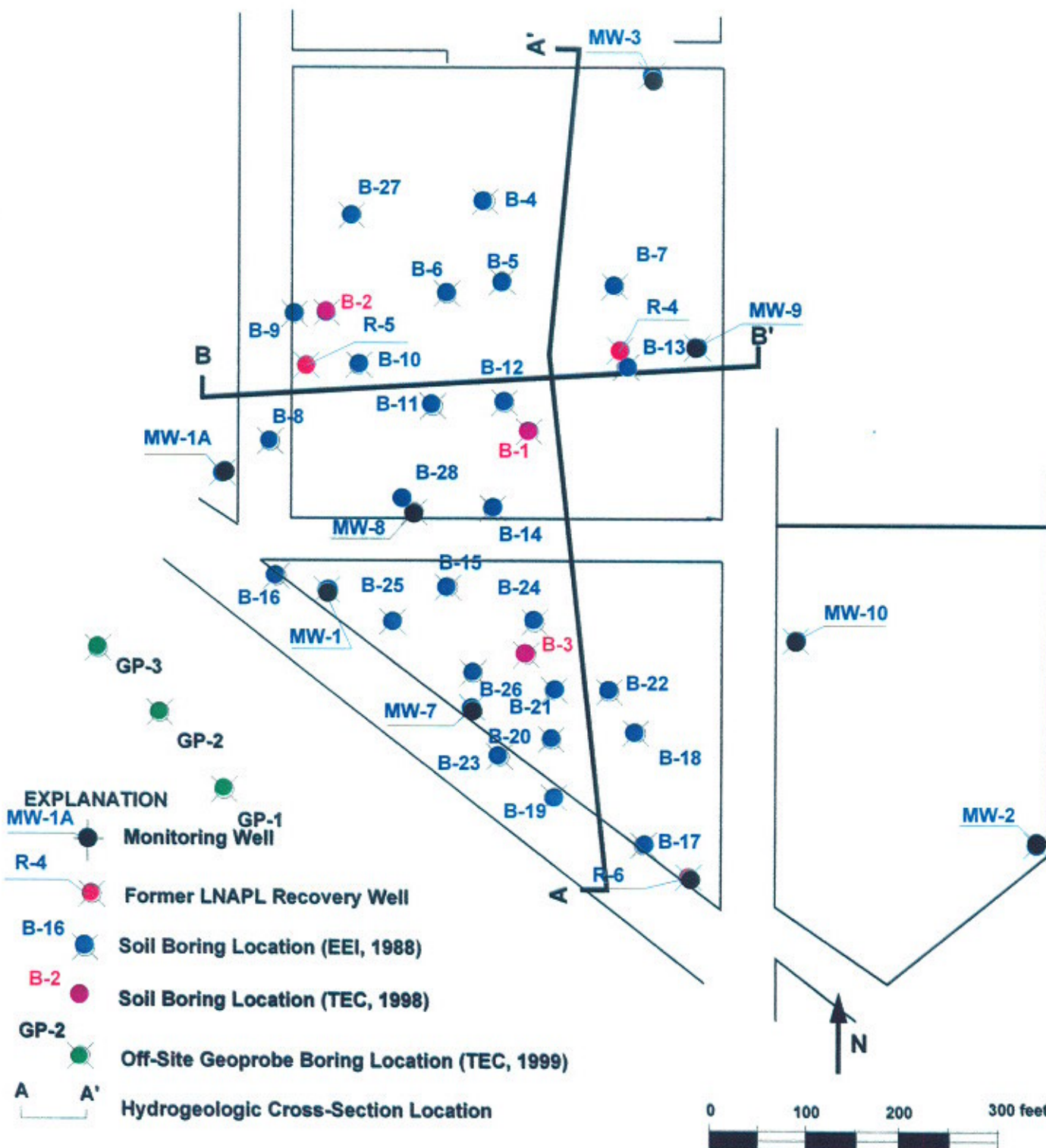
FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

4-1



**LOCATION OF SOIL BORINGS, MONITORING
WELLS AND FORMER RECOVERY WELLS
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

FILE: .62

FIGURE NO:

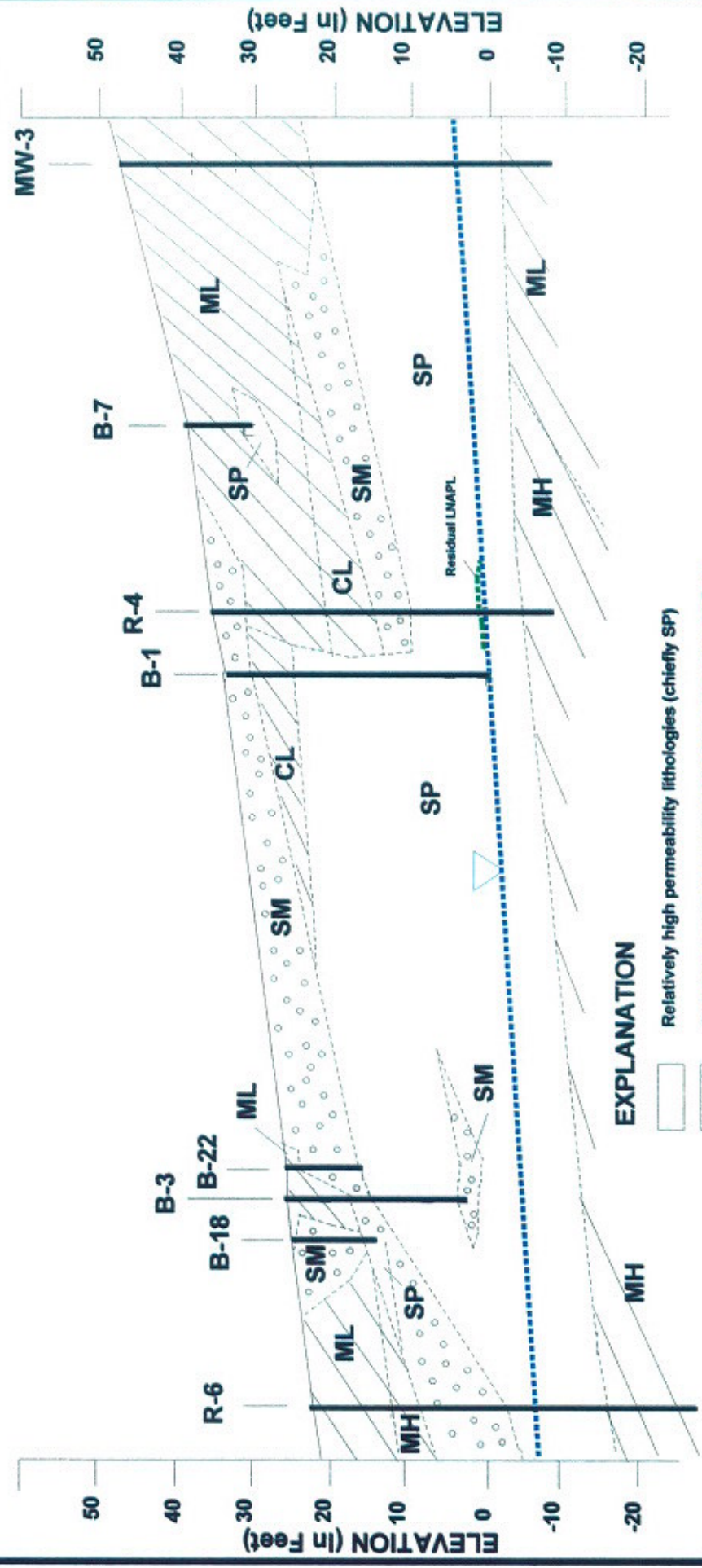
DATE: January 2009

DRAWN BY: SMT

4-2

A
South

A'
North



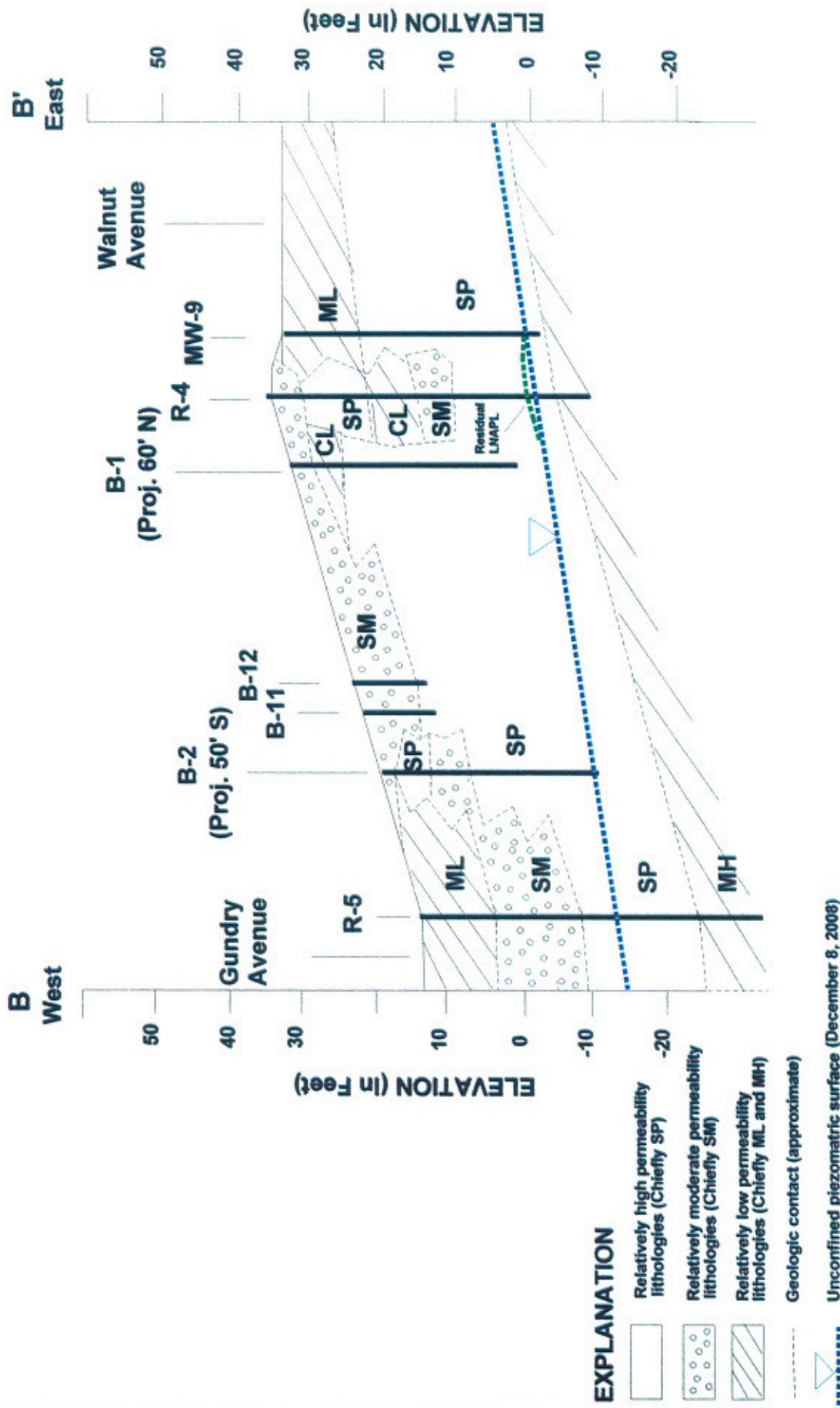
NOTE: Horizontal scale 1 inch = 100 feet
Vertical scale 1 inch = 20 feet

Testa Environmental Corporation

HYDROGEOLOGIC CROSS-SECTION A - A'
WESTERN PARCEL
FORMER CEMOIL REFINERY
SIGNAL HILL, CALIFORNIA

Earth Sciences & Environmental Specialists

PROJECT NO:	94-11-1008	FILE:	.62	FIGURE NO:	4-3
DATE:	January 2009	DRAWN BY:	SMT		



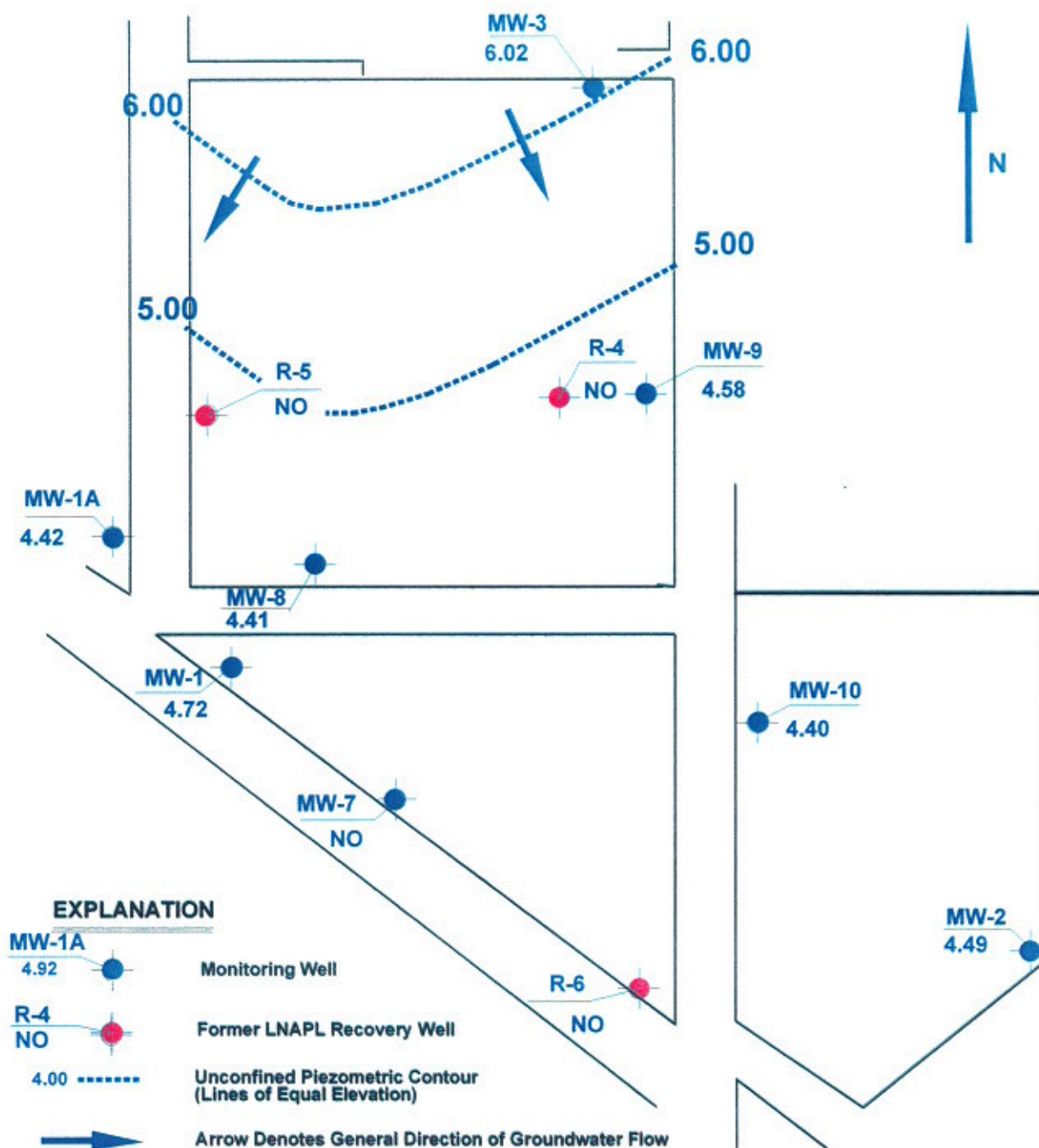
HYDROGEOLOGIC CROSS-SECTION B-B' **WESTERN PARCEL** **FORMER CEMOIL REFINERY** **SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO:	94-11-1008	FILE:	.62	FIGURE NO:	4-4
DATE:	January 2009	DRAWN BY:	SMT		

NOTE: Horizontal scale 1 inch = 100 feet
 Vertical scale 1 inch = 20 feet



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

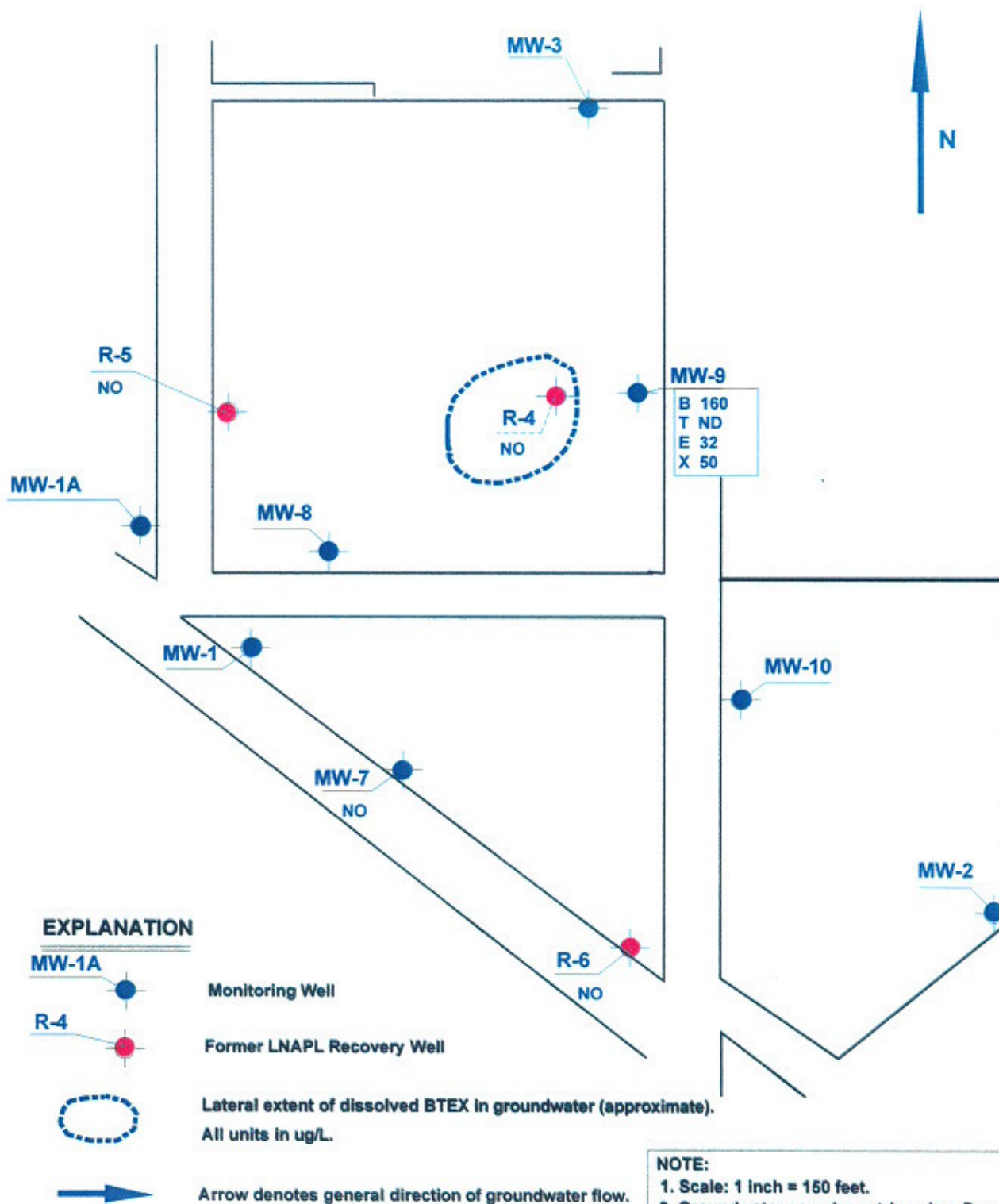
FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

4-5



**LATERAL EXTENT OF DISSOLVED BTEX
IN GROUNDWATER
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: **94-11-1008**

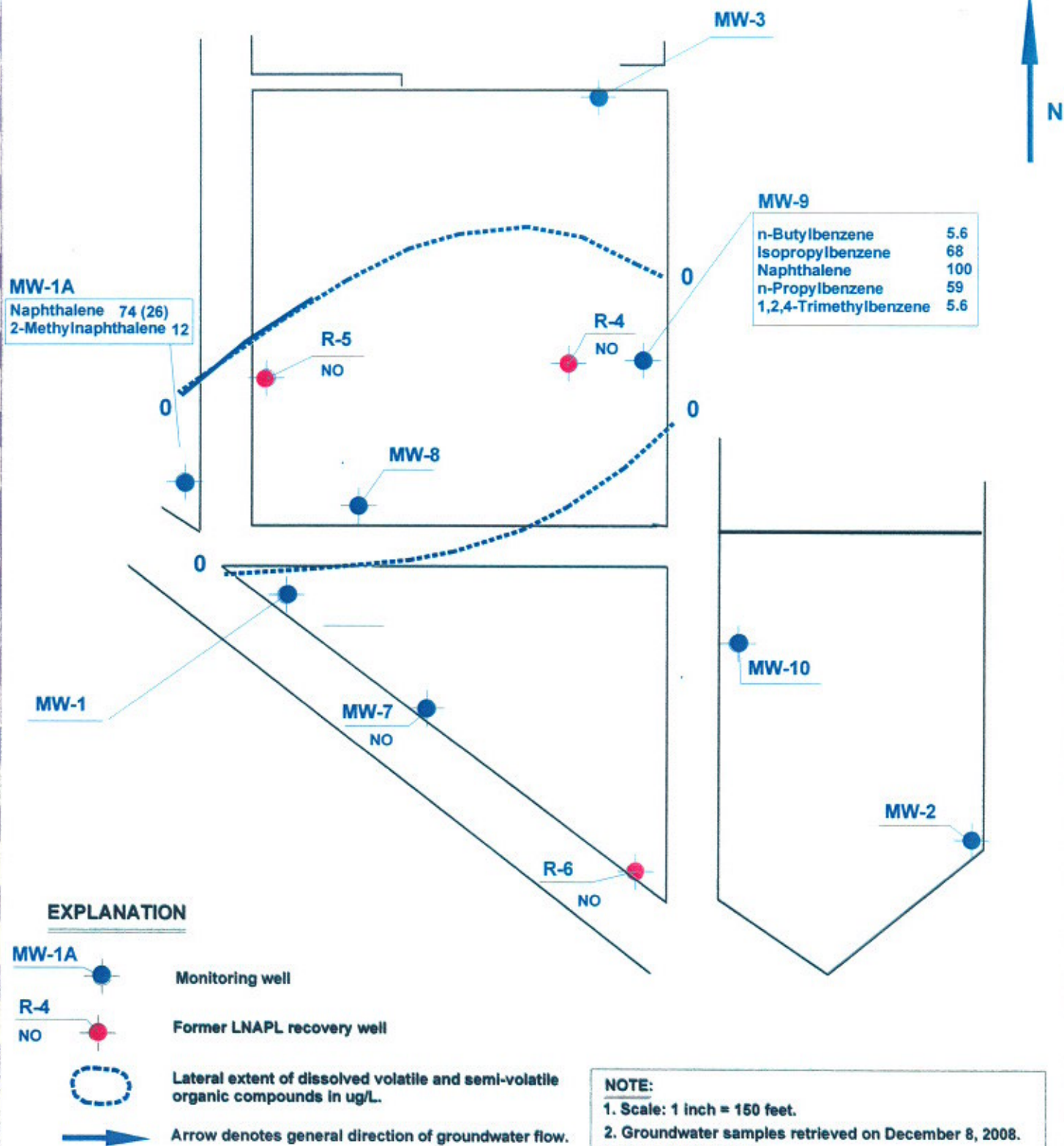
FILE: **.62**

FIGURE NO:

DATE: **January 2009**

DRAWN BY: **SMT**

5-1



**LATERAL EXTENT OF DISSOLVED VOLATILE
AND SEMI-VOLATILE ORGANIC COMPOUNDS
IN GROUNDWATER
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

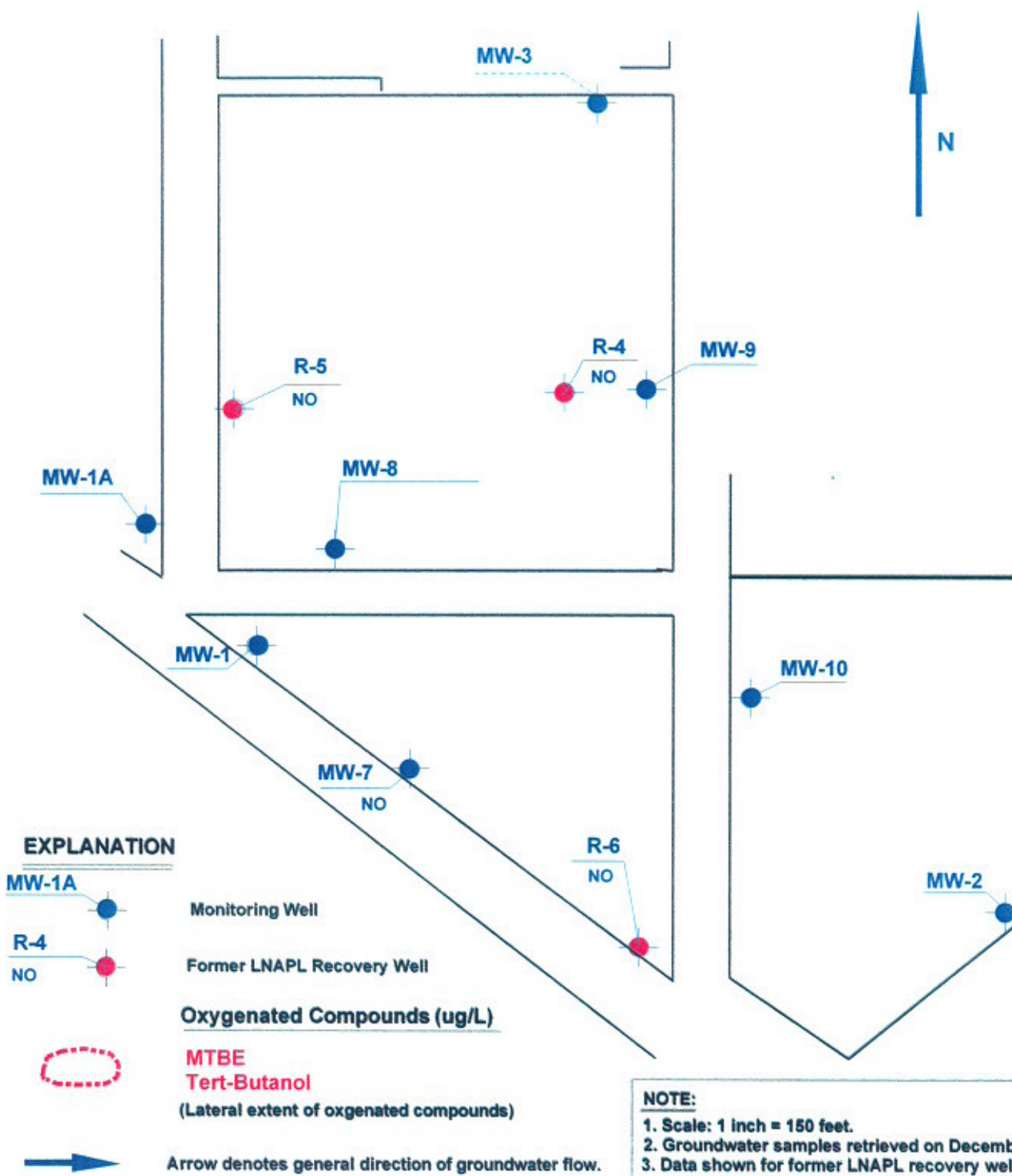
FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

5-2



NOTE:

1. Scale: 1 inch = 150 feet.
2. Groundwater samples retrieved on December 8, 2008.
3. Data shown for former LNAPL recovery well R-4 generated on December 4, 2002.
4. NO = Not operable.

**LATERAL EXTENT OF DISSOLVED
OXYGENATES IN GROUNDWATER
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

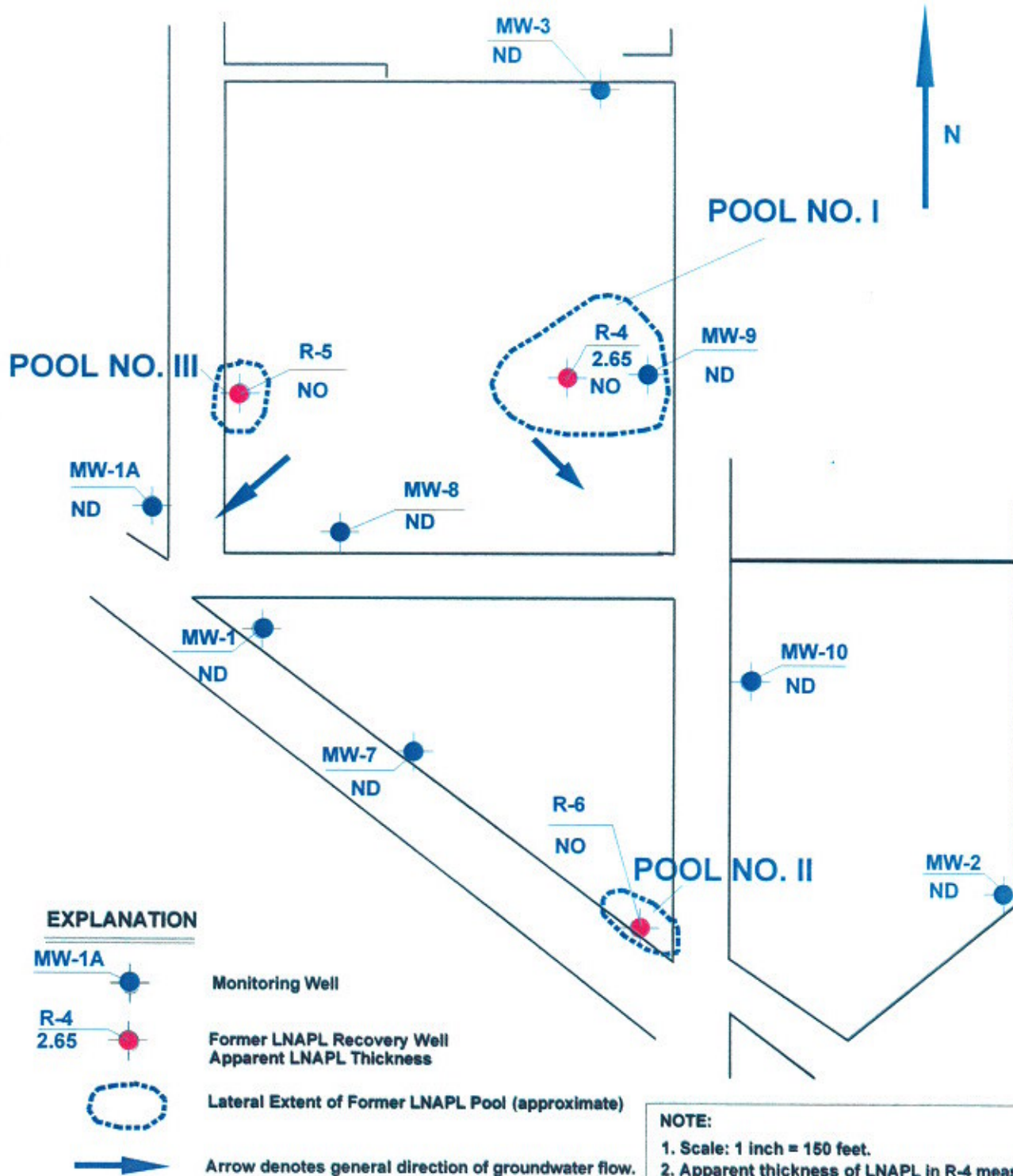
FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

5-3



**LATERAL EXTENT OF FORMER LNAPL POOLS
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

FILE: .62

FIGURE NO:

DATE: January 2009

DRAWN BY: SMT

6-1

APPENDIX A

AGENCY CORRESPONDENCE



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Cal/EPA Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 • Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

January 26, 2009

Mr. Harrison Chang
Signal Hill Holding Corporation
4354 Silva Court
Palo Alto, CA 94306

APPROVAL OF TIME EXTENSION REQUEST FOR SUBMITTING A REQUIRED TECHNICAL REPORT FOR SOIL AND GROUNDWATER REMEDIATION PURSUANT TO CALIFORNIA WATER CODE SECTION 13267, FORMER CHEMOIL REFINERY, 2020 WALNUT AVENUE, SIGNAL HILL, CALIFORNIA (SITE CLEANUP PROGRAM NO. 0435A, SITE ID NO. 2047W00)

Dear Mr. Chang:

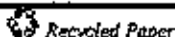
On January 14, 2009, we received a time extension request from your consultant, Mr. Stephen Testa of TEC, for additional time to complete the requirements in our November 19, 2008, Order with a due date of January 15, 2009. In TEC's letter, Mr. Testa admitted that he failed to notice the requirements for submission of a Phase I report and a Phase II Work Plan and the due date. He also indicated that he needs to collect information pertaining to the identity of the responsible parties, and resolve with the Signal Hill Holding Company (SHHC) legal counsel. Mr. Testa proposed that the Phase I Report be submitted no later than Monday, February 2, 2009; and, the Phase II Work Plan, including a conceptual site model be submitted no later than March 1, 2009.

We hereby grant your request and extend the deadline for a *Phase I Report* from January 15, 2009 to February 2, 2009; and for a *Conceptual Site Model and Phase II Work Plan* from January 15, 2009 to March 1, 2009, with the understanding that you will provide a comprehensive report/work plan as you proposed and meet the extended timeframe. A figure illustrating land uses within a one-mile radius from the subject property is required to be submitted with the Phase I Report which is due February 2, 2009.

These due date extensions are modifications to the existing California Water Code (CWC) section 13267 Order issued by the Executive Officer of this Regional Board on November 19, 2008.

Please note that in January 2009, MPO Walnut Partners, LLP (MPO) contacted this Regional Board. It is our understanding that MPO owns three small parcels that are part of the former ChemOil refinery. MPO has asked to be included in any future correspondence between SHHC and this Regional Board regarding remediation efforts for the subject property. Therefore, we require that you include MPO in your distribution list for future correspondence.

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

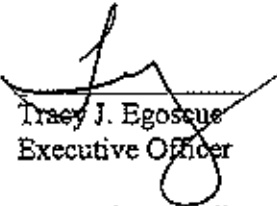
Mr. Harrison Chang
Signal Hill Holding Corporation

- 2 -

January 26, 2009

Your immediate attention is required. Should you have any questions, you must immediately contact Ms. Ann Lin by phone at (213) 576-6781 or through email at alin@waterboards.ca.gov.

Sincerely,



Tracy J. Egoscue
Executive Officer

cc: Stephen Testa, Testa Environmental Corporation. stesta@goldrush.com
Rick McAuley, MPO Walnut Partners, LLP. rick@aztecgrp.com

California Environmental Protection Agency



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Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Testa Environmental Corporation

19814 Jesus Maria Road • Mokelumne Hill, California 95245
Phone/Fax: (209) 754-1422
E-mail: stesta@goldrush.com

January 14, 2009

California Regional Water Quality Control Board --
Los Angeles Region
420 West Fourth Street, Suite 200
Los Angeles, CA 90013

Attention: Ms. Ann Lin

Subject: Request for Extension for Submittal of
Phase I Report and Phase II Proposed Workplan
Former Chemoil Refinery, SLIC No. 453A, Signal Hill, California

Dear Ms. Lin:

On behalf of the Signal Hill Holding Company (SHHC), an extension for submittal of the Phase I Report and Phase II Workplan for the above referenced site is requested. As noted in your November 18, 2008, correspondence, such documents were requested to be submitted to your office by January 15, 2009.

This justification for this request is twofold: In regards to the Phase I report, the draft report is completed; however, it does not currently include information pertaining to the number and identity of responsible parties. I am awaiting confirmation from SHHC legal counsel in regards to this information. In addition, I was copied on your November 18, 2008, correspondence; however, I did not become aware of its existence until you forwarded a copy to me on January 12, 2009. In such correspondence, a request for a figure that illustrates residential land use within a 1-mile radius from the subject property, on a scaled groundwater contour map, was requested to be included in the Phase I report. This specific work has thus not been started. Lastly, SHHC has decided to provide certain interested parties an opportunity to review the draft report, and provide constructive comments, prior to its submittal to your office. It is thus requested that the Phase I report be submitted to your office no later than Monday, February 2, 2009, and that the figure illustrating land use within a 1-mile radius from the subject property be incorporated into the Phase II report.

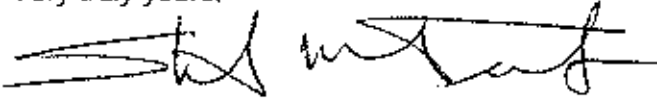
In regards to the Proposed Phase II workplan, there have been additional requests from interested parties to review the draft Phase II workplan, and offer constructive comments for our consideration, prior to its finalization and submittal to your office. Also, it was our intention to include as part of the Phase II workplan incorporation of all subsurface data generated to date, including such data generated by other consultants with time. The amount of subsurface geologic and analytical data is significant, and this information would be incorporated into a site conceptual model. Development of such model, which would benefit by the incorporation of this additional information, will require additional time to develop. To allow sufficient time for adequately address the comments provided in your November 18, 2008, correspondence, provide sufficient time for internal review, and assure that your office is provided a

comprehensive workplan for approval consideration, it is requested that such workplan be submitted to your office no later than Monday, March 1, 2009.

I trust that our request for an extension for submittal of the Phase I report, and proposed Phase II workplan, are deemed reasonable under the circumstances, and that the request is granted.

Please do not hesitate to contact me with any questions you may have. On behalf of SHHC, we appreciate your understanding, and forward to adequately addressing all outstanding comments and issues.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Stephen M. Testa', with a stylized flourish at the end.

Stephen M. Testa
President, Testa Environmental Corporation

Cc: Mr. Harry Chang, SHHC



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Cal/EPA Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

November 19, 2008

Mr. Harrison Chang
Signal Hill Holding Corporation
4354 Silva Court
Palo Alto, CA 94306

REQUIREMENT FOR TECHNICAL REPORT PURSUANT TO CALIFORNIA WATER CODE SECTION 13267, CONDITIONAL APPROVAL OF WORKPLAN TO ASSESS DATA GAPS FOR SOIL AND GROUNDWATER REMEDIATION, FORMER CHEMOIL REFINERY, 2020 WALNUT AVENUE, SIGNAL HILL, CALIFORNIA (SITE CLEANUP PROGRAM NO. 0435A, SITE ID NO. 2047W00)

Dear Mr. Chang:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) received a report titled as *"Revised Proposed Workplan, Former Chemoil Refinery, Signal Hill, California"* dated October 12, 2008, prepared by Testa Environmental Corporation (TEC) on behalf of Signal Hill Holding Corporation (SHHC). This work plan was modified from a previous plan submitted on September 15, 2008, to reflect the comments provided in an email between Regional Board staff and TEC on September 29, 2008.

In the workplan you propose to address onsite and offsite data gaps, identify areas requiring further clarification and assessment, and identify data/activities needed for developing a technically feasible and sound site closure strategy. TEC proposed the work to be performed in two phases.

BACKGROUND

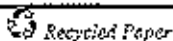
The site, on 6.45 acre, has been an open field (Subject Property) since 2001, and is located in an industrial, commercial, and residential mix-zone in Signal Hill. Subsurface investigations have been performed since 1985. Previous site investigations indicate that hydrocarbon-impacted soil extends from ground surface to the water table which is at a depth 18 feet below ground surface.

COMMENTS

The Regional Board staff has reviewed the revised proposed work plan, as well as the *Report on Quarterly Groundwater Quality Monitoring Program October 2008* dated October 15, 2008, and has the following comments:

1. We concur with proposed tasks No. 1 & 2 for identifying responsible parties and evaluating groundwater flow direction. As you proposed, we expect you to submit the results in a Phase I Report by January 15, 2009. In particular, you are required to illustrate residential land use

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within a 1-mile radius from the Subject Property, on a scaled groundwater contour map, to be submitted in the Phase I Report.

2. As stated in our letter dated January 8, 2002 (copy attached), the Regional Board requires replacement wells for MW-7, R-4, R-5, and R-6. However, no drilling work plan was submitted to the Regional Board subsequent to the January 2002 letter. Hence, we require a groundwater monitoring well installation work plan to be submitted by January 15, 2009. This work plan shall include a site conceptual model with graphic illustrations depicting site-specific hydro-geological condition, source(s), and the lateral and vertical extent of contaminants based on actual analytical data from the subject area and its vicinities. The required work plan shall address on-site and off-site data gaps, and propose drilling and sampling activities to re-establish adequate groundwater monitoring network. A detailed sampling and analysis plan is also required to be submitted in this work plan. Reporting limits for each analyte shall be tabulated and compared with California Maximum Contaminant Level (MCL) in order to ensure all reporting limits are equal or less than MCLs.

REQUIREMENTS

Pursuant to Section 13267 of the California Water Code, you are hereby directed to submit by **January 15, 2009** a *Phase I Report/Well Installation Work Plan* to access data gaps for developing site closure strategy. Furthermore, pursuant to California Water Code section 13268(b)(1), failure or refusal to submit the required technical reports by the deadline above may result in the Regional Board imposing administrative civil liability of up to \$1,000 for each day the report is not received after the deadline. These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date the violations first occurred, and without further warning.

RIGHT TO PETITION

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water 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.

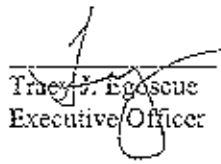
Mr. Harrison Chang
Signal Hill Holding Corporation

- 3 -

November 19, 2008

Your immediate attention is required. Should you have any questions, you must immediately contact Ms. Ann Lin by phone at (213) 576-6781 or through email at alin@waterboards.ca.gov.

Sincerely,


Tracy J. Egoscue
Executive Officer

Enclosed – Regional Board Letter, *Review of Proposal for Subsurface Assessment at Western Parcel* dated January 8, 2002.

cc: Stephen Testa, Testa Environmental Corporation. stesta@goldcrush.com

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Gray Davis
Governor

May 8, 2002

Mr. Ken Ezor
Signal Hill Holding Corporation
2365 East Sepulveda Boulevard
Long Beach, CA 90810-1944

**PROPOSED REMEDIAL ACTION PLAN
FORMER CHEMOIL REFINERY - EASTERN PARCEL, SIGNAL HILL, CALIFORNIA,
DECEMBER 14, 2001 (SLIC NO. 453A)**

Dear Mr. Ezor:

The Los Angeles Regional Water Quality Control Board (Regional Board) staff has received and reviewed the March 26, 2002 "Proposed Remedial Action Plan (RAP)", prepared by your consultant, Testa Environmental Corporation, for the referenced site. Based on our review of the document, you are authorized to implement the RAP, provided the following conditions are met:

1. When our Regional Board adopted a "Sources of Drinking Water" policy in 1989, we were concerned about shortages of water in the Los Angeles Region, and therefore all inland groundwaters are considered to be sources of drinking water, as designated in the Water Quality Control Plan (Basin Plan). No exclusions were made on the basis of salinity. Accordingly, our Basin Plan (which incorporates the Sources of Drinking Water policy) does not exclude protection of groundwaters on the basis of total dissolved solids (TDS) levels.

As a final point, we again point out that beneficial uses are designated on the basis of existing and future use. We recognize that there may be areas of groundwater in the Wilmington, Signal Hill, and Long Beach areas that may have TDS values exceeding 3,000 mg/L. This may be due to one or a combination of several factors, such as: past historical petroleum exploration, production and refining activities; and contamination from nonpoint sources (e.g. infiltration of contaminated runoff from agricultural activities and from industrial and urban activities). Elevated TDS levels due to these factors cannot be used as a reason not to remediate a contaminated site, unless the discharger believes that cleanup is technologically and/or economically infeasible and is not consistent with maximum benefit to the people of the state. In such a case, a discharger would need to comply with containment zone requirements set forth in State Water Resources Control Board Resolution 92-49 (Attachment D).

As such, your cleanup goals for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) shall follow Table 4-1 Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers in our Interim Site Assessment & Cleanup Guidebook (May, 1996).

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May 8, 2002

2. Given the current groundwater depth at approximately 29 feet below ground surface, the cleanup levels for TPH, and BTEX shall be as follows:

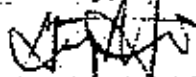
Benzene	0.011 mg/kg
Toluene	0.45 mg/kg
Ethylbenzene	2 mg/kg
Xylenes	5.3 mg/kg
TPH (C4 - C12)	100 mg/kg
TPH (C13 - C22)	100 mg/kg
TPH (C23 - C32)	1,000 mg/kg

3. The depth of excavation shall be determined by the extent of contamination above the cleanup levels.
4. A minimum of one soil sample shall be collected from the vicinity of former Tanks No. 14 and No. 15 for Polycyclic Aromatic Hydrocarbons (PAHs) screening using EPA Method 8310. The detection limits shall be sufficiently low for the evaluation of human health protection.
5. As required for other technical work performed at the site, all work must be performed by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer. A statement is required in the report that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project. All technical submittals must contain a wet ink signature and seal by one of the registered professionals.
6. Notify the Regional Board three working days in advance so the Regional Board staff can be present on site for site inspection.

Please submit a Soil Remediation Report by September 16, 2002.

Should you have any questions, please contact me at (213) 576-6736.

Sincerely,

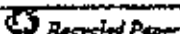


G. Jeffrey Hu, P.E.
Water Resource Control Engineer
Site Cleanup I Unit

/cc: Stephen M. Testa

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January 8, 2002

Mr. Ted Christensen
Chemoil Corporation
2365 E. Sepulveda Boulevard
Long Beach, CA 90810-1944

**REVIEW OF PROPOSAL FOR SUBSURFACE ASSESSMENT AT WESTERN PARCEL -
CHEMOIL REFINERY - 2020 WALNUT AVENUE, SIGNAL HILL, CALIFORNIA 93033
(SLIC NO. 453A)**

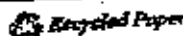
Dear Mr. Christensen:

The Los Angeles Regional Water Quality Control Board (Regional Board) staff has received and reviewed the Proposed Workplan for Subsurface Assessment at Western Parcel (Work Plan), dated November 18, 2001, prepared by Testa Environmental Corporation (TEC). The Work Plan proposes that all existing groundwater monitoring wells on the western portion of the site (Western Parcel), bounded by Walnut Avenue, 20th Street, and Gundry Avenue, will be measured and sampled. Four soil borings will be drilled on the subparcels of the Western Parcel and two soil borings will be drilled off site. Based on our review, you are authorized to implement the Work Plan with the following conditions:

1. The groundwater monitoring well, MW-7, and former recovery well, R-6, can not be abandoned because the previous investigation indicated that the groundwater up-gradient of these two wells is contaminated with total petroleum hydrocarbons (TPHs) and volatile organic compounds (VOCs). Therefore, MW-7 and R-6 shall be included in the survey and groundwater sampling plan.
2. Additional soil borings on the northern portion of the Western Parcel, which is defined as two separate subparcels in Figure No. 1 in the Work Plan, shall be drilled in the oil and grease area, and on the former tank area. At least one background soil sample away from the suspected source area shall be collected for comparison purposes.
3. All soil borings proposed within the Western Parcel and off-site must be drilled to the water table. Soil shall be sampled at depths of 1 foot below ground surface (bgs), 5 feet bgs, and at every 5 feet thereafter until groundwater is reached for each boring location. Groundwater samples must be collected at all boring locations by hydropunch.
4. To fully delineate the groundwater contamination plume on the Western Parcel and off-site toward the residential area south of 20th Street, more off-site groundwater and soil data are necessary. Based on the proposed locations at B-1 and B-2, off-site of the southwestern boundary of the Western Parcel, B-1 is approximately 300 feet away from the southwestern corner of the Site. The location of B-1 shall be adjusted relative to the locations of former borings GP-1, GP-2, and GP-3. One more

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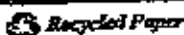
January 8, 2002

soil boring shall be proposed down-gradient of R-6. All the soil borings off-site from the southwestern boundary of the Site must be converted into groundwater monitoring wells.

5. Proposed soil boring identification numbers, B-1, B-2, B-3, and B-4 on the subparcels at the Western Parcel, and B-1 and B-2 for the off-site borings, were used in the previous investigation, and are being repeated. Do not reuse identifications that have already been used. The reuse of the identifications can easily lead to confusion. You are required to re-number your proposed borings in order to avoid confusion.
6. If free product is detected in any groundwater monitoring well during this investigation, free product must be recovered by hand-bailing immediately. The bailed free product must be properly contained and disposed of. A free product recovery progress report including, but not limited to, the volume of free product bailed, constituents of contamination, product thickness before and after recovery, shall be submitted to the Regional Board along with next groundwater monitoring report.
7. Permits for groundwater sampling associated with soil borings shall be obtained from applicable regulatory agencies.
8. Groundwater and soil samples shall be analyzed by a laboratory certified to do the analyses by the State of California. Laboratory reports and method detection limits (MDL) for soil and groundwater samples shall meet the requirements specified in the Regional Board May 1996, *Interim Site Assessment & Cleanup Guidebook*, Appendix R.
9. All soil and groundwater samples must be analyzed for volatile organic compounds (VOCs) by using EPA Method 8260B, semi-volatile organic compounds (SVOCs) by EPA Method 8270B, total petroleum hydrocarbons (TPHs) by EPA Method 8015M, and metals by EPA Method 6010B.
10. A map illustrating all soil borings from previous investigations and showing the analytical results shall be prepared for the Regional Board's review. The horizontal and vertical extent of the soil and groundwater plumes must be defined with isoconcentration contour using all available data in separate maps.
11. Please notify the Regional Board at least 10 working days prior to the start of field work.
12. Prior to the commencement of any field work, a site-specific Health and Safety Plan (H&SP) shall be prepared in accordance with Section 5192 of the California Code of Regulations (CCR), Title 8. The jurisdictional agency, the California Occupational Safety and Health Administration (Ca-OSHA), may inspect the drilling and sampling activities. The H&SP was not included in the Work Plan, a final copy of the H&SP, with signatures of all workers involved with the drilling and sampling activities, shall be submitted to the Regional Board prior to the start of field work.
13. In the Regional Board's letter, dated September 12, 2001, you were requested to monitor the groundwater quality quarterly for the entire site, including the Eastern and Western Parcels, by sampling all existing groundwater monitoring wells on-site and off-site. Groundwater monitoring

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Mr. Ted Chrestensen
Chevron Corporation

-2-

January 8, 2002

wells on the Eastern Parcel shall be sampled within the first quarter of 2002, and the report shall be submitted by the date specified in the September 12, 2002 letter.

14. A report summarizing all soil and groundwater sampling data collected during this investigation and the previous soil boring investigation on the Western Parcel, and the quarterly groundwater monitoring report for the Eastern Parcel, shall be submitted to the Regional Board by April 15, 2002. The reports shall include the conclusions from this investigation, recommendations for additional investigations and plans for site remediation, as needed.

Please address all the comments above. If you have any questions, please contact Dr. Eric Wu at (213) 576-6743.

Sincerely,

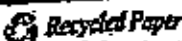


C. Eric Wu, Ph.D., P.E.
Site Cleanup I Unit

cc: Mr. Stephen Testa, Testa Environmental Corp., 19814 Jesus Maria Rd., Mokenutte Hill, CA 95245

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Gray Davis
Governor

September 12, 2001

Mr. Ted Chrestensen
Chemoil Corporation
2365 E. Sepulveda Boulevard
Long Beach, CA 90810-1944

REVIEW OF SUBSURFACE INVESTIGATION REPORTS AND GROUNDWATER MONITORING REPORTS - CHEMOIL REFINERY - 2020 WALNUT AVENUE, SIGNAL HILL, CALIFORNIA 93033 (SLIC NO. 453A)

Dear Mr. Chrestensen:

The Los Angeles Regional Water Quality Control Board (Regional Board) staff has received and reviewed the following reports:

- Additional Subsurface Assessment, dated August 1994, prepared by Testa Environmental Corporation (TEC).
- Additional Subsurface Assessment and Groundwater Monitoring, dated May 1999, prepared by TEC, and
- Biannual Interim Monitoring Report, dated July 1997, prepared by TEC.

Based on our review, we have the following comments:

1. You are required to submit information to show the depth to the drinking water aquifer, and a scaled map showing the locations of the production wells and surface water bodies within a one-mile radius of the site. The production well information must include the following: the well owner, the well identification number, well construction detail, and the status of the well.
2. The Regional Board requires a complete characterization of both soil and groundwater quality at the site, and remediation if necessary. Soil and groundwater contamination shall be delineated laterally and vertically to non-detect level. You are also required to develop site-specific soil cleanup levels by using the on-site data in accordance with the Regional Board's *Interim Site Assessment and Cleanup Guidebook*, dated May 1996.
3. At least one groundwater monitoring well at the hot spot is required to vertically define the thickness of the groundwater contamination plume. More groundwater monitoring wells shall be installed off-site to the southwestern edge of the property near 20th Street.
4. Groundwater collected from monitoring well MW-9, located near the western fence of the northern portion of the property, contains elevated concentrations of total petroleum hydrocarbons (TPHs), benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (MTBE). MW-9 is also possibly situated on a free product plume, and can not be considered as the background well.

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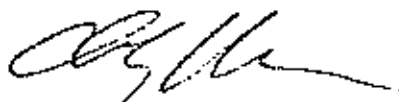
September 12, 2001

5. All soil and groundwater samples must be analyzed for volatile organic compounds (VOCs) by using EPA Method 8260B, semi-volatile organic compounds (SVOCs) by EPA Method 8270B, total petroleum hydrocarbons (TPHs) by EPA Method 8015M, and metals by EPA Method 6010B.
6. The horizontal and vertical extent of the soil and groundwater plumes must be defined with isoconcentration maps using all available data.
7. It appears that there are reports in addition to those that have been submitted to the Regional Board. Please provide a list of reports for previous investigations and remedial activities.
8. Free product detected at several locations on site must be recovered by hand-bailing immediately. The next investigation report must include information on the thickness of free product before and after recovery, volume bailed, and the composition of free product.
9. The quarterly groundwater monitoring program must be resumed. The quarterly groundwater monitoring report must be submitted by the fifteenth day following the end of the quarter, as shown in the following schedule with the first monitoring report due January 15, 2002:

<u>Report Period</u>	<u>Report Due Date</u>
January - March	April 15 th
April - June	July 15 th
July - September	October 15 th
October - December	January 15 th

As agreed during the meeting of August 30, 2001, at the Regional Board, groundwater samples will be collected and analyzed from all existing groundwater monitoring wells. A work plan, addressing all the comments above, for the property at east of the Walnut Avenue shall be submitted to the Regional Board by September 20, 2001. A work plan for the leased properties and the rest of the site must be submitted to the Regional Board by November 1, 2001. If you have any questions, please contact Dr. Eric Wu at (213) 576-6743.

Sincerely,



C. Eric Wu, Ph.D., P.E.
Site Cleanup I Unit

cc: Mr. Stephen Testa, Testa Environmental Corp., 19814 Jesus Maria Rd., Mokelumne Hill, CA 95245

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Peter M. Rooney
Secretary for
Environmental
Protection

California Regional Water Quality Control Board

Los Angeles Region

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101 Centre Plaza Drive, Monterey Park, California 91754-2138
Phone (626) 266-7500 • FAX (626) 266-2461



Pete Wilson
Governor

August 17, 1998

Mr. Ken Ezos
Chemoil Refinery Corporation
2365 East Sepulveda Boulevard
Long Beach, CA 90810-1544

CHEMOIL REFINERY, 2020 WALNUT AVENUE, SIGNAL HILL - REMEDIATION ACTIVITIES (FILE NO. 95-18)

We have received and reviewed your "Report on Additional Subsurface Assessment and Groundwater Monitoring" dated May 1998, submitted for the above-referenced site. The report transmits the results from the most recent site assessment activities completed, which includes the results from the soil matrix and groundwater samples collected at the site. Chemoil has ceased operation of the refinery and has initiated dismantling activities of some of the equipment and above and below ground structures at the site. Your consultant requested that this Regional Board issue a site closure letter and requested that the LNAPL monitoring and recovery program and the groundwater monitoring program be formally discontinued and wells abandoned at this time.

Analyses of the soil matrix samples collected during this phase of site assessment activities indicated that soil contaminated with petroleum hydrocarbons, primarily gasoline, diesel, and BTEX at levels exceeding our cleanup levels still remain, extending from ground surface to the groundwater table, and is considered a continuing threat to the underlying groundwater quality. Analyses of the groundwater samples collected from 7 groundwater monitoring wells located at the subject site during this phase of monitoring activities have detected petroleum hydrocarbons, with maximum concentrations of 21,500 µg/L (gasoline), 31,000 µg/L (diesel), 627 µg/L (benzene), 85 µg/L (toluene), 667 µg/L (ethylbenzene), and 807 µg/L (xylenes).

Based on the information submitted to date, we have determined that the concentrations detected in the underlying soil and groundwater exceed allowable levels and that the petroleum contaminated soil is a continuing source of groundwater contamination and needs to be remediated. At a minimum, a work plan for the remediation of the contaminated soil shall be submitted to this Regional Board by September 30, 1998, for our review. Once the soil is remediated, the need for groundwater remediation will be evaluated. The need to remediate the underlying groundwater will be determined following the review of the results from the soil remediation activities and additional groundwater monitoring data. In the interim, maintain all existing groundwater monitoring wells and sample the wells on a annual basis until soil remediation activities are completed.

Your consultant requested a meeting with Regional Board staff to discuss site closure considerations and requirements and we are willing to meet with representatives from Chemoil to

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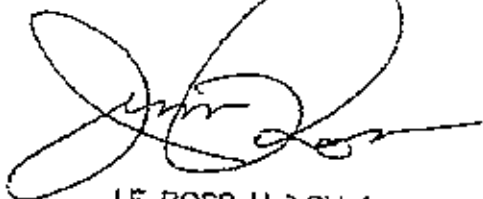
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Mr. Ezoe

- 2 -

August 17, 1992

discuss these issues. Please contact Ana Veloz-Townsend at (323) 266-7590 to schedule a date for this meeting and/or if you have any question regarding the above-mentioned information.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Inspector Tom Hayes, City of Long Beach Fire Department
Carmen Piro, Long Beach Health Department
Steve Testa, Testa Environmental

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APPENDIX B

GROUNDWATER GAUGING DATA

APPENDIX B – PART I

SUMMARY OF GAUGING DATA

APPENDIX B – PART I

SUMMARY OF GAUGING DATA

The top-of-casing elevations for all existing monitoring wells were re-established on January 23, 2008. Groundwater elevations based on re-established top-of-casing elevations, have been re-calculated for gauging data generated since June 2007 and are summarized herein.

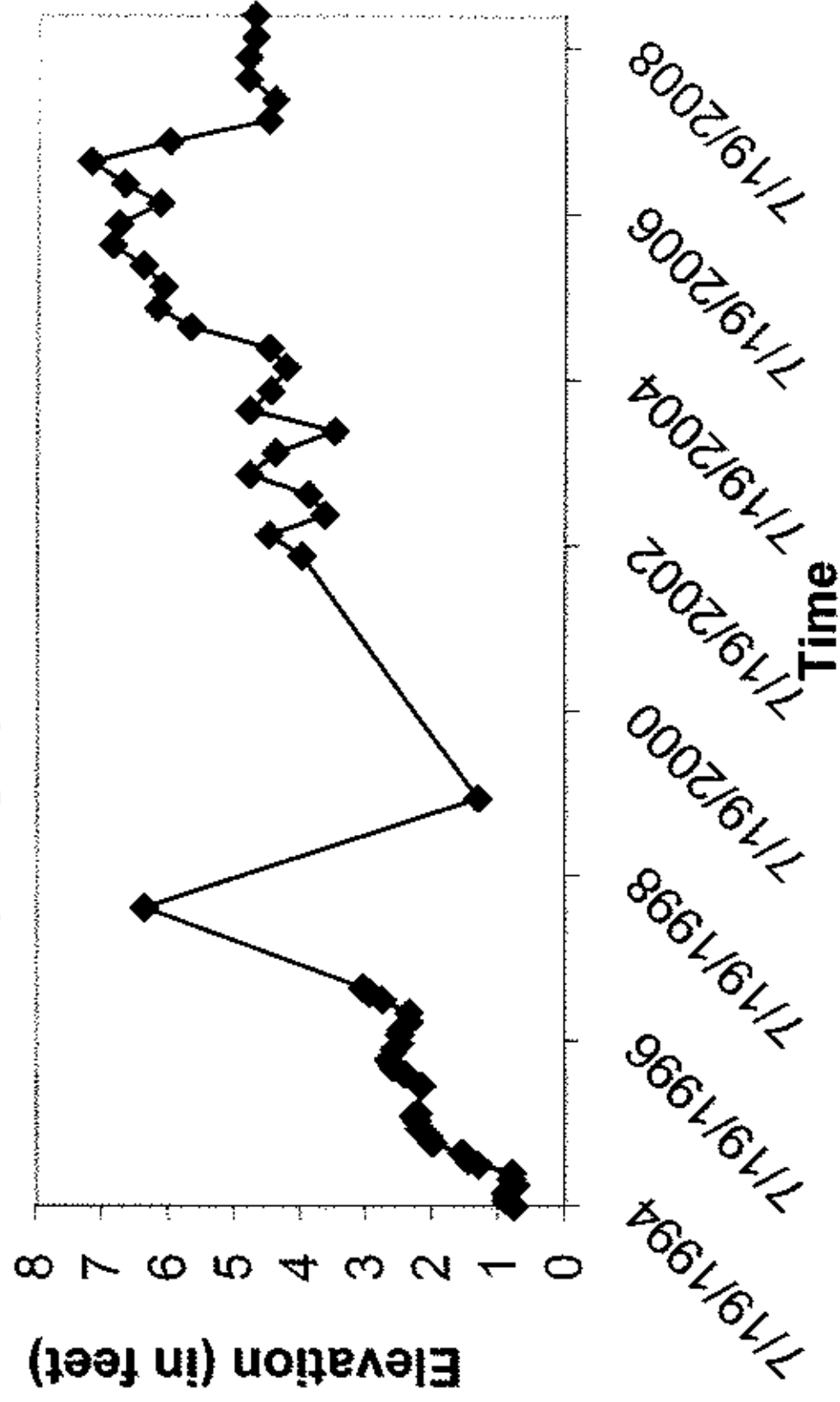
**TABLE B-1
SUMMARY OF GAUGING DATA**

Well No.	MW-1	MW-1A	MW-2	MW-3	MW-8	MW-9	MW-10
Well Depth (feet)	62.0	64.0	60.0	72.0	52.0	49.0	46.0
Top of Casing Elevation (feet)	22.22	23.02	29.99	48.02	25.91	36.88	31.60
Elevation of Unconfined Piezometric Surface (feet)							
12/09/08	4.72	4.42	4.49	6.02	4.41	4.58	4.40
09/05/08	4.72	4.72	4.59	6.32	5.61	4.98	4.70
06/09/08	4.82	4.92	4.89	6.82	4.91	5.08	4.40
03/06/08	4.82	4.92	4.49	6.82	4.81	4.88	4.40
12/05/07	4.42	5.07	5.19	7.52	5.86	5.03	4.60
09/06/07	4.52	4.57	4.59	6.37	4.46	4.78	3.40
06/04/07	6.02	4.77	4.09	6.20	4.61	6.08	4.00

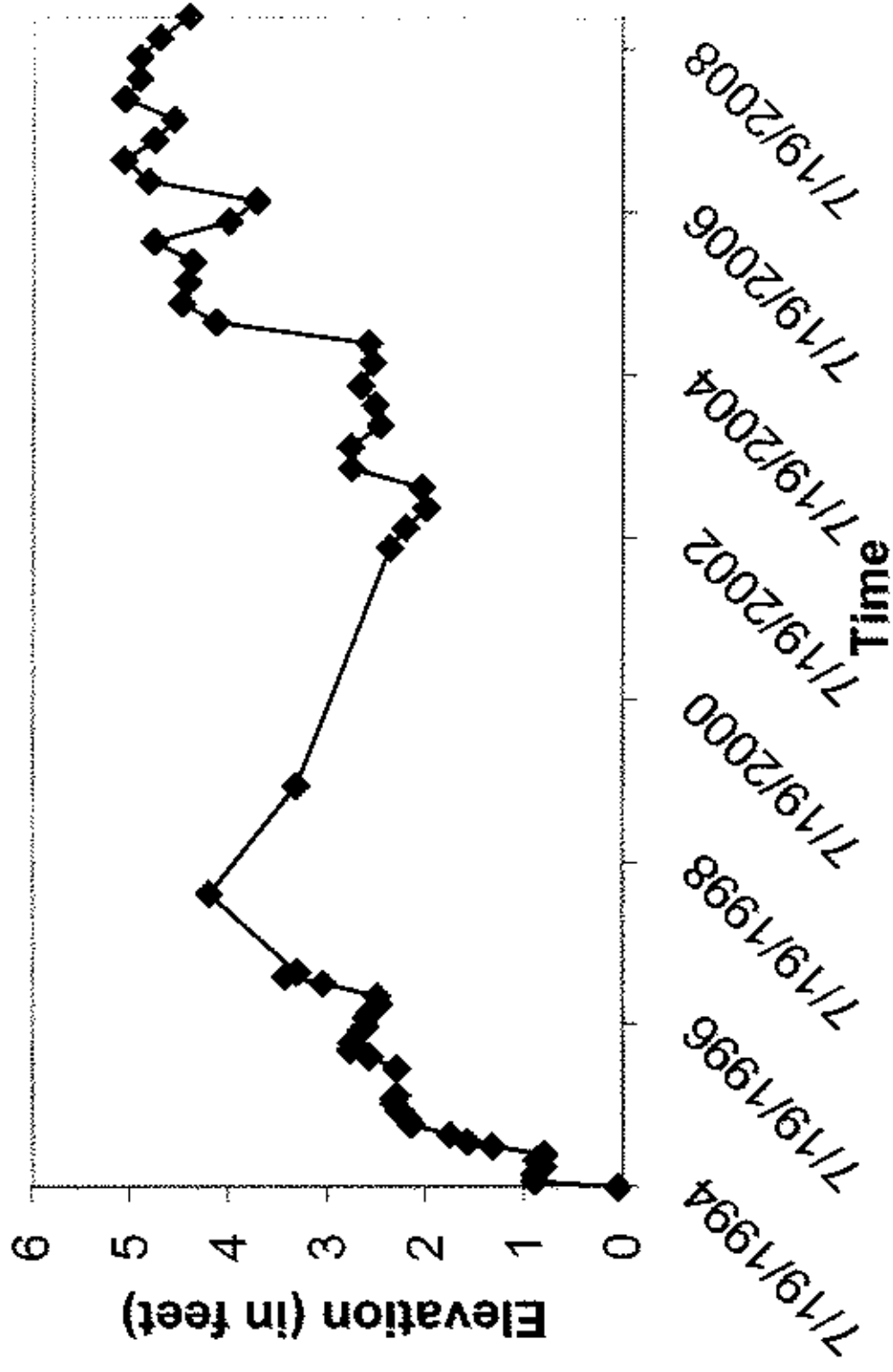
APPENDIX B – PART II

ANNOTATED HYDROGRAPHS

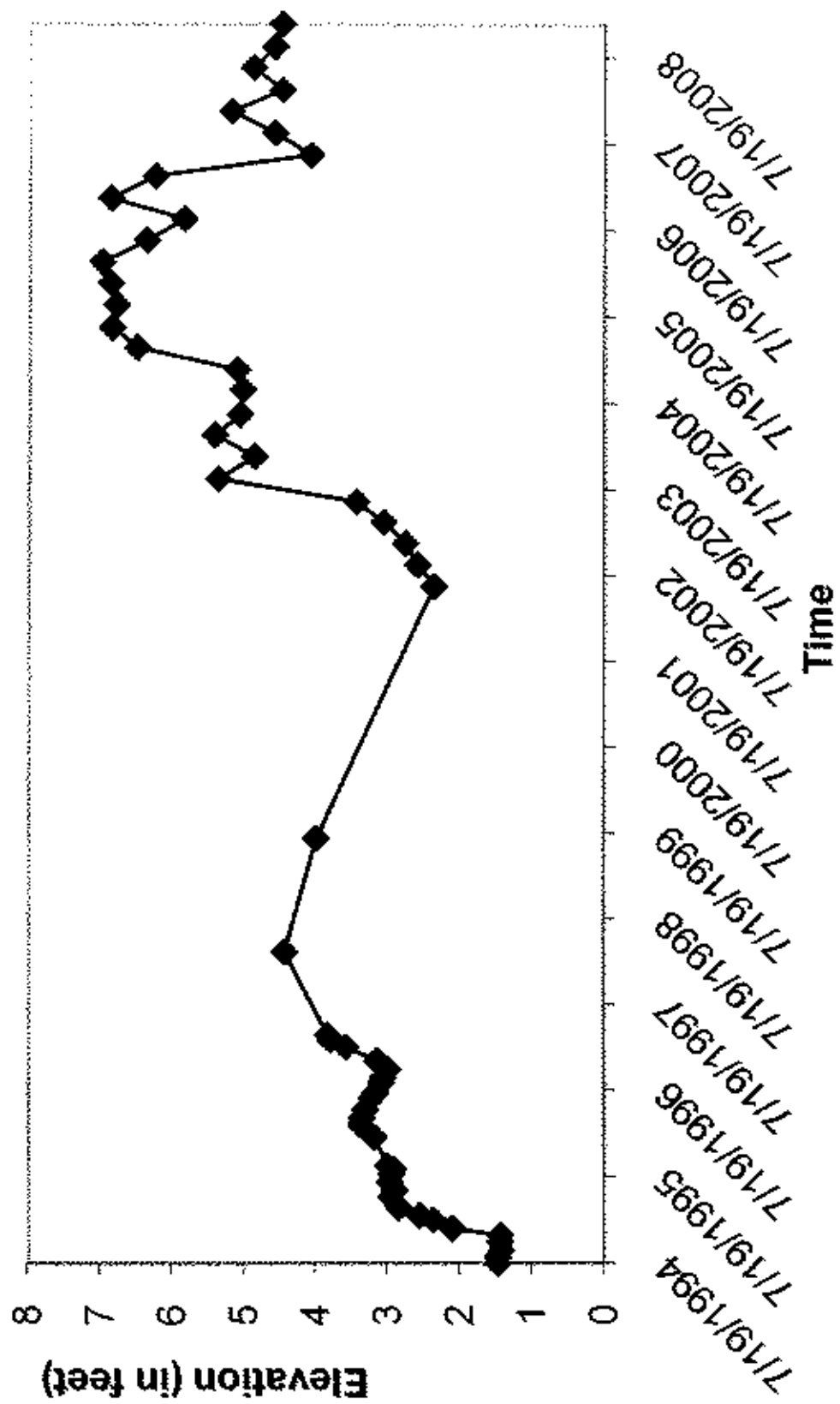
Hydrograph for MW-1



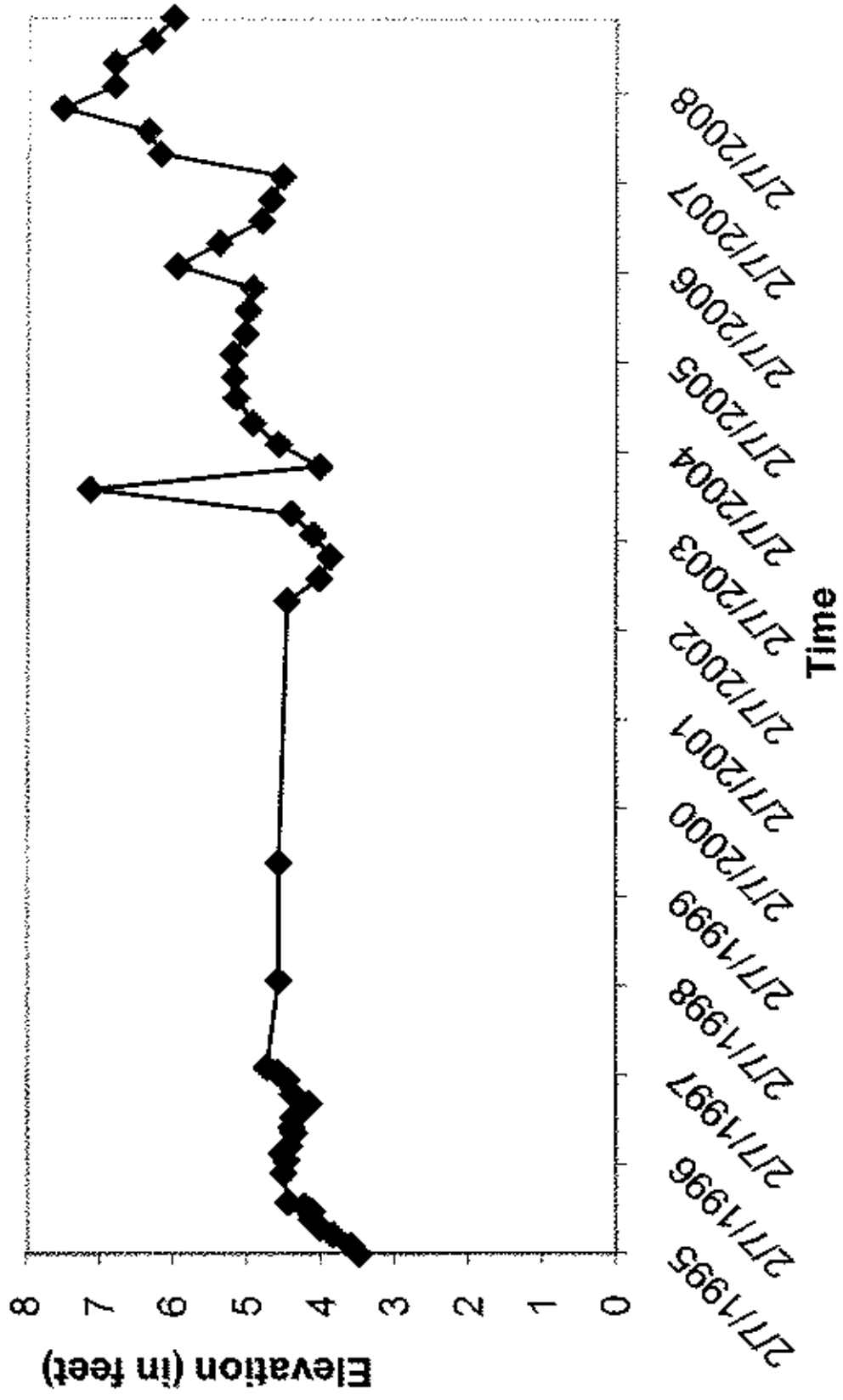
Hydrograph for MW-1A



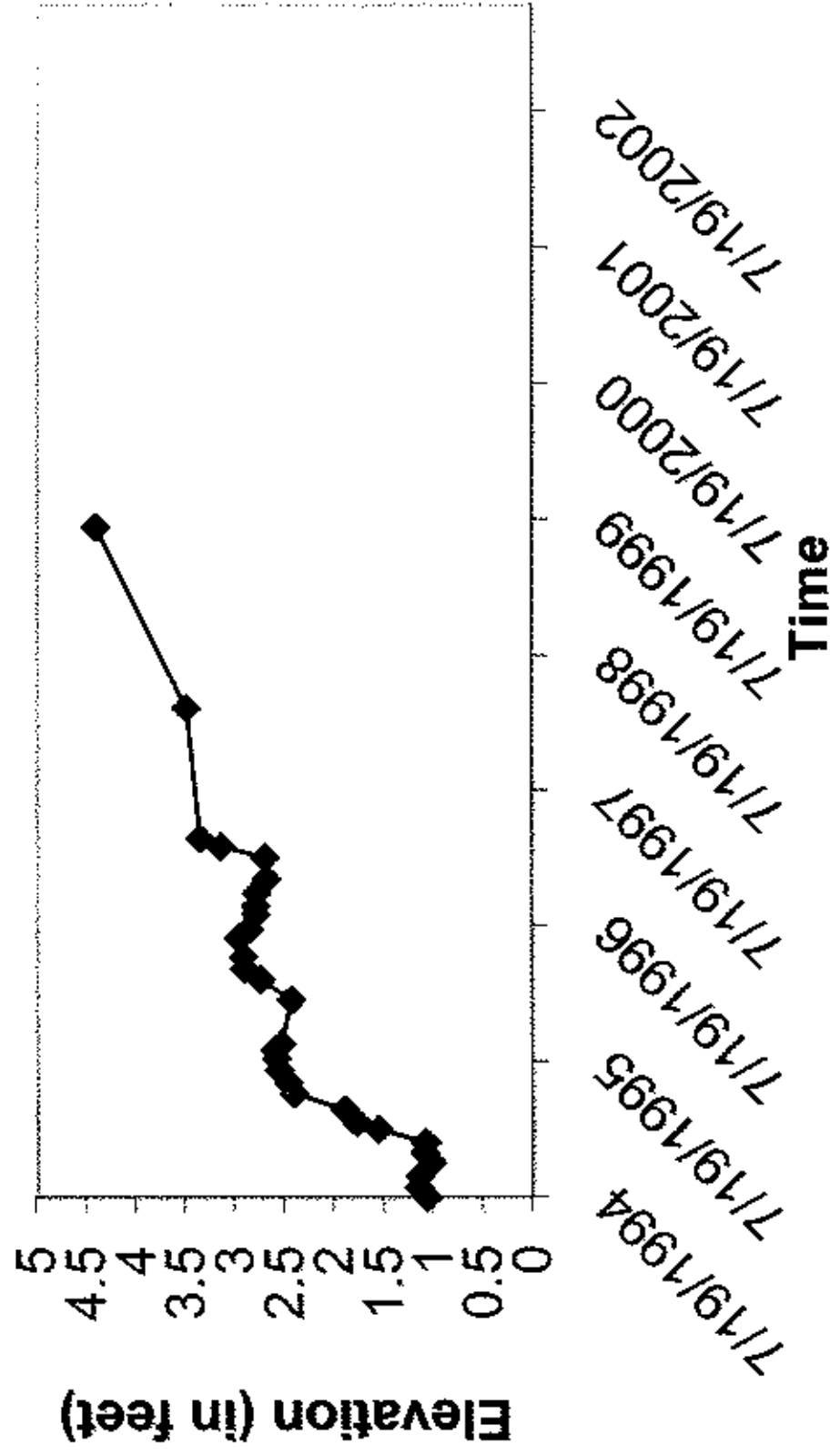
Hydrograph for MW-2



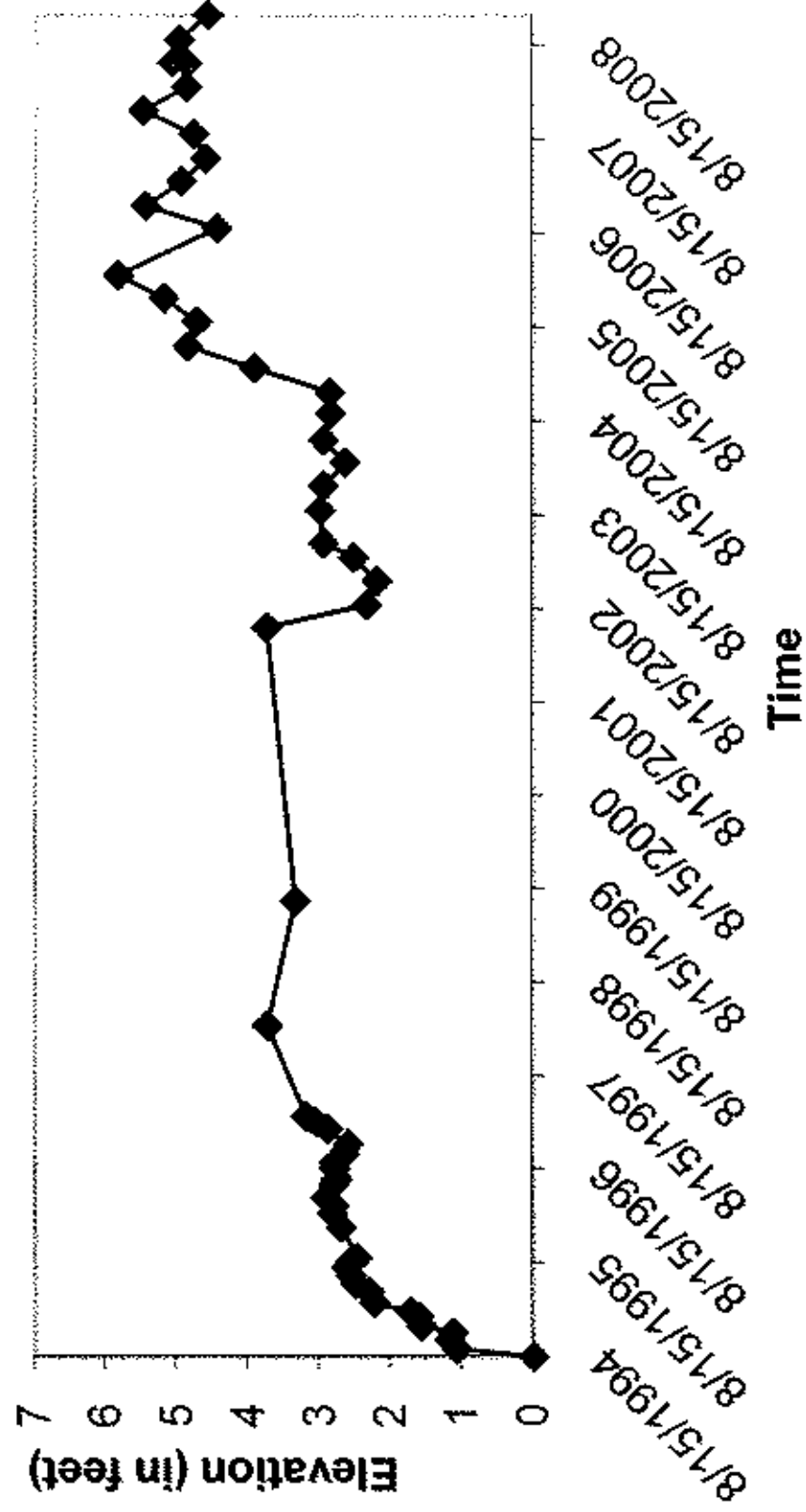
Hydrograph for MW-3



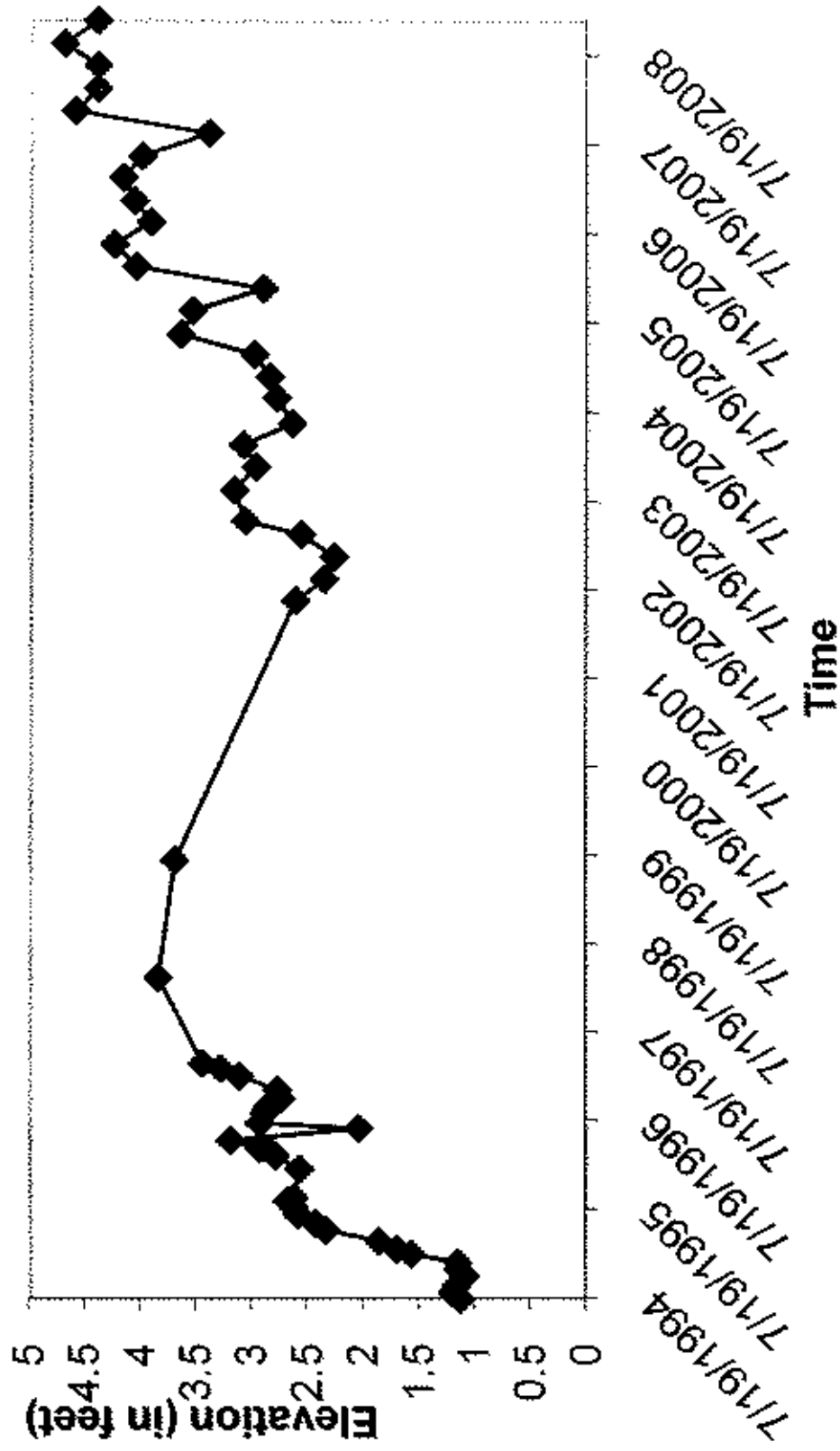
Historic Hydrograph for MW-7



Hydrograph for MW-9

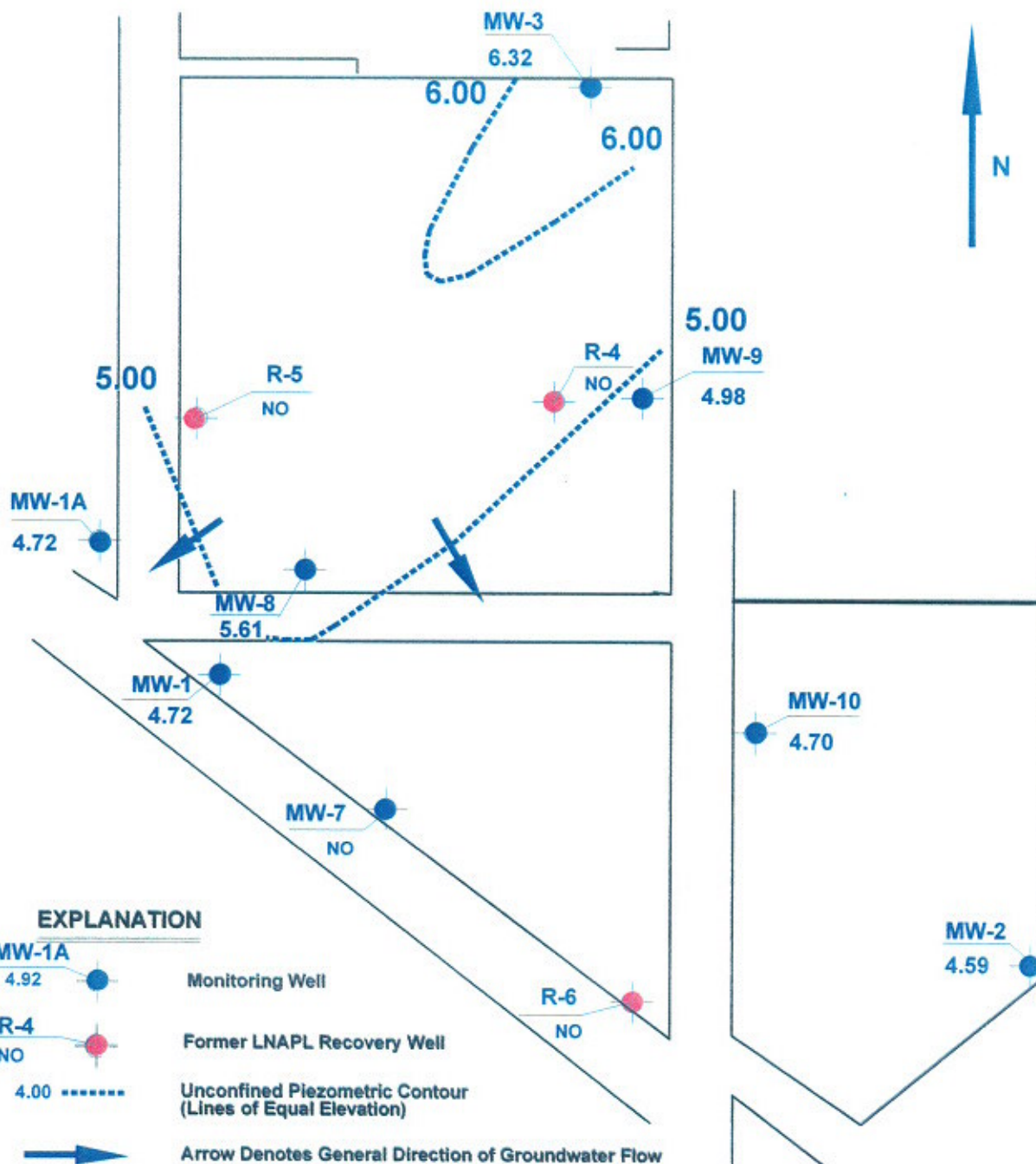


Hydrograph for MW-10



APPENDIX B – PART III

Unconfined piezometric contour maps (2007-2008)



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

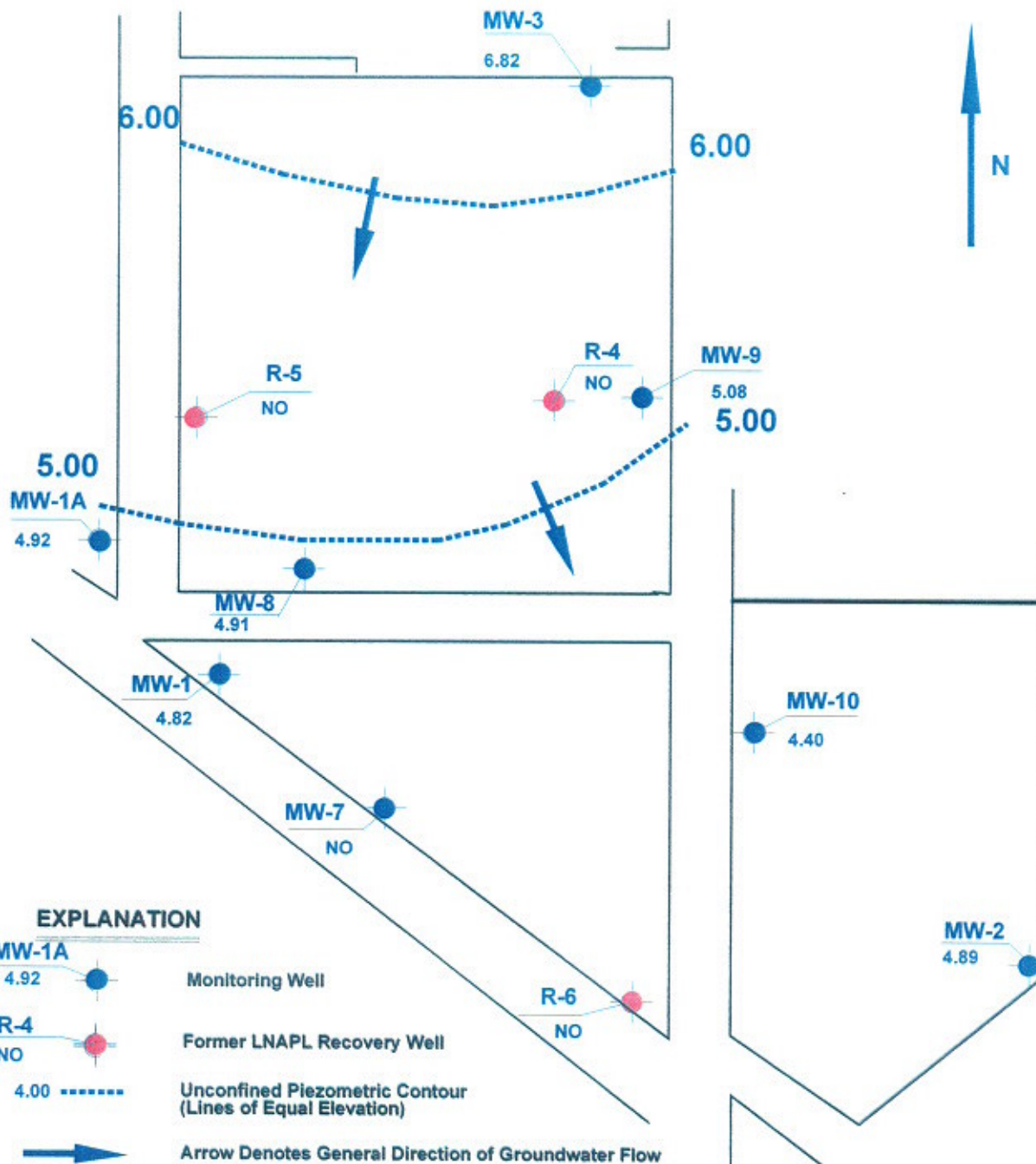
FILE: .61

FIGURE NO:

DATE: October 2008

DRAWN BY: SMT

B-1



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

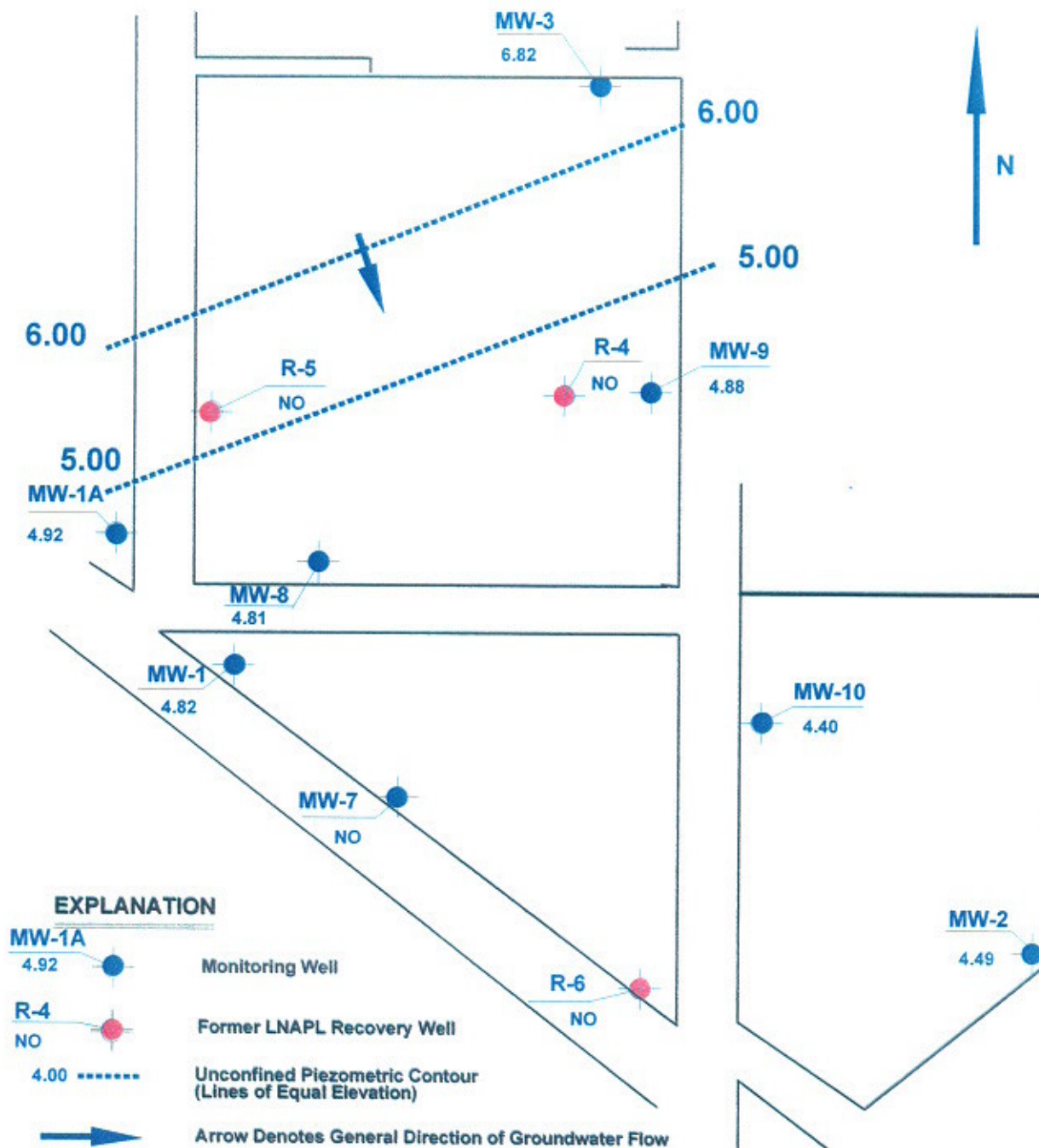
FILE: .60

FIGURE NO:

DATE: July 2008

DRAWN BY: SMT

B-2



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

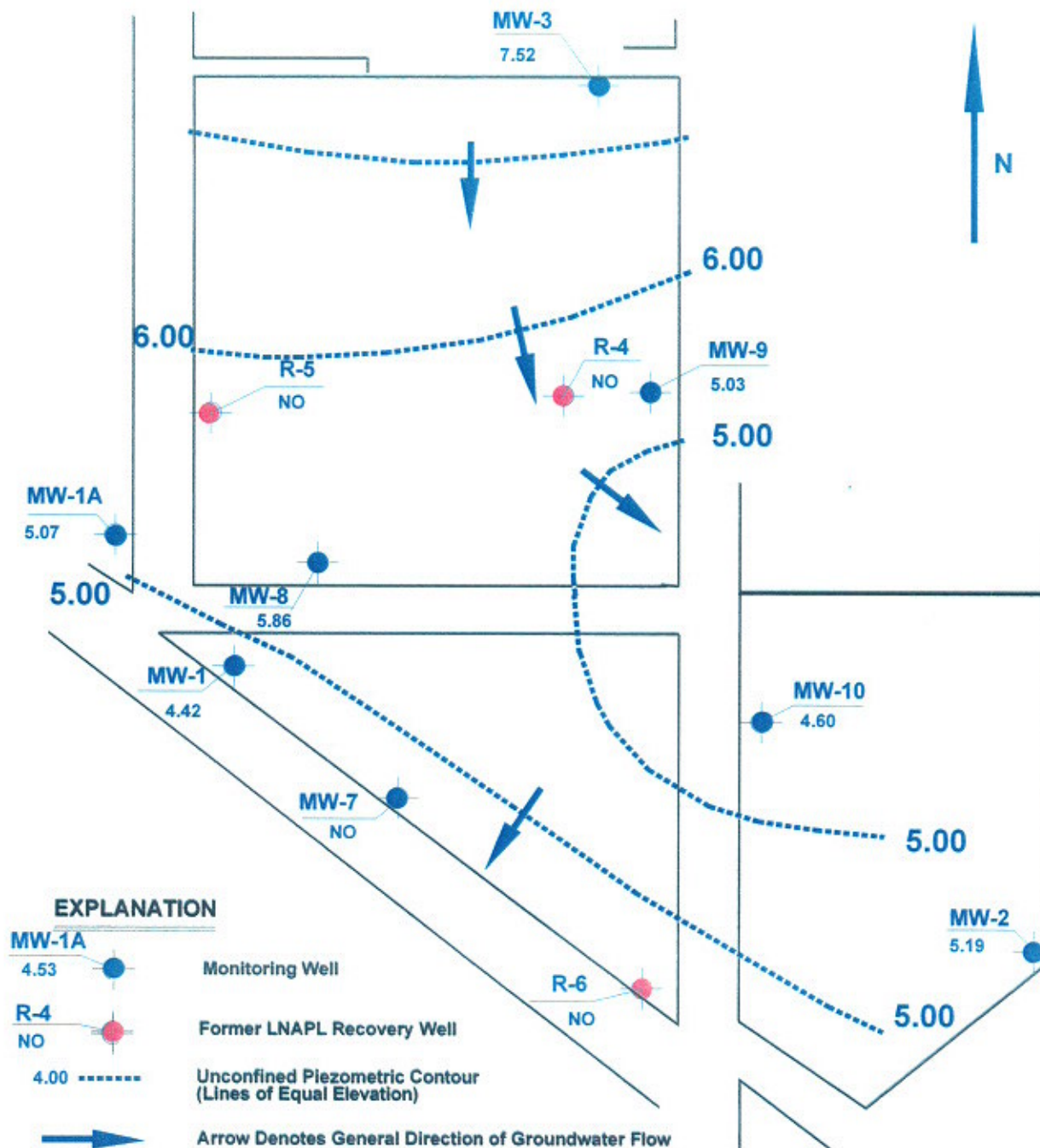
FILE: .59

FIGURE NO:

DATE: April 2008

DRAWN BY: SMT

B-3



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

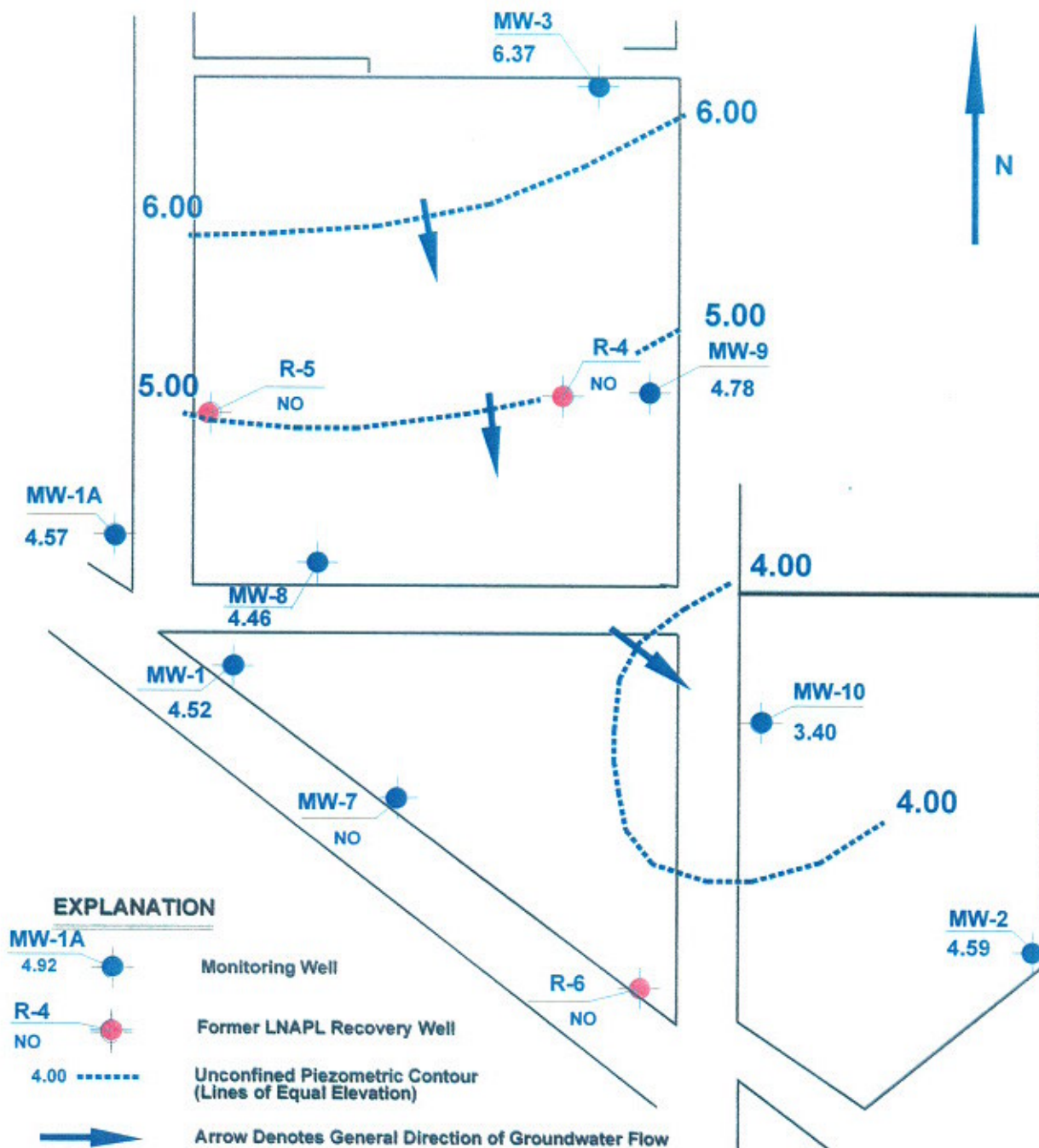
FILE: .58

FIGURE NO:

DATE: January 2008

DRAWN BY: SMT

B-4



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

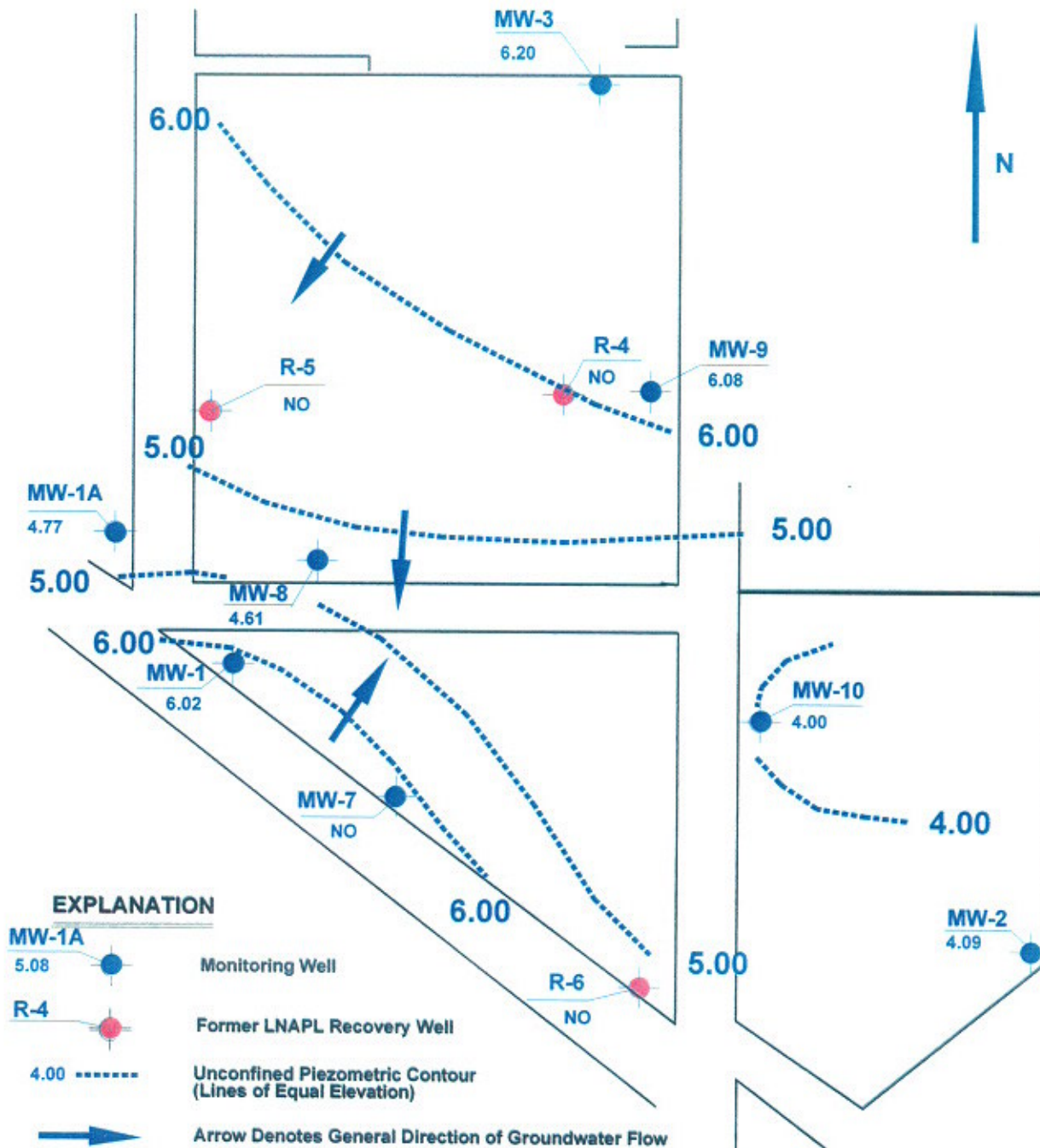
FILE: .57

FIGURE NO:

DATE: October 2007

DRAWN BY: SMT

B-5



**UNCONFINED PIEZOMETRIC CONTOUR MAP
FORMER CHEMOIL REFINERY
SIGNAL HILL, CALIFORNIA**

Testa Environmental Corporation

Earth Sciences & Environmental Specialists

PROJECT NO: 94-11-1008

FILE: .56

FIGURE NO:

DATE: July 2007

DRAWN BY: SMT

B-6

APPENDIX C

GROUNDWATER QUALITY

APPENDIX C – PART I

GROUNDWATER SAMPLING PROTOCOL

APPENDIX C (Part I)

MONITORING WELL SAMPLING PROTOCOL

Presented in this appendix is a synopsis of the methodology employed by TEC personnel and representatives for retrieval of representative groundwater samples for all sampling events performed at the former refinery site. The sampling procedures followed by TEC are consistent with those recommended within the State of California Water Resources Control Board LUFT Manual (1989), the State Department of Water Resources Bulletin 74-81 (Water Well Standards: 1981), and the EPA Groundwater Handbook, Volume II-Methodology (1991), among others (refer to references contained herein).

C-1 WELL EVACUATION OR PURGING TECHNIQUE

Depth-to-groundwater is measured in each well prior to evacuation using either an electronic water level indicator or interface probe in order to calculate well casing volume. Different purging methods are followed for shallow wells with smaller well volumes which screen essentially unconfined aquifers (e.g., 75-foot well depth or less, or static water column height less than or equal to 40 feet) versus deeper wells or those wells with large casing volumes (e.g., greater than 40-foot height of static water column): such deeper wells frequently screen confined or semi-confined aquifers. These differences in purging methodology reflect both the need to achieve time efficiency and acquire representative samples (e.g., greater than 80 percent aquifer water), as well as the desire to minimize the volume of contaminated groundwater requiring special handling as hazardous waste, per CFR 40 Part 261 and CCR Title 22, Division 4.5 Regulations.

All wells currently installed at the site screen a shallow unconfined aquifer. The well evacuation and sampling technique for the shallow, unconfined-aquifer wells is accomplished with the use of dedicated disposable teflon bailers featuring bottom check balls. During well purging, multiple field measurements of pH, specific conductance, dissolved oxygen, and temperature of the groundwater are taken with a Hydac pH-conductivity meter generally after purging of one well volume. When the readings for each field parameter have stabilized to within one-tenth of a pH unit (but no before a minimum of three casing volumes have been evacuated), groundwater is considered representative of the formation fluid.

A minimum of three well volumes are evacuated for all shallow wells screening unconfined aquifers, given the greater potential for groundwater/atmosphere gas exchange (i.e., particularly CO₂ escape) or recharge of non-representative pore fluids through the vadose zone above unconfined aquifers, versus those deeper, semi-confined or confined aquifers which are not as readily affected directly by atmospheric chemistry. Stabilization of field parameters (pH, conductivity, temperature) generally occurs once three to five well volumes have been purged.

C-2 DECONTAMINATION

Following purging and sampling of deep wells with the submersible pump, the pump and associated discharge lines or hoses are decontaminated, consisting of rinsing with potable water, sodium bicarbonate detergent, and distilled water. Because dedicated teflon bailers are utilized for shallow well purging and sampling, decontamination for these wells is unnecessary, and thus cross-contamination potential is eliminated. Discharge line materials consist of either teflon tubing, wire-mesh-reinforced rubber hose or 1/2-inch diameter Schedule 40 PVC pipe attached in 10-foot sections by standard threaded PVC couplings. Couplings are glued to the PVC pipe sections using either Oatey or EZ-WELD PVC Primer and Cement, both of which contain the compounds methylethylketone (MEK), tetrahydrofuran, cyclohexanone and acetone. Reinforced hose is preferably utilized as discharge line, where possible, in order to minimize introduction of PVC-cement compounds into the groundwater sample. Should these compounds be present, however, they are easily discriminated in chromatograph analysis, if pump blanks or discharge-line blanks are collected for comparison.

All purged fluids and submersible pump decontamination rinsate are either removed via vacuum truck or are contained in 55-gallon DOT drums, which are appropriately labeled with contents, date and well number. DOT drums are either subsequently transported to an off-site TSD facility for disposal, or their contents are introduced into an available on-site wastewater treatment system.

C-3 SAMPLE COLLECTION AND STORAGE

After the well is sufficiently evacuated, samples are collected at a low flow rate to minimize volatilization, using the dedicated disposable teflon bailers or submersible pumps. Samples are collected in containers with the appropriate preservative, if required, as provided by the analytical laboratory, in accordance with methods and procedures for wastewater/effluent preservation described in 40 CFR Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, EPA "600 Series"; or in EPA SW-846 "Test Methods for Evaluating Solid Waste", EPA "8,000 Series"). Samples are introduced into their appropriate containers by overfilling to eliminate headspace and trapped air bubbles which might otherwise hasten volatilization of purgeable target compounds.

Each sample container is clearly marked with the well number, project name, date and time of collection, and the laboratory analyses requested. Sample containers are stored at 4°C in coolers with blue ice packs immediately after collection. The samples are stored in this manner until picked up by representatives of the analytical laboratory, or delivered directly to the State DOHS-certified laboratory by TEC personnel. Samples are generally delivered to the laboratory within a 24-hour period following sample collection.

C-4 CHAIN-OF-CUSTODY

A chain-of-custody record is maintained on all samples, either a standard TEC form or a form provided by the analytical laboratory. The laboratory custodian verifies that the sample containers are properly secured and correctly identified upon receipt. The samples are then relinquished by the appropriate TEC representative subsequent to laboratory receipt signature. The laboratory employees enter each container into a log book and assign the work to an analyst.

C-5 QUALITY ASSURANCE/QUALITY CONTROL

For purposes of QA/QC, a minimum of one duplicate sample and one "pump blank" per analytical sample batch are typically collected by TEC, unless more of such samples are requested by the lead regulatory agency or client. As a rule, one pump blank or discharge line blank is collected following decontamination of the submersible pump following purging/sampling of each deep well. If PVC piping is utilized as a discharge line for the submersible pump, one pump blank is also collected prior to purging the first deep well in the series.

C-6 REFERENCES

California Department of Water Resources, 1981, Water Well Standards: State of California, 92p.

California Water Resources Control Board, 1989, Revised Leaking Underground Fuel Tank Field Manual, 62p.

U.S. Environmental Protection Agency, 1986, Test Methods for Evaluating Solid Waste-EPA SW846, 3rd Edition; prepared by the Office of Solid Waste and Emergency Response, 538p.

U.S. Environmental Protection Agency, 1991, Groundwater Handbook, Volume II: Methodology; prepared by Office of Research and Development, 141p.

U.S. Office of the Federal Register, 1989. Code of Federal Regulations: CFR 40, Part 136 -
Guidelines for Establishing Test Procedures for the Analyses of Pollutants under the Clean
Water Act: revised edition dated July 1, 1989.

GROUNDWATER SAMPLING FORM

Project Name: Former Chemoil Refinery Site				Date: December 9, 2008				Purge Method: Disposable bailers			
Project No. TEC 94-11-1008				Field Representative(s): Justin Stephanian Blake Fletcher				Sheet 1 of 3			
Well No.	MW-10			MW-2			MW-1				
Well Depth (ft)	46.00			60.00			62.00				
Depth to Water (ft)	27.20			25.50			17.50				
Water Column Thickness (ft)	18.80			34.50			44.50				
Casing Volume (gal)	12.52			22.98			29.64				
Volume Purged (gal)	25.00			25.00			30.00				
Field Parameters	Time	pH	Temp	TDS (mg/L)	DO (ppm)	Time	pH	Temp	TDS (mg/L)	DO (ppm)	
	6:25	7.1	72	1,100	.45	7:35	7.1	72	2,250	.45	8:40
	6:35	7.0	72	1,250	.40	7:50	7.1	72	2,200	.45	8:50
	6:45	7.0	72	1,050	.45	8:00	7.2	72	2,350	.40	9:00
	6:55	7.1	72	1,100	.45	8:20	7.1	72	2,200	.40	9:15
	7:05	7.1	72	1,150	.45	8:30	7.1	72	2,150	.45	9:30
Comments:	Slight odor or VOCs			No odor or VOCs			No odor or VOCs				
Testa Environmental Corporation 19814 Jesus Maria Road Mokelumne Hill, California 95245 Phone: (209) 754-1422 E-mail: stesta@goldrush.com											

GROUNDWATER SAMPLING FORM															
Project Name: Former Chemoil Refinery Site				Date: December 9, 2008				Purge Method: Disposable bailers							
Project No. TEC 94-11-1008				Field Representative(s): Justin Stephanian Blake Fletcher											
Well No.	MW-1A			MW-3											
Well Depth (ft)	34.00			72.00											
Depth to Water (ft)	18.60			42.00											
Water Column Thickness (ft)	15.40			30.00											
Casing Volume (gal)	10.26			19.98											
Volume Purged (gal)	25.00			30.00											
Field Parameters	Time	pH	Temp	TDS (mg/L)	DO (ppm)	Time	pH	Temp	TDS (mg/L)	DO (ppm)	Time	pH	Temp	TDS (mg/L)	DO (ppm)
	10:00	7.1	72	3,000	.45	11:10	7.1	72	3,900	.45	12:20	7.1	72	5,700	.50
	10:10	7.2	72	2,900	.45	11:15	7.1	72	4,100	.45	12:30	7.2	72	5,600	.45
	10:20	7.1	72	3,100	.40	11:25	7.2	72	4,000	.40	12:40	7.1	72	5,850	.45
	10:30	7.1	72	2,500	.45	11:35	7.1	72	3,950	.45	12:50	7.1	72	5,900	.50
	11:40	7.1	72	3,000	.40	11:45	7.1	72	4,100	.45	13:05	7.1	72	5,800	.50
Comments:	Slight hydrocarbon odor; no VOCs				Strong hydrocarbon odor; no VOCs				Slight hydrocarbon odor; no VOCs						
Testa Environmental Corporation 19814 Jesus Maria Road Mokelumne Hill, California 95245 Phone: (209) 754-1422 E-mail: stesta@goldrush.com															

Testa Environmental Corporation
19814 Jesus Maria Road
Mokelumne Hill, California 95245
Phone: (209) 754-1422
E-mail: stesta@goldrush.com

GROUNDWATER SAMPLING FORM

Project Name: Former Chemoil Refinery Site		Date: December 9, 2008					Purge Method: Disposable bailers								
Project No. TEC 94-11-1008		Field Representative(s): Justin Stephanian Blake Fletcher					Sheet 3 of 3								
Well No.	MW-8														
Well Depth (ft)	52.00														
Depth to Water (ft)	21.50														
Water Column Thickness (ft)	30.50														
Casing Volume (gal)	20.31														
Volume Purged (gal)	25.00														
Field Parameters	Time	pH	Temp	TDS (mg/L)	DO (ppm)	Time	pH	Temp	TDS (mg/L)	DO (ppm)	Time	pH	Temp	TDS (mg/L)	DO (ppm)
	13:30	7.1	72	4,000	.45										
	13:40	7.1	71	4,100	.50										
	13:50	7.2	72	3,950	.50										
	13:55	7.1	71	3,800	.50										
	14:10	7.1	71	3,950	.45										
Comments:	No hydrocarbon odor; no VOCs														
Testa Environmental Corporation 19814 Jesus Maria Road Mokelumne Hill, California 95245 Phone: (209) 754-1422 E-mail: stesta@goldrush.com															

APPENDIX C – PART II

GRAPHS ILLUSTRATING DISSOLVED HYDROCARBONS FLUCTUATIONS WITH TIME

APPENDIX C

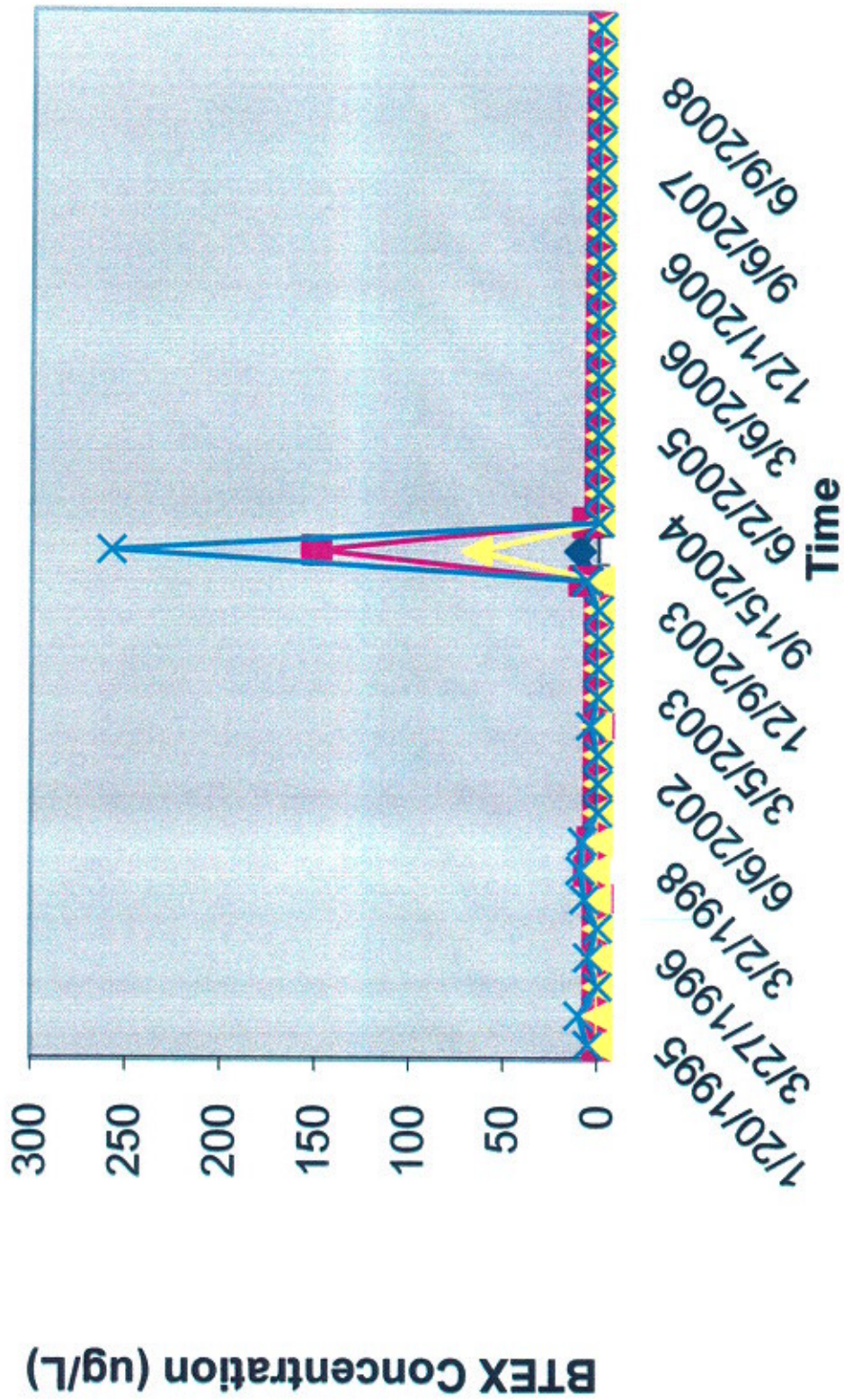
Part II

Graphs Showing BTEX Concentration Fluctuations with Time

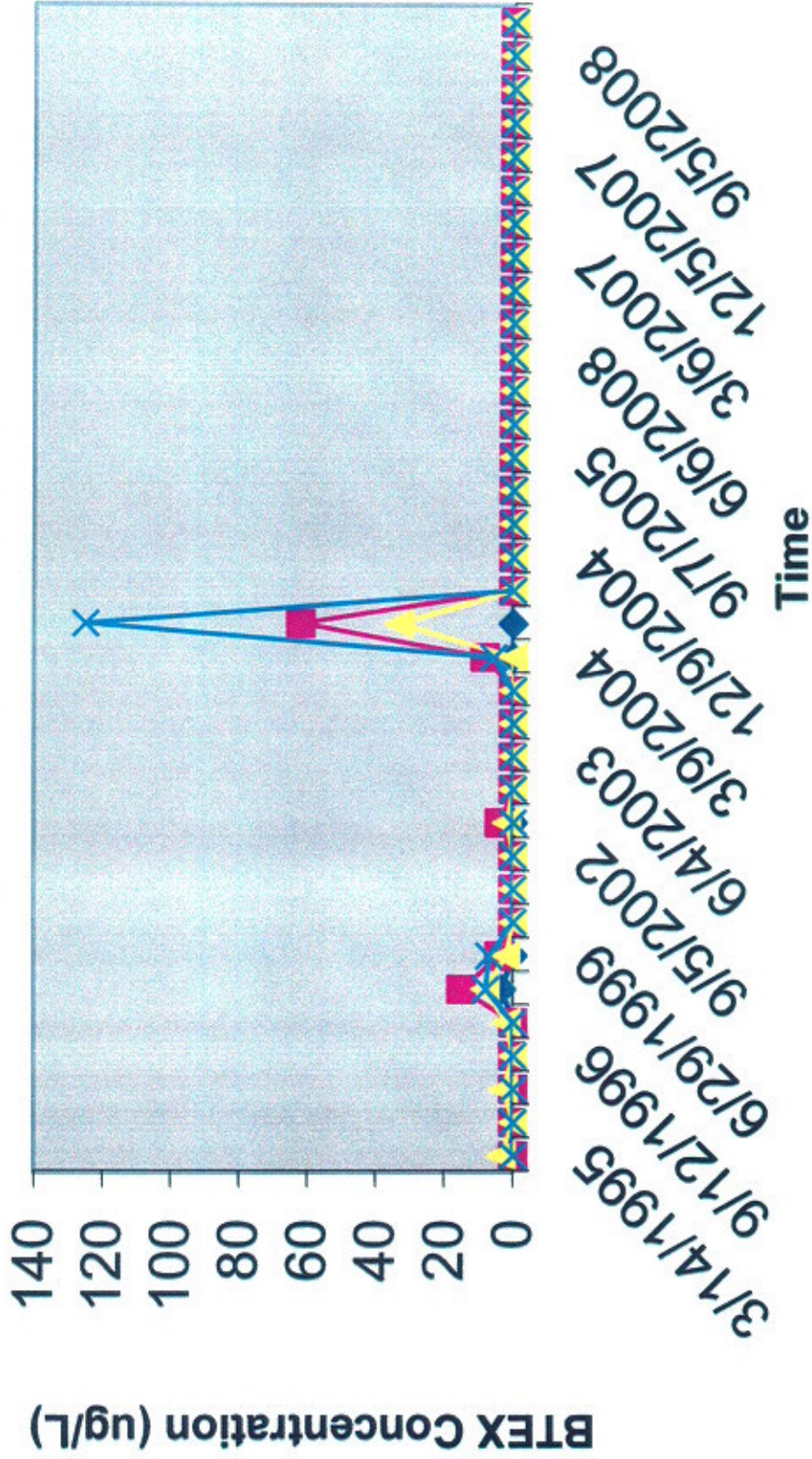
This appendix contains graphs illustrating fluctuations in dissolved BTEX concentrations in groundwater with time for the period from January 1995 through December 2008. Graphs are presented for wells MW-1, MW-1A, MW-3, MW-8, MW-9 and MW-10. MW-2 is not included since dissolved BTEX has never been reported for this well. Concentrations of benzene, toluene, ethylbenzene and total xylenes are color coded as follows:

Benzene	Dark blue
Toluene	Red
Ethylbenzene	Yellow
Total Xylenes	Aquamarine

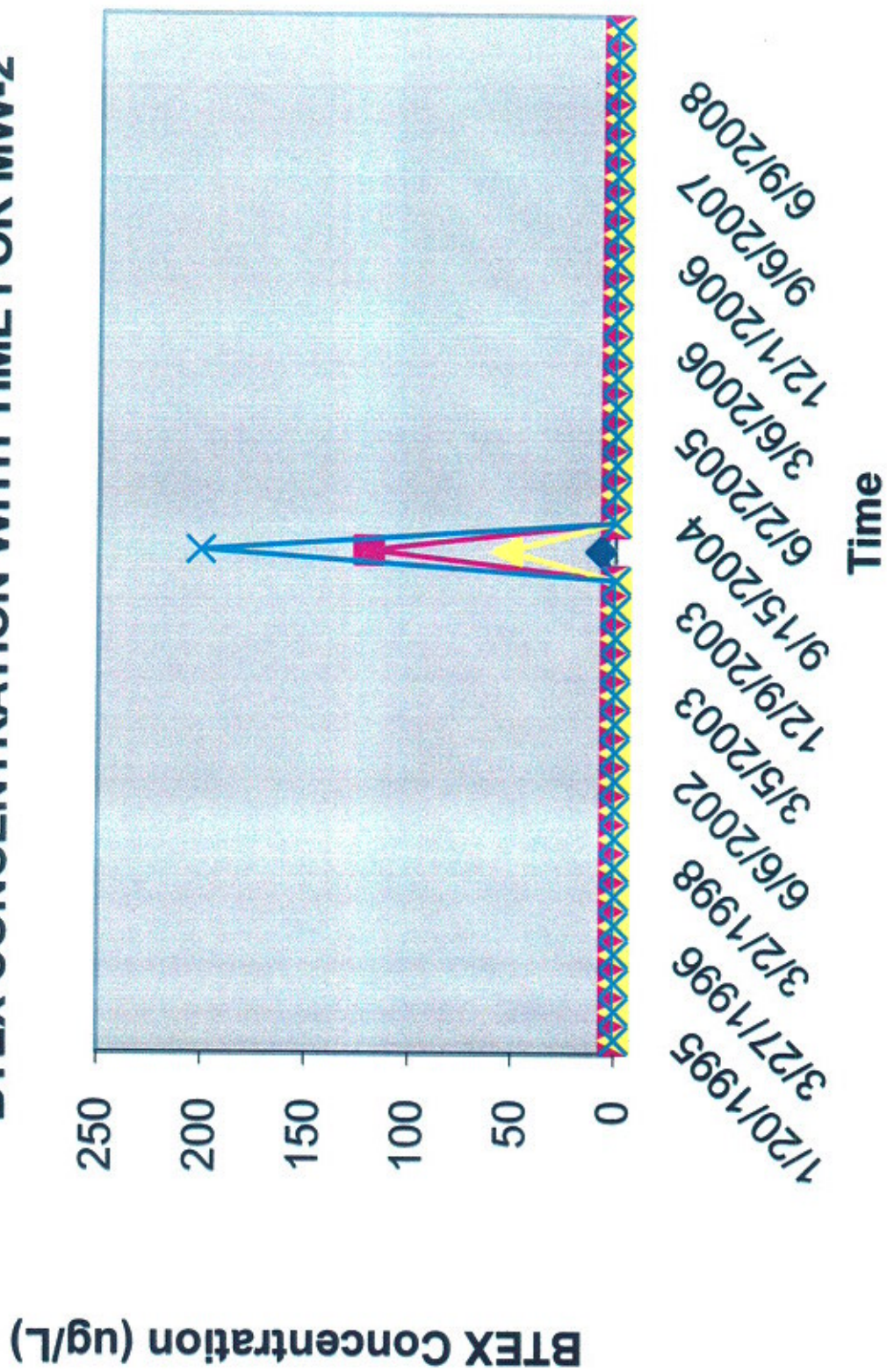
BTEX CONCENTRATION WITH TIME FOR MW-1



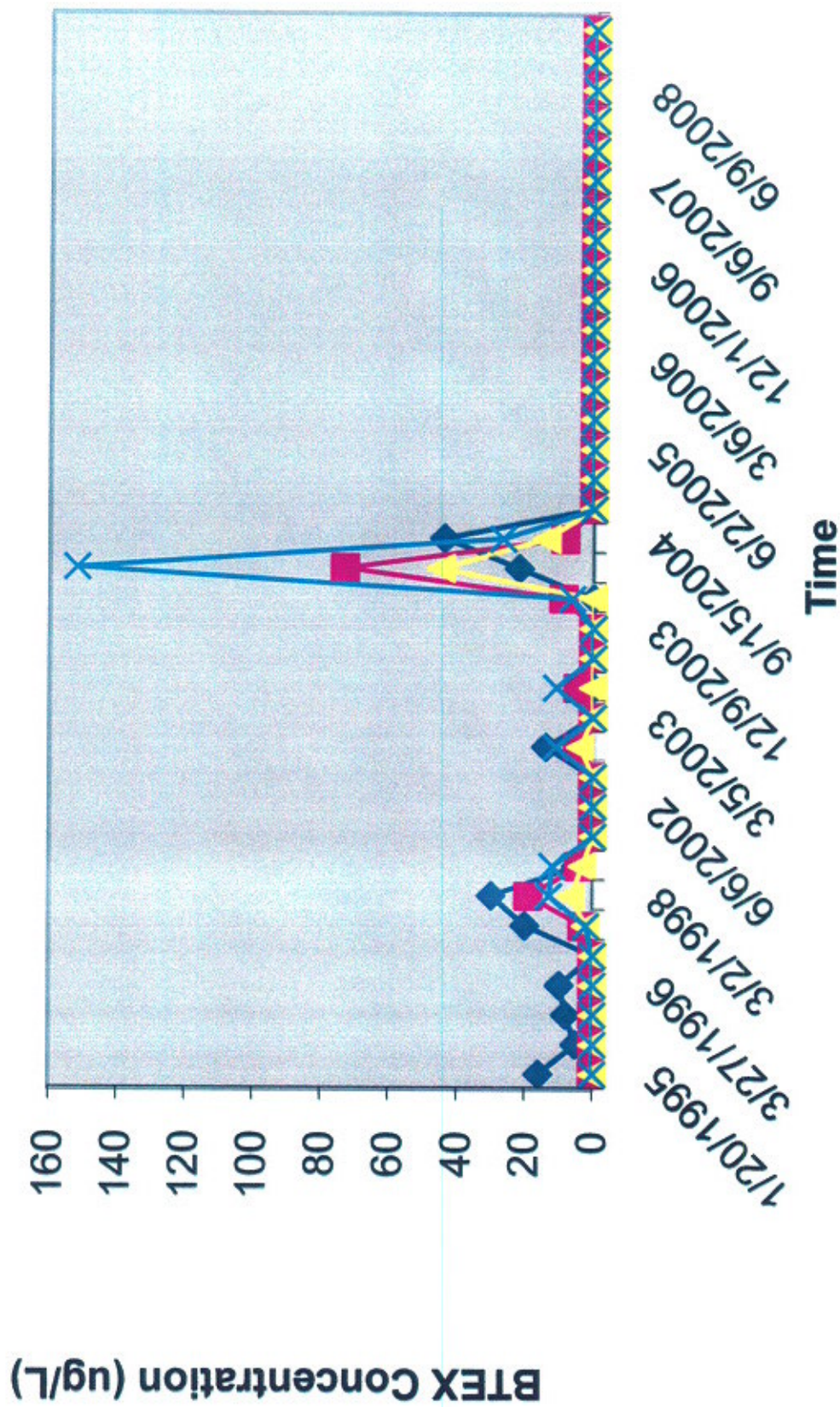
BTEX CONCENTRATION WITH TIME FOR MW-1A



BTEX CONCENTRATION WITH TIME FOR MW-2

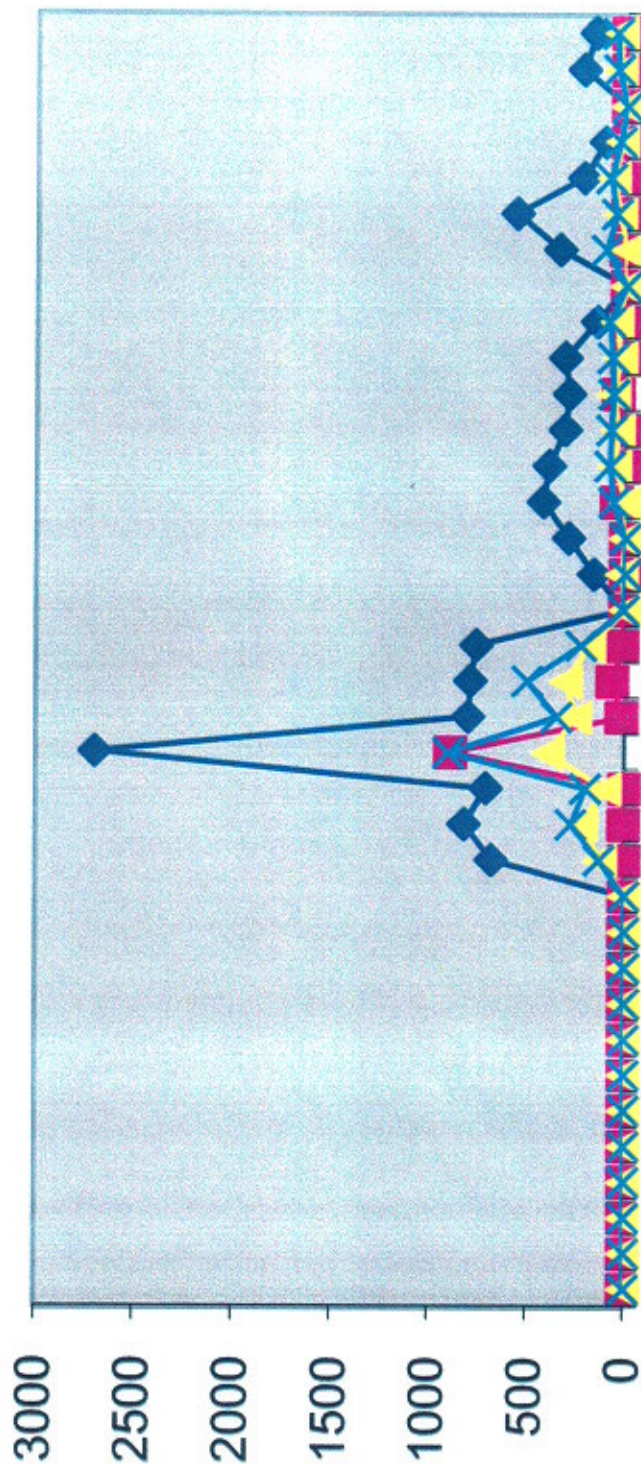


BTEX CONCENTRATION WITH TIME FOR MW-8



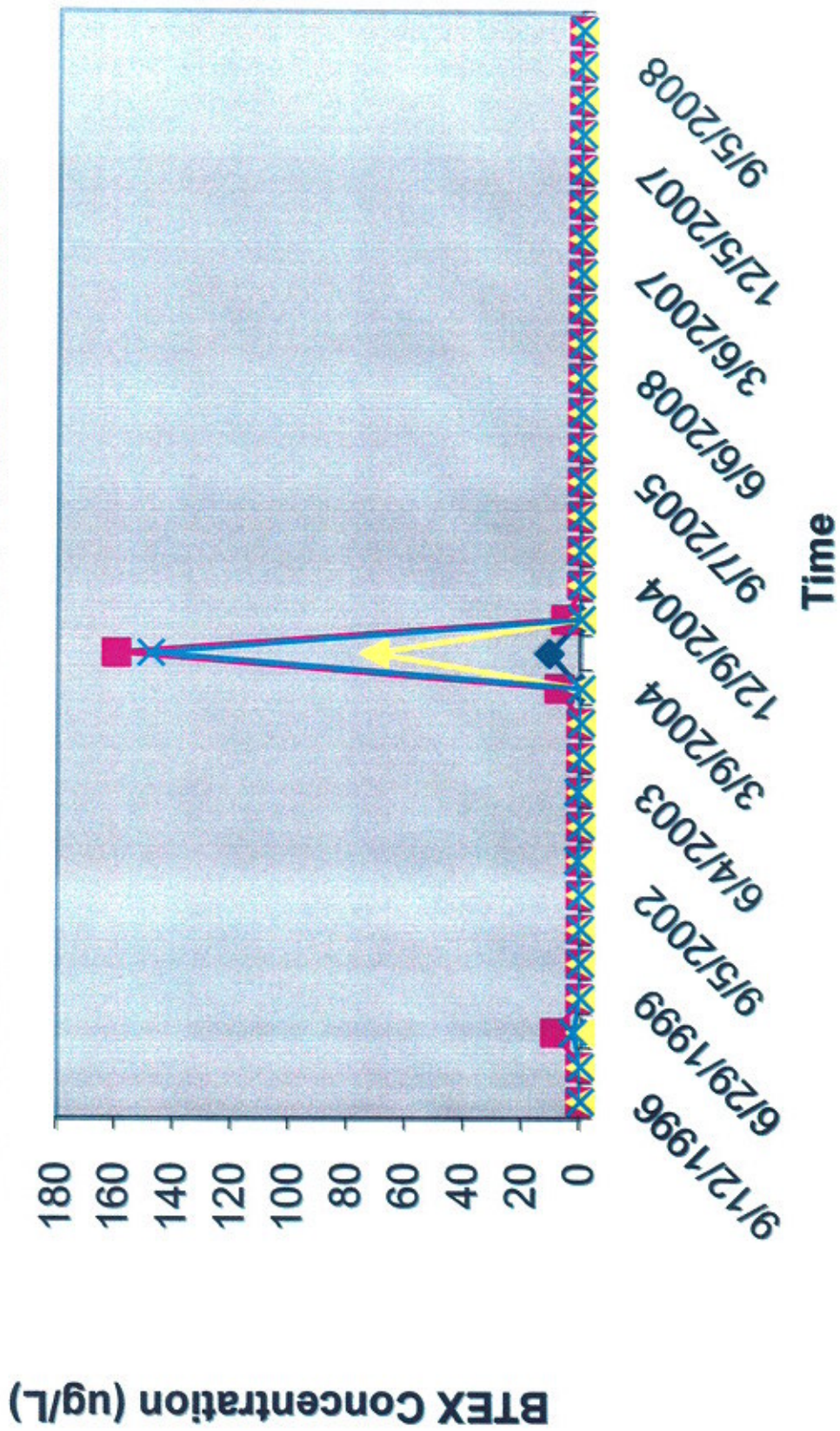
BTEX CONCENTRATION WITH TIME FOR MW-9

BTEX Concentration (ug/L)



Time

BTEX CONCENTRATION WITH TIME FOR MW-10



APPENDIX C – PART III

LABORATORY REPORTS FOR GROUNDWATER

December 16, 2008



Stephen Testa
Testa Environmental Corporation
19814 Jesus Maria Road
Mokelumne Hill, CA 95245
TEL: (209) 754-1422
FAX: (209) 754-1422

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 102606

RE: Chemoil Refinery

Attention: Stephen Testa

Enclosed are the results for sample(s) received on December 10, 2008 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #10

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-001A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	GC Batch: A08VW340	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1,1-Trichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1,2,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1,2-Trichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1-Dichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1-Dichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,1-Dichloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2,3-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2,3-Trichloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2,4-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2,4-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2-Dibromo-3-chloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2-Dibromoethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,3,5-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,3-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
1,3-Dichloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
1,4-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
2,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 11:13 AM
2-Chlorotoluene	ND	50	µg/L	10	12/11/2008 11:13 AM
4-Chlorotoluene	ND	50	µg/L	10	12/11/2008 11:13 AM
4-Isopropyltoluene	ND	50	µg/L	10	12/11/2008 11:13 AM
Benzene	ND	50	µg/L	10	12/11/2008 11:13 AM
Bromobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
Bromodichloromethane	ND	50	µg/L	10	12/11/2008 11:13 AM
Bromoform	ND	50	µg/L	10	12/11/2008 11:13 AM
Bromomethane	ND	50	µg/L	10	12/11/2008 11:13 AM
Carbon tetrachloride	ND	50	µg/L	10	12/11/2008 11:13 AM
Chlorobenzene	ND	50	µg/L	10	12/11/2008 11:13 AM
Chloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM
Chloroform	ND	50	µg/L	10	12/11/2008 11:13 AM
Chloromethane	ND	50	µg/L	10	12/11/2008 11:13 AM
cis-1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 11:13 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Straggle outside of limits due to matrix interference
DO Sonicate Diluted Out

F Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #10

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-001A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	QC Batch: A08VW340	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	50	ug/L	10	12/11/2008 11:13 AM
Di-isopropyl ether	ND	50	ug/L	10	12/11/2008 11:13 AM
Dibromochloromethane	ND	50	ug/L	10	12/11/2008 11:13 AM
Dibromomethane	ND	50	ug/L	10	12/11/2008 11:13 AM
Dichlorodifluoromethane	ND	50	ug/L	10	12/11/2008 11:13 AM
Ethyl tert-butyl ether	ND	50	ug/L	10	12/11/2008 11:13 AM
Ethylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
Hexachlorobutadiene	ND	50	ug/L	10	12/11/2008 11:13 AM
Isopropylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
m,p-Xylene	ND	100	ug/L	10	12/11/2008 11:13 AM
Methylene chloride	ND	50	ug/L	10	12/11/2008 11:13 AM
MTBE	ND	50	ug/L	10	12/11/2008 11:13 AM
n-Butylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
n-Propylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
Naphthalene	ND	50	ug/L	10	12/11/2008 11:13 AM
o-Xylene	ND	50	ug/L	10	12/11/2008 11:13 AM
sec-Butylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
Styrene	ND	50	ug/L	10	12/11/2008 11:13 AM
Tert-amyl methyl ether	ND	50	ug/L	10	12/11/2008 11:13 AM
Tert-Butanol	ND	1000	ug/L	10	12/11/2008 11:13 AM
tert-Butylbenzene	ND	50	ug/L	10	12/11/2008 11:13 AM
Tetrachloroethene	ND	50	ug/L	10	12/11/2008 11:13 AM
Toluene	ND	50	ug/L	10	12/11/2008 11:13 AM
trans-1,2-Dichloroethene	ND	50	ug/L	10	12/11/2008 11:13 AM
Trichloroethene	ND	50	ug/L	10	12/11/2008 11:13 AM
Trichlorofluoromethane	ND	50	ug/L	10	12/11/2008 11:13 AM
Vinyl chloride	ND	50	ug/L	10	12/11/2008 11:13 AM
Surr: 1,2-Dichloroethane-d4	103	70-130	%REC	10	12/11/2008 11:13 AM
Surr: 4-Bromofluorobenzene	92.6	70-130	%REC	10	12/11/2008 11:13 AM
Surr: Dibromofluoromethane	105	70-130	%REC	10	12/11/2008 11:13 AM
Surr: Toluene-d8	104	70-130	%REC	10	12/11/2008 11:13 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- ND Surrogate Diluted Out

- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-001B

Client Sample ID: MW #10
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC6_081211A	QC Batch: 108VW225	PrepDate:	Analyst: DDL
GRO	ND	0.20	mg/L
Surr: Bromofluorobenzene (FID)	93.4	71-130	%REC
			1
			12/11/2008 08:50 PM
			12/11/2008 08:50 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DD Surrogate Diluted Out
 F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-001C

Client Sample ID: MW #10
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_081212A	OC Batch: 51070				PrepDate: 12/12/2008	Analyst: DMP
1,2,4-Trichlorobenzene	ND	11		µg/L	1	12/12/2008 10:14 PM
1,2-Dichlorobenzene	ND	11		µg/L	1	12/12/2008 10:14 PM
1,3-Dichlorobenzene	ND	11		µg/L	1	12/12/2008 10:14 PM
1,4-Dichlorobenzene	ND	11		µg/L	1	12/12/2008 10:14 PM
2,4,5-Trichlorophenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2,4,6-Trichlorophenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2,4-Dichlorophenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2,4-Dimethylphenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2,4-Dinitrophenol	ND	53		µg/L	1	12/12/2008 10:14 PM
2,4-Dinitrotoluene	ND	11		µg/L	1	12/12/2008 10:14 PM
2,6-Dinitrotoluene	ND	11		µg/L	1	12/12/2008 10:14 PM
2-Chloronaphthalene	ND	11		µg/L	1	12/12/2008 10:14 PM
2-Chlorophenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2-Methylnaphthalene	ND	11		µg/L	1	12/12/2008 10:14 PM
2-Methylphenol	ND	11		µg/L	1	12/12/2008 10:14 PM
2-Nitroaniline	ND	53		µg/L	1	12/12/2008 10:14 PM
2-Nitrophenol	ND	11		µg/L	1	12/12/2008 10:14 PM
3,3'-Dichlorobenzidine	ND	21		µg/L	1	12/12/2008 10:14 PM
3-Nitroaniline	ND	53		µg/L	1	12/12/2008 10:14 PM
4,6-Dinitro-2-methylphenol	ND	53		µg/L	1	12/12/2008 10:14 PM
4-Bromophenyl-phenylether	ND	11		µg/L	1	12/12/2008 10:14 PM
4-Chloro-3-methylphenol	ND	53		µg/L	1	12/12/2008 10:14 PM
4-Chloroaniline	ND	21		µg/L	1	12/12/2008 10:14 PM
4-Chlorophenyl-phenylether	ND	11		µg/L	1	12/12/2008 10:14 PM
4-Methylphenol	ND	11		µg/L	1	12/12/2008 10:14 PM
4-Nitroaniline	ND	21		µg/L	1	12/12/2008 10:14 PM
4-Nitrophenol	ND	53		µg/L	1	12/12/2008 10:14 PM
Acenaphthene	ND	11		µg/L	1	12/12/2008 10:14 PM
Acenaphthylene	ND	11		µg/L	1	12/12/2008 10:14 PM
Anthracene	ND	11		µg/L	1	12/12/2008 10:14 PM
Benzo(a)pyrene	ND	53		µg/L	1	12/12/2008 10:14 PM
Benzo(a)anthracene	ND	11		µg/L	1	12/12/2008 10:14 PM
Benzo(a)pyrene	ND	11		µg/L	1	12/12/2008 10:14 PM
Benzo(b)fluoranthene	ND	11		µg/L	1	12/12/2008 10:14 PM
Benzo(g,h,i)perylene	ND	11		µg/L	1	12/12/2008 10:14 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DD Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemical Refinery
Lab ID: 102606-001C

Client Sample ID: MW #10
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_051212A	QC Batch: 51070			PrepDate: 12/12/2008	Analyst: DMP	
Benzo(k)fluoranthene	ND	11		ug/L	1	12/12/2008 10:14 PM
Benzoic acid	ND	53		ug/L	1	12/12/2008 10:14 PM
Benzyl alcohol	ND	21		ug/L	1	12/12/2008 10:14 PM
Bis(2-chloroethoxy)methane	ND	11		ug/L	1	12/12/2008 10:14 PM
Bis(2-chloroethyl)ether	ND	11		ug/L	1	12/12/2008 10:14 PM
Bis(2-chloroisopropyl)ether	ND	11		ug/L	1	12/12/2008 10:14 PM
Bis(2-ethylhexyl)phthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Butylbenzylphthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Chrysene	ND	11		ug/L	1	12/12/2008 10:14 PM
Di-n-butylphthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Di-n-octylphthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Dibenz(a,h)anthracene	ND	11		ug/L	1	12/12/2008 10:14 PM
Dibenzofuran	ND	11		ug/L	1	12/12/2008 10:14 PM
Diethylphthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Dimethylphthalate	ND	11		ug/L	1	12/12/2008 10:14 PM
Fluoranthene	ND	11		ug/L	1	12/12/2008 10:14 PM
Fluorene	ND	11		ug/L	1	12/12/2008 10:14 PM
Hexachlorobenzene	ND	11		ug/L	1	12/12/2008 10:14 PM
Hexachlorobutadiene	ND	21		ug/L	1	12/12/2008 10:14 PM
Hexachlorocyclopentadiene	ND	11		ug/L	1	12/12/2008 10:14 PM
Hexachloroethane	ND	11		ug/L	1	12/12/2008 10:14 PM
Indeno(1,2,3-cd)pyrene	ND	11		ug/L	1	12/12/2008 10:14 PM
Isophorone	ND	11		ug/L	1	12/12/2008 10:14 PM
N-Nitrosodi-n-propylamine	ND	11		ug/L	1	12/12/2008 10:14 PM
N-Nitrosodiphenylamine	ND	11		ug/L	1	12/12/2008 10:14 PM
Naphthalene	ND	11		ug/L	1	12/12/2008 10:14 PM
Nitrobenzene	ND	11		ug/L	1	12/12/2008 10:14 PM
Pentachlorophenol	ND	53		ug/L	1	12/12/2008 10:14 PM
Phenanthrene	ND	11		ug/L	1	12/12/2008 10:14 PM
Phenol	ND	11		ug/L	1	12/12/2008 10:14 PM
Pyrene	ND	11		ug/L	1	12/12/2008 10:14 PM
Sum: 1,2-Dichlorobenzene-d4	71.7	42-98		%REC	1	12/12/2008 10:14 PM
Sum: 2,4,6-Tribromophenol	95.1	60-128		%REC	1	12/12/2008 10:14 PM
Sum: 2-Chlorophenol-d4	70.6	43-102		%REC	1	12/12/2008 10:14 PM
Sum: 2-Fluorobiphenyl	79.1	50-108		%REC	1	12/12/2008 10:14 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding time for preparation or analysis exceeded
S Spike Spillage outside of limits due to matrix interference
DD Sample Diluted Out

F Value above quantitation range
ND Not Detected at the Reporting Limit
Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-001C

Client Sample ID: MW #10
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID: MS6_081212A	QC Batch: 51070	PrepDate: 12/12/2008	Analyst: DMP
Surr: 2-Fluorophenol	45.4	22-69	%REC 1 12/12/2008 10:14 PM
Surr: 4-Terphenyl-d14	100	66-130	%REC 1 12/12/2008 10:14 PM
Surr: Nitrobenzene-d5	74.2	47-117	%REC 1 12/12/2008 10:14 PM
Surr: Phenol-d5	33.8	16-50	%REC 1 12/12/2008 10:14 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Straggle outside of limits due to matrix interference
 DO Surrogate Diluted Out

F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-00113

Client Sample ID: MW #10
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS BY GC/FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215C	QC Batch: 51103				PrepDate: 12/15/2008	Analyst: CBR
DRO	1.6	0.20		mg/L	1	12/15/2008 03:21 PM
Sum: p-Terphenyl	94.2	35-131		%REC	1	12/15/2008 03:21 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DU Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected in the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-001E

Client Sample ID: MW #10
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215B	QC Batch:	51137		PrepDate:	12/15/2008	Analyst: CBR
DRO	0.41	0.20		mg/L	1	12/15/2008 09:27 PM
Surrogate: p-Terphenyl	87.4	35-131		%REC	1	12/15/2008 09:27 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Standard outside of limits due to matrix interference
 DO Surrogate Diluted Out
 F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102696
Project: Chemoil Refinery
Lab ID: 102606-002A

Client Sample ID: MW #2
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	QC Batch: A08VW340	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1,1-Trichloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1,2-Trichloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1-Dichloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1-Dichloroethene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,1-Dichloropropene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2,3-Trichloropropane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2,4-Trimethylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2-Dibromoethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2-Dichlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2-Dichloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,2-Dichloropropane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,3,5-Trimethylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,3-Dichlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,3-Dichloropropane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
1,4-Dichlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
2,2-Dichloropropane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
2-Chlorotoluene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
4-Chlorotoluene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
4-Isopropyltoluene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Benzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Bromobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Bromodichloromethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Bromoform	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Bromomethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Carbon tetrachloride	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Chlorobenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Chloroethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Chloroform	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Chloromethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
cis-1,2-Dichloroethene	ND	5.0	ug/L	1	12/11/2008 10:31 AM

Qualifiers: R Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Spillage outside of limits due to matrix interference
DC Sample Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-002A

Client Sample ID: MW #2
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	QC Batch: A08VW340	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Di-isopropyl ether	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Dibromochloromethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Dibromomethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Dichlorodifluoromethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Ethyl tert-butyl ether	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Ethylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Hexachlorobutadiene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Isopropylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
m,p-Xylene	ND	10	ug/L	1	12/11/2008 10:31 AM
Methylene chloride	ND	5.0	ug/L	1	12/11/2008 10:31 AM
MIBK	ND	5.0	ug/L	1	12/11/2008 10:31 AM
n-Butylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
n-Propylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Naphthalene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
o-Xylene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
sec-Butylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Styrene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Tert-amyl methyl ether	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Tert-Butanol	ND	100	ug/L	1	12/11/2008 10:31 AM
tert-Butylbenzene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Tetrachloroethene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Toluene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
trans-1,2-Dichloroethene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Trichloroethene	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Trichlorofluoromethane	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Vinyl chloride	ND	5.0	ug/L	1	12/11/2008 10:31 AM
Surr: 1,2-Dichloromethane-d4	103	70-130	%REC	1	12/11/2008 10:31 AM
Surr: 4-Bromodifluorobenzene	84.1	70-130	%REC	1	12/11/2008 10:31 AM
Surr: Dibromodifluoromethane	104	70-130	%REC	1	12/11/2008 10:31 AM
Surr: Toluene-d8	104	70-130	%REC	1	12/11/2008 10:31 AM

Qualifiers: B Analyte detected in the associated Method Work
H Holding times for preparation or analysis exceeded
S Spike Nanogate outside of limits due to matrix interference
DD Surrogate Diluted Out

F Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-002B

Client Sample ID: MW #2
 Collection Date: 12-9-2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC5_091211A	QC Batch: 108VW225	PrepDate:	Analyst: DDL
GRO	ND	0.20	mg/L
Sum: Bromofluorobenzene (FID)	96.5	71-130	%REC

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike N/A; spike outside of limits due to matrix interference		Results are wet unless otherwise specified
	DD	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #2

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-002C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID: MS6_081212A	QC Batch: 51070	PrepDate: 12/12/2008	Analyst: DMP		
1,2,4-Trichlorobenzene	ND	11	ug/L	1	12/12/2008 10:42 PM
1,2-Dichlorobenzene	ND	11	ug/L	1	12/12/2008 10:42 PM
1,3-Dichlorobenzene	ND	11	ug/L	1	12/12/2008 10:42 PM
1,4-Dichlorobenzene	ND	11	ug/L	1	12/12/2008 10:42 PM
2,4,5-Trichlorophenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2,4,6-Trichlorophenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2,4-Dichlorophenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2,4-Dimethylphenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2,4-Dinitrophenol	ND	53	ug/L	1	12/12/2008 10:42 PM
2,4-Dinitrotoluene	ND	11	ug/L	1	12/12/2008 10:42 PM
2,5-Dinitrotoluene	ND	11	ug/L	1	12/12/2008 10:42 PM
2-Chloronaphthalene	ND	11	ug/L	1	12/12/2008 10:42 PM
2-Chlorophenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2-Methylnaphthalene	ND	11	ug/L	1	12/12/2008 10:42 PM
2-Methylphenol	ND	11	ug/L	1	12/12/2008 10:42 PM
2-Nitroaniline	ND	53	ug/L	1	12/12/2008 10:42 PM
2-Nitrophenol	ND	11	ug/L	1	12/12/2008 10:42 PM
3,3'-Dichlorobenzidine	ND	21	ug/L	1	12/12/2008 10:42 PM
3-Nitroaniline	ND	53	ug/L	1	12/12/2008 10:42 PM
4,6-Dinitro-2-methylphenol	ND	53	ug/L	1	12/12/2008 10:42 PM
4-Bromophenyl-phenylether	ND	11	ug/L	1	12/12/2008 10:42 PM
4-Chloro-3-methylphenol	ND	53	ug/L	1	12/12/2008 10:42 PM
4-Chloroaniline	ND	21	ug/L	1	12/12/2008 10:42 PM
4-Chlorophenyl-phenylether	ND	11	ug/L	1	12/12/2008 10:42 PM
4-Methylphenol	ND	11	ug/L	1	12/12/2008 10:42 PM
4-Nitroaniline	ND	21	ug/L	1	12/12/2008 10:42 PM
4-Nitrophenol	ND	53	ug/L	1	12/12/2008 10:42 PM
Acenaphthene	ND	11	ug/L	1	12/12/2008 10:42 PM
Acenaphthylene	ND	11	ug/L	1	12/12/2008 10:42 PM
Anthracene	ND	11	ug/L	1	12/12/2008 10:42 PM
Benzdioxin (M)	ND	53	ug/L	1	12/12/2008 10:42 PM
Benzo(a)anthracene	ND	11	ug/L	1	12/12/2008 10:42 PM
Benzo(a)pyrene	ND	11	ug/L	1	12/12/2008 10:42 PM
Benzo(b)fluoranthene	ND	11	ug/L	1	12/12/2008 10:42 PM
Benzo(g,h,i)perylene	ND	11	ug/L	1	12/12/2008 10:42 PM

Qualifiers: B Analyte detected in the associated Method Blank
 11 Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DD Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-002C

Client Sample ID: MW #2
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C						
RunID: MS6_081212A	QC Batch: 51070	PrepDate: 12/12/2008 Analyst: DMP				
Benzo(k)fluoranthene	ND	11		µg/L	1	12/12/2008 10:42 PM
Benzoic acid	ND	53		µg/L	1	12/12/2008 10:42 PM
Benzyl alcohol	ND	21		µg/L	1	12/12/2008 10:42 PM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	12/12/2008 10:42 PM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/12/2008 10:42 PM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	12/12/2008 10:42 PM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Butylbenzylphthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Chrysene	ND	11		µg/L	1	12/12/2008 10:42 PM
Di-n-butylphthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Di-n-octylphthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/12/2008 10:42 PM
Dibenzofuran	ND	11		µg/L	1	12/12/2008 10:42 PM
Diethylphthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Dimethylphthalate	ND	11		µg/L	1	12/12/2008 10:42 PM
Fluoranthene	ND	11		µg/L	1	12/12/2008 10:42 PM
Fluorene	ND	11		µg/L	1	12/12/2008 10:42 PM
Hexachlorobenzene	ND	11		µg/L	1	12/12/2008 10:42 PM
Hexachlorobutadiene	ND	21		µg/L	1	12/12/2008 10:42 PM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/12/2008 10:42 PM
Hexachloroethane	ND	11		µg/L	1	12/12/2008 10:42 PM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/12/2008 10:42 PM
Isophrene	ND	11		µg/L	1	12/12/2008 10:42 PM
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	12/12/2008 10:42 PM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/12/2008 10:42 PM
Naphthalene	ND	11		µg/L	1	12/12/2008 10:42 PM
Nitrobenzene	ND	11		µg/L	1	12/12/2008 10:42 PM
Pentachlorophenol	ND	53		µg/L	1	12/12/2008 10:42 PM
Phenanthrene	ND	11		µg/L	1	12/12/2008 10:42 PM
Phenol	ND	11		µg/L	1	12/12/2008 10:42 PM
Pyrene	ND	11		µg/L	1	12/12/2008 10:42 PM
Surr: 1,2-Dichlorobenzene-d4	72.8	42-58	%REC		1	12/12/2008 10:42 PM
Surr: 2,4,6-Tribromophenol	94.4	60-128	%REC		1	12/12/2008 10:42 PM
Surr: 2-Chlorophenol-d4	74.2	43-102	%REC		1	12/12/2008 10:42 PM
Surr: 2-Fluorobiphenyl	31.1	50-108	%REC		1	12/12/2008 10:42 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding time for preparation or analysis exceeded
 S Spike N/A; spike outside of limits due to matrix interference
 DD Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #2

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-0020

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID: MS5_081212A	QC Batch: 51070	PrepDate: 12/12/2008	Analyst: DMP
Surr: 2-Fluorophenol	50.3	22-68	%REC
Surr: 4-Terphenyl-d14	102	65-130	%REC
Surr: Nitrobenzene-d5	74.1	47-117	%REC
Surr: Phenol-d5	36.3	16-50	%REC

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-00210

Client Sample ID: MW #2
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS BY GC/FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215C	QC Batch: 51103				PrepDate: 12/15/2008	Analyst: CBR
DRO	ND	0.20		mg/L	1	12/15/2008 03:30 PM
Surr: p-Terphenyl	109	35-131		%REC	1	12/15/2008 03:30 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding time for preparation or analysis exceeded
 N Spike Surrogate outside of limits due to matrix interference
 DD Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #2

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-002E

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C			EPA 8015B(M)		
RunID: GC16_0812158	OC Batch: 51137			PrepDate: 12/15/2008		Analyst: CBR
DRO	ND	0.20		mg/L	1	12/15/2008 09:36 PM
Surr. p-Terphenyl	91.0	35-137		%REC	1	12/15/2008 09:36 PM

Qualifiers:

- H Analyte detected in the associated Method Work
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DR Surrogate Diluted Out

- F Value above quantitation range
 - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-003A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081210B	QC Batch: A08VW339	PropDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1,1-Trichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1,2,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1,2-Trichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1-Dichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1-Dichloroethene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,1-Dichloropropene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2,3-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2,3-Trichloropropane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2,4-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2,4-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2-Dibromo-3-chloropropane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2-Dibromoethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,3,5-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,3-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
1,3-Dichloropropane	ND	50	µg/L	10	12/11/2008 02:24 AM
1,4-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
2,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 02:24 AM
2-Chlorotoluene	ND	50	µg/L	10	12/11/2008 02:24 AM
4-Chlorotoluene	ND	50	µg/L	10	12/11/2008 02:24 AM
4-Isopropyltoluene	ND	50	µg/L	10	12/11/2008 02:24 AM
Benzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Bromobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Bromodichloromethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Bromoform	ND	50	µg/L	10	12/11/2008 02:24 AM
Bromomethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Carbon tetrachloride	ND	50	µg/L	10	12/11/2008 02:24 AM
Chlorobenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Chloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Chloroform	ND	50	µg/L	10	12/11/2008 02:24 AM
Chloromethane	ND	50	µg/L	10	12/11/2008 02:24 AM
cis-1,2-Dichloroethene	ND	50	µg/L	10	12/11/2008 02:24 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Same as outside of limits due to matrix interference
(D) Sample Diluted Out

C Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet weights unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-003A

Client Sample ID: MW #1
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081210B	QC Batch: A06VW339	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	50	µg/L	10	12/11/2008 02:24 AM
Di-isopropyl ether	ND	50	µg/L	10	12/11/2008 02:24 AM
Dibromochloromethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Dibromomethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Dichlorodifluoromethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Ethyl tert-butyl ether	ND	50	µg/L	10	12/11/2008 02:24 AM
Ethylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Hexachlorobutadiene	ND	50	µg/L	10	12/11/2008 02:24 AM
Isopropylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
m,p-Xylene	ND	100	µg/L	10	12/11/2008 02:24 AM
Methylene chloride	ND	50	µg/L	10	12/11/2008 02:24 AM
MTBE	ND	50	µg/L	10	12/11/2008 02:24 AM
n-Butylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
n-Propylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Naphthalene	ND	50	µg/L	10	12/11/2008 02:24 AM
o-Xylene	ND	50	µg/L	10	12/11/2008 02:24 AM
sec-Butylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Styrene	ND	50	µg/L	10	12/11/2008 02:24 AM
Tert-amyl methyl ether	ND	50	µg/L	10	12/11/2008 02:24 AM
Tert-Butanol	ND	1000	µg/L	10	12/11/2008 02:24 AM
tert-Butylbenzene	ND	50	µg/L	10	12/11/2008 02:24 AM
Tetrachloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Toluene	ND	50	µg/L	10	12/11/2008 02:24 AM
trans-1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Trichloroethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Trichlorofluoromethane	ND	50	µg/L	10	12/11/2008 02:24 AM
Vinyl chloride	ND	50	µg/L	10	12/11/2008 02:24 AM
Surr: 1,2-Dichloroethane-d4	108	70-130	%REC	10	12/11/2008 02:24 AM
Surr: 4-Bromofluorobenzene	95.9	70-130	%REC	10	12/11/2008 02:24 AM
Surr: Dibromofluoromethane	107	70-130	%REC	10	12/11/2008 02:24 AM
Surr: Toluene-d8	106	70-130	%REC	10	12/11/2008 02:24 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding time for preservation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-0033

Client Sample ID: MW #1
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
EPA 8015B(M)						
RunID: GC5_081211A	QC Batch: 108VW225			PrepDate:	Analyst: DDL	
GRO	0.25	0.20		mg/L	1	12/11/2008 09:51 PM
Surrogate: Bromofluorobenzene (FID)	91.7	71-130		%REC	1	12/11/2008 09:51 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DO Surrogate Did not Out

- F Value above quantitation range
- NZ Not Detected in the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-003C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C		EPA 8270C				
RunID: MS6_081212A	QC Batch: 51070			PrepDate: 12/12/2008	Analyst: DMP	
1,2,4-Trichlorobenzene	ND	11		ug/L	1	12/12/2008 11:10 PM
1,2-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:10 PM
1,3-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:10 PM
1,4-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:10 PM
2,4,5-Trichlorophenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2,4,6-Trichlorophenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2,4-Dichlorophenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2,4-Dimethylphenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2,4-Dinitrophenol	ND	53		ug/L	1	12/12/2008 11:10 PM
2,4-Dinitrotoluene	ND	11		ug/L	1	12/12/2008 11:10 PM
2,6-Dinitrotoluene	ND	11		ug/L	1	12/12/2008 11:10 PM
2-Chloronaphthalene	ND	11		ug/L	1	12/12/2008 11:10 PM
2-Chlorophenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2-Methylnaphthalene	ND	11		ug/L	1	12/12/2008 11:10 PM
2-Methylphenol	ND	11		ug/L	1	12/12/2008 11:10 PM
2-Nitroaniline	ND	53		ug/L	1	12/12/2008 11:10 PM
2-Nitrophenol	ND	11		ug/L	1	12/12/2008 11:10 PM
3,3'-Dichlorobenzidine	ND	21		ug/L	1	12/12/2008 11:10 PM
3-Nitroaniline	ND	53		ug/L	1	12/12/2008 11:10 PM
4,6-Dinitro-2-methylphenol	ND	53		ug/L	1	12/12/2008 11:10 PM
4-Bromophenyl-phenylether	ND	11		ug/L	1	12/12/2008 11:10 PM
4-Chloro-3-methylphenol	ND	53		ug/L	1	12/12/2008 11:10 PM
4-Chloroaniline	ND	21		ug/L	1	12/12/2008 11:10 PM
4-Chlorophenyl-phenylether	ND	11		ug/L	1	12/12/2008 11:10 PM
4-Methylphenol	ND	11		ug/L	1	12/12/2008 11:10 PM
4-Nitroaniline	ND	21		ug/L	1	12/12/2008 11:10 PM
4-Nitrophenol	ND	53		ug/L	1	12/12/2008 11:10 PM
Acenaphthene	ND	11		ug/L	1	12/12/2008 11:10 PM
Acenaphthylene	ND	11		ug/L	1	12/12/2008 11:10 PM
Anthracene	ND	11		ug/L	1	12/12/2008 11:10 PM
Benzidine (M)	ND	53		ug/L	1	12/12/2008 11:10 PM
Benzo(a)anthracene	ND	11		ug/L	1	12/12/2008 11:10 PM
Benzo(a)pyrene	ND	11		ug/L	1	12/12/2008 11:10 PM
Benzo(b)fluoranthene	ND	11		ug/L	1	12/12/2008 11:10 PM
Benzo(g,h,i)perylene	ND	11		ug/L	1	12/12/2008 11:10 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-003C

Client Sample ID: MW #1
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_081212A	QC Batch: 51070			PrepDate: 12/12/2008		Analyst: DMP
Benzo(k)fluoranthene	ND	11		µg/L	1	12/12/2008 11:10 PM
Benzoic acid	ND	53		µg/L	1	12/12/2008 11:10 PM
Benzyl alcohol	ND	21		µg/L	1	12/12/2008 11:10 PM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	12/12/2008 11:10 PM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/12/2008 11:10 PM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	12/12/2008 11:10 PM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Chrysene	ND	11		µg/L	1	12/12/2008 11:10 PM
Di-n-butylphthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Di-n-octylphthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/12/2008 11:10 PM
Dibenzofuran	ND	11		µg/L	1	12/12/2008 11:10 PM
Diethylphthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Dimethylphthalate	ND	11		µg/L	1	12/12/2008 11:10 PM
Fluoranthene	ND	11		µg/L	1	12/12/2008 11:10 PM
Fluorene	ND	11		µg/L	1	12/12/2008 11:10 PM
Hexachlorobenzene	ND	11		µg/L	1	12/12/2008 11:10 PM
Hexachlorobutadiene	ND	21		µg/L	1	12/12/2008 11:10 PM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/12/2008 11:10 PM
Hexachloroethane	ND	11		µg/L	1	12/12/2008 11:10 PM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/12/2008 11:10 PM
Isophorone	ND	11		µg/L	1	12/12/2008 11:10 PM
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	12/12/2008 11:10 PM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/12/2008 11:10 PM
Naphthalene	ND	11		µg/L	1	12/12/2008 11:10 PM
Nitrobenzene	ND	11		µg/L	1	12/12/2008 11:10 PM
Pentachlorophenol	ND	53		µg/L	1	12/12/2008 11:10 PM
Phenanthrene	ND	11		µg/L	1	12/12/2008 11:10 PM
Phenol	ND	11		µg/L	1	12/12/2008 11:10 PM
Pyrene	ND	11		µg/L	1	12/12/2008 11:10 PM
Surr: 1,2-Dichlorobenzene-d4	74.0	42-98		%REC	1	12/12/2008 11:10 PM
Surr: 2,4,6-Tribromophenol	104	60-128		%REC	1	12/12/2008 11:10 PM
Surr: 2-Chlorophenol-d4	75.4	43-102		%REC	1	12/12/2008 11:10 PM
Surr: 2-Fluorobiphenyl	77.2	50-109		%REC	1	12/12/2008 11:10 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Negative outside of limits due to matrix interference
 DO Sample Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-003C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID: MS6_081212A	QC Batch: 51070	PrepDate: 12/12/2008	Analyst: DMP
Sum: 2-Fluorophenol	51.2	22-66	%REC
Sum: 4-Terphenyl-d14	107	66-130	%REC
Sum: Nitrobenzene-d5	74.6	47-117	%REC
Sum: Phenol-d5	37.4	16-50	%REC

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Spillage outside of limits due to matrix interference
 DO Surrogate Diluted Out
 F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-00311

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS BY GC/FID

EPA 3510C

EPA 8015B(M)

RunID: GC16_081215C	QC Batch: 51103	PrepDate: 12/15/2008	Analyst: CBR
DRO	6.2	1.0	mg/L
Sum: p-Terphenyl	75.7	35-131	%REC

Qualifiers:

B Analyte detected in the associated Method Blank
 H Holding times for preservation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-003E

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215B	QC Batch: 51137			PrepDate: 12/15/2008		Analyst: CBR
DRO	0.64	0.20		mg/L	1	12/15/2008 09:46 PM
Surz: p-Terphenyl	84.6	35-131		%REC	1	12/15/2008 09:46 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	f	Value above quantitation range
	B	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081210B	QC Batch: A08VW339	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,1,1-Trichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,1,2,2-Tetrachloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,1,2-Trichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,1-Dichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,1-Dichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dichloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2,3-Trichlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2,3-Trichloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2,4-Trichlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2,4-Trimethylbenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dibromo-3-chloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dibromoethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dichlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,2-Dichloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,3,5-Trimethylbenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,3-Dichlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
1,3-Dichloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
1,4-Dichlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
2,2-Dichloropropane	ND	50	ug/L	10	12/11/2008 02:45 AM
2-Chlorotoluene	ND	50	ug/L	10	12/11/2008 02:45 AM
4-Chlorotoluene	ND	50	ug/L	10	12/11/2008 02:45 AM
4-Isopropyltoluene	ND	50	ug/L	10	12/11/2008 02:45 AM
Benzene	ND	50	ug/L	10	12/11/2008 02:45 AM
Bromobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
Bromodichloromethane	ND	50	ug/L	10	12/11/2008 02:45 AM
Bromoform	ND	50	ug/L	10	12/11/2008 02:45 AM
Bromomethane	ND	50	ug/L	10	12/11/2008 02:45 AM
Carbon tetrachloride	ND	50	ug/L	10	12/11/2008 02:45 AM
Chlorobenzene	ND	50	ug/L	10	12/11/2008 02:45 AM
Chloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM
Chloroform	ND	50	ug/L	10	12/11/2008 02:45 AM
Chloromethane	ND	50	ug/L	10	12/11/2008 02:45 AM
cis-1,2-Dichloroethane	ND	50	ug/L	10	12/11/2008 02:45 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Spillage outside of limits due to matrix interference
DU Sample Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	MS11_081210B	QC Batch:	A08VW338		PrepDate:	Analyst: SLL
cis-1,3-Dichloropropene		ND	50	µg/L	10	12/11/2008 02:45 AM
Di-isopropyl ether		ND	50	µg/L	10	12/11/2008 02:45 AM
Dibromochloromethane		ND	50	µg/L	10	12/11/2008 02:45 AM
Dibromomethane		ND	50	µg/L	10	12/11/2008 02:45 AM
Dichlorodifluoromethane		ND	50	µg/L	10	12/11/2008 02:45 AM
Ethyl tert-butyl ether		ND	50	µg/L	10	12/11/2008 02:45 AM
Ethylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
Hexachlorobutadiene		ND	50	µg/L	10	12/11/2008 02:45 AM
Isopropylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
m,p-Xylene		ND	100	µg/L	10	12/11/2008 02:45 AM
Methylene chloride		ND	50	µg/L	10	12/11/2008 02:45 AM
MTBE		ND	50	µg/L	10	12/11/2008 02:45 AM
n-Butylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
n-Propylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
Naphthalene		74	50	µg/L	10	12/11/2008 02:45 AM
o-Xylene		ND	50	µg/L	10	12/11/2008 02:45 AM
sec-Butylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
Styrene		ND	50	µg/L	10	12/11/2008 02:45 AM
Tert-amyl methyl ether		ND	50	µg/L	10	12/11/2008 02:45 AM
Tert-Butanol		ND	1000	µg/L	10	12/11/2008 02:45 AM
tert-Butylbenzene		ND	50	µg/L	10	12/11/2008 02:45 AM
Tetrachloroethene		ND	50	µg/L	10	12/11/2008 02:45 AM
Toluene		ND	50	µg/L	10	12/11/2008 02:45 AM
trans-1,2-Dichloroethene		ND	50	µg/L	10	12/11/2008 02:45 AM
Trichloroethene		ND	50	µg/L	10	12/11/2008 02:45 AM
Trichlorofluoromethane		ND	50	µg/L	10	12/11/2008 02:45 AM
Vinyl chloride		ND	50	µg/L	10	12/11/2008 02:45 AM
Surr: 1,2-Dichloroethene-d4		108	70-130	%REC	10	12/11/2008 02:45 AM
Surr: 4-Bromofluorobenzene		98.7	70-130	%REC	10	12/11/2008 02:45 AM
Surr: Dibromofluoromethane		107	70-130	%REC	10	12/11/2008 02:45 AM
Surr: Toluene-d8		105	70-130	%REC	10	12/11/2008 02:45 AM

Qualifiers: B Analyte detected in the associated Method Blank.
 V Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 ND Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Unit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004B

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC6_081211A	QC Batch: 108VW225	PrepDate:	Analyst: DDL
GRO	1.6	0.20	mg/L
Surr: Bromofluorobenzene (FID)	109	71-130	%REC
			1
			12/11/2008 10:21 PM
			12/11/2008 10:21 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

- L Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chernoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C						
EPA 8270C						
RunID: MSE_081212A	QC Batch: 51070				PrepDate: 12/12/2008	Analyst: DMP
1,2,4-Trichlorobenzene	ND	11		ug/L	1	12/12/2008 11:38 PM
1,2-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:38 PM
1,3-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:38 PM
1,4-Dichlorobenzene	ND	11		ug/L	1	12/12/2008 11:38 PM
2,4,5-Trichlorophenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2,4,6-Trichlorophenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2,4-Dichlorophenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2,4-Dimethylphenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2,4-Dinitrophenol	ND	53		ug/L	1	12/12/2008 11:38 PM
2,4-Dinitrotoluene	ND	11		ug/L	1	12/12/2008 11:38 PM
2,6-Dinitrotoluene	ND	11		ug/L	1	12/12/2008 11:38 PM
2-Chloronaphthalene	ND	11		ug/L	1	12/12/2008 11:38 PM
2-Chlorophenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2-Methylnaphthalene	12	11		ug/L	1	12/12/2008 11:38 PM
2-Methylphenol	ND	11		ug/L	1	12/12/2008 11:38 PM
2-Nitroaniline	ND	53		ug/L	1	12/12/2008 11:38 PM
2-Nitrophenol	ND	11		ug/L	1	12/12/2008 11:38 PM
3,3'-Dichlorobenzidine	ND	21		ug/L	1	12/12/2008 11:38 PM
3-Nitroaniline	ND	53		ug/L	1	12/12/2008 11:38 PM
4,5-Dinitro-2-methylphenol	ND	53		ug/L	1	12/12/2008 11:38 PM
4-Bromophenyl-phenylether	ND	11		ug/L	1	12/12/2008 11:38 PM
4-Chloro-3-methylphenol	ND	53		ug/L	1	12/12/2008 11:38 PM
4-Chloroaniline	ND	21		ug/L	1	12/12/2008 11:38 PM
4-Chlorophenyl-phenylether	ND	11		ug/L	1	12/12/2008 11:38 PM
4-Methylphenol	ND	11		ug/L	1	12/12/2008 11:38 PM
4-Nitroaniline	ND	21		ug/L	1	12/12/2008 11:38 PM
4-Nitrophenol	ND	53		ug/L	1	12/12/2008 11:38 PM
Acenaphthene	ND	11		ug/L	1	12/12/2008 11:38 PM
Acenaphthylene	ND	11		ug/L	1	12/12/2008 11:38 PM
Anthracene	ND	11		ug/L	1	12/12/2008 11:38 PM
Benzo(a)anthracene	ND	53		ug/L	1	12/12/2008 11:38 PM
Benzo(a)anthracene	ND	11		ug/L	1	12/12/2008 11:38 PM
Benzo(a)pyrene	ND	11		ug/L	1	12/12/2008 11:38 PM
Benzo(b)fluoranthene	ND	11		ug/L	1	12/12/2008 11:38 PM
Benzo(g,h,i)perylene	ND	11		ug/L	1	12/12/2008 11:38 PM

Qualifiers: B Analyte detected in the associated Method Blank
 II Holding times for preparation or analysis exceeded
 S Spike Saturated outside of limits due to matrix interference
 DO Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_081212A	QC Batch: S1070			PrepDate: 12/12/2008		Analyst: DMP
Benzo(k)fluoranthene	ND	11		µg/L	1	12/12/2008 11:38 PM
Benzoic acid	ND	53		µg/L	1	12/12/2008 11:38 PM
Benzyl alcohol	ND	21		µg/L	1	12/12/2008 11:38 PM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	12/12/2008 11:38 PM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/12/2008 11:38 PM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	12/12/2008 11:38 PM
Bis(2-ethoxyethyl)phthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Butylbenzylphthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Chrysene	ND	11		µg/L	1	12/12/2008 11:38 PM
Di-n-butylphthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Di-n-octylphthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/12/2008 11:38 PM
Dibenzofuran	ND	11		µg/L	1	12/12/2008 11:38 PM
Diethylphthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Dimethylphthalate	ND	11		µg/L	1	12/12/2008 11:38 PM
Fluoranthene	ND	11		µg/L	1	12/12/2008 11:38 PM
Fluorene	ND	11		µg/L	1	12/12/2008 11:38 PM
Hexachlorobenzene	ND	11		µg/L	1	12/12/2008 11:38 PM
Hexachlorobutadiene	ND	21		µg/L	1	12/12/2008 11:38 PM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/12/2008 11:38 PM
Hexachloroethane	ND	11		µg/L	1	12/12/2008 11:38 PM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/12/2008 11:38 PM
Isophomene	ND	11		µg/L	1	12/12/2008 11:38 PM
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	12/12/2008 11:38 PM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/12/2008 11:38 PM
Naphthalene	26	11		µg/L	1	12/12/2008 11:38 PM
Nitrobenzene	ND	11		µg/L	1	12/12/2008 11:38 PM
Pentachlorophenol	ND	53		µg/L	1	12/12/2008 11:38 PM
Phenanthrene	ND	11		µg/L	1	12/12/2008 11:38 PM
Phenol	ND	11		µg/L	1	12/12/2008 11:38 PM
Pyrene	ND	11		µg/L	1	12/12/2008 11:38 PM
Sum: 1,2-Dichlorobenzene-d4	66.7	42-98		%REC	1	12/12/2008 11:38 PM
Sum: 2,4,6-Trichlorophenol	84.8	60-126		%REC	1	12/12/2008 11:38 PM
Sum: 2-Chlorophenol-d4	62.5	43-102		%REC	1	12/12/2008 11:38 PM
Sum: 2-Fluorobiphenyl	74.6	50-108		%REC	1	12/12/2008 11:38 PM

Qualifiers: B Analyte detected in the associated Method Blank
 15 Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 3510C		EPA 8270C			
RunID: MS6_081212A	QC Batch: 51070				PrepDate: 12/12/2008	Analyst: DMP
Surr: 2-Fluorophenol	41.6	22-69	%REC	1		12/12/2008 11:38 PM
Surr: 4-Terphenyl-d14	91.7	66-130	%REC	1		12/12/2008 11:38 PM
Surr: Nitrobenzene-d5	65.2	47-117	%REC	1		12/12/2008 11:38 PM
Surr: Phenol-d5	29.2	16-50	%REC	1		12/12/2008 11:38 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Sample outside of limits due to matrix interference
- DC Sample Not Detected

- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-004D

Client Sample ID: MW #1A
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS BY GC/FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215C	QC Batch: 51103				PrepDate: 12/15/2008	Analyst: CBR
DRQ	4.8	0.20		mg/L	1	12/15/2008 03:58 PM
Sum: p-Terphenyl	91.8	35-131		%REC	1	12/15/2008 03:58 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

L Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #1A

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-004E

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215B	QC Batch: 51137				PrepDate: 12/15/2008	Analyst: CBR
DRO	0.84	0.20		mg/L	1	12/15/2008 09:55 PM
Sum: p-Terphenyl	91.3	35-131		%REC	1	12/15/2008 09:55 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

- E Value above quantitation range
 - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified.

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 15-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #3

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-005A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081210B	QC Batch: A08VW339	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,1,1-Trichloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,1,2,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,1,2-Trichloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,1-Dichloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,1-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2,3-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2,3-Trichloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2,4-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2,4-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dibromo-3-chloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dibromoethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,3,5-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,3-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
1,3-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
1,4-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
2,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:07 AM
2-Chlorotoluene	ND	50	µg/L	10	12/11/2008 03:07 AM
4-Chlorotoluene	ND	50	µg/L	10	12/11/2008 03:07 AM
4-Isopropyltoluene	ND	50	µg/L	10	12/11/2008 03:07 AM
Benzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Bromobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Bromodichloromethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Bromoform	ND	50	µg/L	10	12/11/2008 03:07 AM
Bromomethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Carbon tetrachloride	ND	50	µg/L	10	12/11/2008 03:07 AM
Chlorobenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Chloroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Chloroform	ND	50	µg/L	10	12/11/2008 03:07 AM
Chloromethane	ND	50	µg/L	10	12/11/2008 03:07 AM
cis-1,2-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:07 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Sample outside of limits due to matrix interference
 DO Surrogate Diluted Out

F Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-005A

Client Sample ID: MW #3
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081210B	QC Batch: A08VW339	PrepDate:	Analyst: SLL		
cis-1,2-Dichloropropene	ND	50	µg/L	10	12/11/2008 03:07 AM
Di-isopropyl ether	ND	50	µg/L	10	12/11/2008 03:07 AM
Dibromochloromethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Dibromomethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Dichlorodifluoromethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Ethyl tert-butyl ether	ND	50	µg/L	10	12/11/2008 03:07 AM
Ethylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Hexachlorobutadiene	ND	50	µg/L	10	12/11/2008 03:07 AM
Isopropylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
m,p-Xylene	ND	100	µg/L	10	12/11/2008 03:07 AM
Methylene chloride	ND	50	µg/L	10	12/11/2008 03:07 AM
MTBE	ND	50	µg/L	10	12/11/2008 03:07 AM
n-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
n-Propylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Naphthalene	ND	50	µg/L	10	12/11/2008 03:07 AM
o-Xylene	ND	50	µg/L	10	12/11/2008 03:07 AM
sec-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Styrene	ND	50	µg/L	10	12/11/2008 03:07 AM
Tert-amyl methyl ether	ND	50	µg/L	10	12/11/2008 03:07 AM
Tert-Butanol	ND	1000	µg/L	10	12/11/2008 03:07 AM
tert-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:07 AM
Tetrafluoroethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Toluene	ND	50	µg/L	10	12/11/2008 03:07 AM
trans-1,2-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:07 AM
Trichloroethene	ND	50	µg/L	10	12/11/2008 03:07 AM
Trichlorofluoromethane	ND	50	µg/L	10	12/11/2008 03:07 AM
Vinyl chloride	ND	50	µg/L	10	12/11/2008 03:07 AM
Sum: 1,2-Dichloroethane-d4	107	70-130	%REC	10	12/11/2008 03:07 AM
Sum: 4-Bromofluorobenzene	94.0	70-130	%REC	10	12/11/2008 03:07 AM
Sum: Dibromofluoromethane	110	70-130	%REC	10	12/11/2008 03:07 AM
Sum: Toluene-d8	106	70-130	%REC	10	12/11/2008 03:07 AM

Qualifiers: B Analyte detected in the associated Method Blank
E Holding times for preparation or analysis succeeded
S Spike Surrogate outside of limits due to matrix interference
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #3

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-005B

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC6_061211A

OC Batch: 106VW225

PrepDate:

Analyst: DDL

GRO	ND	0.20	mg/L	1	12/11/2008 10:51 PM
Surr: Bromofluorobenzene (FID)	85.4	71-130	%REC	1	12/11/2008 10:51 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Straggle outside of limits due to matrix interference		Results are wet unless otherwise specified
	DD	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #3

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-005C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: M56_091212A	QC Batch: 51070			PrepDate: 12/12/2008		Analyst: DMP
1,2,4-Trichlorobenzene	ND	11		ug/L	1	12/13/2008 12:06 AM
1,2-Dichlorobenzene	ND	11		ug/L	1	12/13/2008 12:06 AM
1,3-Dichlorobenzene	ND	11		ug/L	1	12/13/2008 12:06 AM
1,4-Dichlorobenzene	ND	11		ug/L	1	12/13/2008 12:06 AM
2,4,5-Trichlorophenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2,4,6-Trichlorophenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2,4-Dichlorophenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2,4-Dimethylphenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2,4-Dinitrophenol	ND	53		ug/L	1	12/13/2008 12:06 AM
2,4-Dinitrotoluene	ND	11		ug/L	1	12/13/2008 12:06 AM
2,6-Dinitrotoluene	ND	11		ug/L	1	12/13/2008 12:06 AM
2-Chloronaphthalene	ND	11		ug/L	1	12/13/2008 12:06 AM
2-Chlorophenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2-Methylnaphthalene	ND	11		ug/L	1	12/13/2008 12:06 AM
2-Methylphenol	ND	11		ug/L	1	12/13/2008 12:06 AM
2-Nitroaniline	ND	53		ug/L	1	12/13/2008 12:06 AM
2-Nitrophenol	ND	11		ug/L	1	12/13/2008 12:06 AM
3,3'-Dichlorobenzidine	ND	21		ug/L	1	12/13/2008 12:06 AM
3-Nitroaniline	ND	53		ug/L	1	12/13/2008 12:06 AM
4,6-Dinitro-2-methylphenol	ND	53		ug/L	1	12/13/2008 12:06 AM
4-Bromophenyl-phenylether	ND	11		ug/L	1	12/13/2008 12:06 AM
4-Chloro-3-methylphenol	ND	53		ug/L	1	12/13/2008 12:06 AM
4-Chloroaniline	ND	21		ug/L	1	12/13/2008 12:06 AM
4-Chlorophenyl-phenylether	ND	11		ug/L	1	12/13/2008 12:06 AM
4-Methylphenol	ND	11		ug/L	1	12/13/2008 12:06 AM
4-Nitroaniline	ND	21		ug/L	1	12/13/2008 12:06 AM
4-Nitrophenol	ND	53		ug/L	1	12/13/2008 12:06 AM
Acenaphthene	ND	11		ug/L	1	12/13/2008 12:06 AM
Acenaphthylene	ND	11		ug/L	1	12/13/2008 12:06 AM
Anthracene	ND	11		ug/L	1	12/13/2008 12:06 AM
Benztidine (BZ)	ND	53		ug/L	1	12/13/2008 12:06 AM
Benzo(a)anthracene	ND	11		ug/L	1	12/13/2008 12:06 AM
Benzo(a)pyrene	ND	11		ug/L	1	12/13/2008 12:06 AM
Benzo(b)fluoranthene	ND	11		ug/L	1	12/13/2008 12:06 AM
Benzotriptylene	ND	11		ug/L	1	12/13/2008 12:06 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

- F Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-005C

Client Sample ID: MW #3
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS5_081212A	QC Batch: 51070				PrepDate: 12/12/2008	Analyst: DMP
Benzo(k)fluoranthene	ND	11		µg/L	1	12/13/2008 12:06 AM
Benzoic acid	ND	53		µg/L	1	12/13/2008 12:06 AM
Benzyl alcohol	ND	21		µg/L	1	12/13/2008 12:06 AM
Bis(2-chloroethoxy)methane	NO	11		µg/L	1	12/13/2008 12:06 AM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/13/2008 12:06 AM
Bis(2-chloroisopropyl)ether	NO	11		µg/L	1	12/13/2008 12:06 AM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Butylbenzylphthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Chrysene	NO	11		µg/L	1	12/13/2008 12:06 AM
Di-n-butylphthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Di-n-octylphthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/13/2008 12:06 AM
Dibenzofuran	ND	11		µg/L	1	12/13/2008 12:06 AM
Diethylphthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Dimethylphthalate	ND	11		µg/L	1	12/13/2008 12:06 AM
Fluoranthene	ND	11		µg/L	1	12/13/2008 12:06 AM
Fluorene	ND	11		µg/L	1	12/13/2008 12:06 AM
Hexachlorobenzene	ND	11		µg/L	1	12/13/2008 12:06 AM
Hexachlorobutadiene	ND	21		µg/L	1	12/13/2008 12:06 AM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/13/2008 12:06 AM
Hexachloroethane	ND	11		µg/L	1	12/13/2008 12:06 AM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/13/2008 12:06 AM
Isophorene	ND	11		µg/L	1	12/13/2008 12:06 AM
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	12/13/2008 12:06 AM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/13/2008 12:06 AM
Naphthalene	ND	11		µg/L	1	12/13/2008 12:06 AM
Nitrobenzene	ND	11		µg/L	1	12/13/2008 12:06 AM
Pentachlorophenol	ND	53		µg/L	1	12/13/2008 12:06 AM
Phenanthrene	ND	11		µg/L	1	12/13/2008 12:06 AM
Phenol	ND	11		µg/L	1	12/13/2008 12:06 AM
Pyrene	NO	11		µg/L	1	12/13/2008 12:06 AM
Sum: 1,2-Dichlorobenzene-d4	71.9	42-88		%REC	1	12/13/2008 12:06 AM
Sum: 2,4,6-Tribromophenol	95.5	60-128		%REC	1	12/13/2008 12:06 AM
Sum: 2-Chlorophenol-d4	74.3	43-102		%REC	1	12/13/2008 12:06 AM
Sum: 2-Fluorobiphenyl	81.5	50-108		%REC	1	12/13/2008 12:06 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-005C

Client Sample ID: MW #3
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 3510C			EPA 8270C		
RunID: MS6_081212A	QC Batch: 51070			PrepDate: 12/12/2008		Analyst: DMP
Surr: 2-Fluorophenol	54.1	22-59	%REC	1		12/13/2008 12:06 AM
Surr: 4-Terphenyl-d14	99.2	66-130	%REC	1		12/13/2008 12:06 AM
Surr: Nitrobenzene-d5	74.3	47-117	%REC	1		12/13/2008 12:06 AM
Surr: Phenol-d5	42.2	16-50	%REC	1		12/13/2008 12:06 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Spillage outside of limits due to matrix interference
 DO Spillage Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-005D

Client Sample ID: MW #3
 Collection Date: 12-9-2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS BY GC/FID

EPA 3510C

EPA 8015B(M)

RunID: GC16_081215C	QC Batch: 51103				PrepDate: 12/15/2008	Analyst: CBR
DRO	0.46	0.20		mg/L	1	12/15/2008 03:40 PM
Surrogate: p-Terphenyl	94.4	35-131		%REC	1	12/15/2008 03:40 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	F	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DK	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Tesra Environmental Corporation

Client Sample ID: MW #3

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-005E

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC18_0812158	QC Batch: 51137			PrepDate: 12/15/2008	Analyst: CBR	
DRO	ND	0.20		mg/L	1	12/15/2008 10:04 AM
Surr: p-Terphenyl	79.7	35-131		%REC	1	12/15/2008 10:04 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-006A

Client Sample ID: MW-69
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	QC Batch: A08VW340	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1,1-Trichloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1,2,2-Tetrachloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1,2-Trichloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1-Dichloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1-Dichloroethene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,1-Dichloropropene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2,3-Trichloropropane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2,4-Trimethylbenzene	5.6	5.0	µg/L	1	12/11/2008 11:55 AM
1,2-Dibromo-3-chloropropane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2-Dibromoethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2-Dichlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2-Dichloromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,2-Dichloropropane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,3,5-Trimethylbenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,3-Dichlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,3-Dichloropropane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
1,4-Dichlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
2,2-Dichloropropane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
2-Chlorotoluene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
4-Chlorotoluene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
4-Isopropyltoluene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Benzene	160	50	µg/L	10	12/11/2008 03:28 AM
Bromobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Bromodichloromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Bromoform	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Bromomethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Carbon tetrachloride	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Chlorobenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Chloroethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Chloroform	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Chloromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
cis-1,2-Dichloroethene	ND	5.0	µg/L	1	12/11/2008 11:55 AM

Qualifiers: R Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DD Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-006A

Client Sample ID: MW #9
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_081211A	QC Batch: A08VW340	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Di-isopropyl ether	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Dibromochloromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Dibromomethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Dichlorodifluoromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Ethyl tert-butyl ether	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Ethylbenzene	32	5.0	µg/L	1	12/11/2008 11:55 AM
Hexachlorobutadiene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Isopropylbenzene	68	5.0	µg/L	1	12/11/2008 11:55 AM
m,p-Xylene	50	10	µg/L	1	12/11/2008 11:55 AM
Methylene chloride	ND	5.0	µg/L	1	12/11/2008 11:55 AM
MIBE	ND	5.0	µg/L	1	12/11/2008 11:55 AM
n-Butylbenzene	5.6	5.0	µg/L	1	12/11/2008 11:55 AM
n-Propylbenzene	59	5.0	µg/L	1	12/11/2008 11:55 AM
Naphthalene	100	50	µg/L	10	12/11/2008 03:28 AM
o-Xylene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
sec-Butylbenzene	10	5.0	µg/L	1	12/11/2008 11:55 AM
Styrene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Tert-amyl methyl ether	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Tert-Butanol	ND	100	µg/L	1	12/11/2008 11:55 AM
tert-Butylbenzene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Tetrachloroethene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Toluene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
trans-1,2-Dichloroethene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Trichloroethene	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Trichlorofluoromethane	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Vinyl chloride	ND	5.0	µg/L	1	12/11/2008 11:55 AM
Surr: 1,2-Dichloroethane-d4	102	70-130	%REC	10	12/11/2008 03:28 AM
Surr: 1,2-Dichloroethane-d4	100	70-130	%REC	1	12/11/2008 11:55 AM
Surr: 4-Bromofluorobenzene	115	70-130	%REC	1	12/11/2008 11:55 AM
Surr: 4-Bromofluorobenzene	100	70-130	%REC	10	12/11/2008 03:28 AM
Surr: Dibromofluoromethane	99.7	70-130	%REC	1	12/11/2008 11:55 AM
Surr: Dibromofluoromethane	103	70-130	%REC	10	12/11/2008 03:28 AM
Surr: Toluene-d8	125	70-130	%REC	1	12/11/2008 11:55 AM
Surr: Toluene-d8	109	70-130	%REC	10	12/11/2008 03:28 AM

Qualifiers: B Analyte detected in the associated Method Blank
E Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #9

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-006B

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC6_551211A

QC Batch: 108/VW225

PrepDate:

Analyst: ODL

GRO	4.9	0.20		mg/L	1	12/11/2008 11:21 PM
Sum: Bromofluorobenzene (FID)	120	71-130		%REC	1	12/11/2008 11:21 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DD Surrogate Diluted Out

- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-006C

Client Sample ID: MW #9
Collection Date: 12/9/2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID	MS6_081212A	QC Batch	51070	PrepDate	12/12/2008	Analyst	DMP
1,2,4-Trichlorobenzene	ND	11	µg/L	1	12/13/2008 12:34 AM		
1,2-Dichlorobenzene	ND	11	µg/L	1	12/13/2008 12:34 AM		
1,3-Dichlorobenzene	ND	11	µg/L	1	12/13/2008 12:34 AM		
1,4-Dichlorobenzene	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,4,5-Trichlorophenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,4,6-Trichlorophenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,4-Dichlorophenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,4-Dimethylphenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,4-Dinitrophenol	ND	53	µg/L	1	12/13/2008 12:34 AM		
2,4-Dinitrotoluene	ND	11	µg/L	1	12/13/2008 12:34 AM		
2,6-Dinitrotoluene	ND	11	µg/L	1	12/13/2008 12:34 AM		
2-Chloronaphthalene	ND	11	µg/L	1	12/13/2008 12:34 AM		
2-Chlorophenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2-Methylnaphthalene	ND	11	µg/L	1	12/13/2008 12:34 AM		
2-Methylphenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
2-Nitroaniline	ND	53	µg/L	1	12/13/2008 12:34 AM		
2-Nitrophenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
3,3'-Dichlorobenzidine	ND	21	µg/L	1	12/13/2008 12:34 AM		
3-Nitroaniline	ND	53	µg/L	1	12/13/2008 12:34 AM		
4,6-Dinitro-2-methylphenol	ND	53	µg/L	1	12/13/2008 12:34 AM		
4-Bromophenyl-phenylether	ND	11	µg/L	1	12/13/2008 12:34 AM		
4-Chloro-3-methylphenol	ND	53	µg/L	1	12/13/2008 12:34 AM		
4-Chloroaniline	ND	21	µg/L	1	12/13/2008 12:34 AM		
4-Chlorophenyl-phenylether	ND	11	µg/L	1	12/13/2008 12:34 AM		
4-Methylphenol	ND	11	µg/L	1	12/13/2008 12:34 AM		
4-Nitroaniline	ND	21	µg/L	1	12/13/2008 12:34 AM		
4-Nitrophenol	ND	53	µg/L	1	12/13/2008 12:34 AM		
Acenaphthene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Acenaphthylene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Anthracene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Benzidine (M)	ND	53	µg/L	1	12/13/2008 12:34 AM		
Benzo(a)anthracene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Benzo(a)pyrene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Benzo(b)fluoranthene	ND	11	µg/L	1	12/13/2008 12:34 AM		
Benzo(g,h,i)perylene	ND	11	µg/L	1	12/13/2008 12:34 AM		

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet ticks otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemoil Refinery
Lab ID: 102606-006C

Client Sample ID: MW #9
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_081212A	QC Batch: 51070			PrepDate: 12/12/2008		Analyst: DMP
Benzo(k)fluoranthene	ND	11		µg/L	1	12/13/2008 12:34 AM
Benzoic acid	ND	53		µg/L	1	12/13/2008 12:34 AM
Benzyl alcohol	ND	21		µg/L	1	12/13/2008 12:34 AM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	12/13/2008 12:34 AM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/13/2008 12:34 AM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	12/13/2008 12:34 AM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Butylbenzylphthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Chrysene	ND	11		µg/L	1	12/13/2008 12:34 AM
Di-n-butylphthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Di-n-octylphthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/13/2008 12:34 AM
Dibenzofuran	ND	11		µg/L	1	12/13/2008 12:34 AM
Diethylphthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Dimethylphthalate	ND	11		µg/L	1	12/13/2008 12:34 AM
Fluoranthene	ND	11		µg/L	1	12/13/2008 12:34 AM
Fluorene	ND	11		µg/L	1	12/13/2008 12:34 AM
Hexachlorobenzene	ND	11		µg/L	1	12/13/2008 12:34 AM
Hexachlorobutadiene	ND	21		µg/L	1	12/13/2008 12:34 AM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/13/2008 12:34 AM
Hexachloromethane	ND	11		µg/L	1	12/13/2008 12:34 AM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/13/2008 12:34 AM
Isophorone	ND	11		µg/L	1	12/13/2008 12:34 AM
N-Nitrosod-n-propylamine	ND	11		µg/L	1	12/13/2008 12:34 AM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/13/2008 12:34 AM
Naphthalene	ND	11		µg/L	1	12/13/2008 12:34 AM
Nitrobenzene	ND	11		µg/L	1	12/13/2008 12:34 AM
Pentachlorophenol	ND	53		µg/L	1	12/13/2008 12:34 AM
Phenanthrene	ND	11		µg/L	1	12/13/2008 12:34 AM
Phenol	ND	11		µg/L	1	12/13/2008 12:34 AM
Pyrene	ND	11		µg/L	1	12/13/2008 12:34 AM
Surr: 1,2-Dichlorobenzene-d4	65.3	42-38		%REC	1	12/13/2008 12:34 AM
Surr: 2,4,6-Tribromophenol	96.5	60-128		%REC	1	12/13/2008 12:34 AM
Surr: 2-Chlorophenol-d4	67.7	42-102		%REC	1	12/13/2008 12:34 AM
Surr: 2-Fluorobiphenyl	74.1	50-108		%REC	1	12/13/2008 12:34 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #9

Lab Order: 102606

Collection Date: 12/9/2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-0066

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 3510C				EPA 8270C	
RunID: MS6_081212A	QC Batch: 51070				PrepDate: 12/12/2008	Analyst: DMP
Surr: 2-Fluorophenol	43.3	22-59	%REC	1		12/13/2008 12:34 AM
Surr: 4-Terphenyl-d14	99.6	66-130	%REC	1		12/13/2008 12:34 AM
Surr: Nitrobenzene-d5	62.7	47-117	%REC	1		12/13/2008 12:34 AM
Surr: Phenol-d5	30.3	16-50	%REC	1		12/13/2008 12:34 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- FI Holding time for preparation or analysis exceeded
- S Spike Surrogate outside of 0.9 units due to matrix interference
- DU Surrogate Diluted Out

- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #9

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-006D

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS BY GC/FID

EPA 3510C

EPA 8015B(M)

RunID: GC16_081215C

QC Batch: 51103

PrepDate: 12/15/2008 Analyst: CBR

DRO	7.6	2.0		mg/L	10	12/15/2008 04:45 PM
Surr: o-Terphenyl	0	35-131	500	%REC	10	12/15/2008 04:45 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #9

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-006E

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C			EPA 8015B(M)		
RunID: GC16_081215B	QC Batch: 51137			PrepDate: 12/15/2008		Analyst: CBR
DRO	1.3	0.20		mg/L	1	12/15/2008 10:13 AM
Surrogate: p-Terphenyl	95.1	35-131		%REC	1	12/15/2008 10:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	F	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemical Refinery
Lab ID: 102606-007A

Client Sample ID: MW #8
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_061210B	QC Batch: A08VW339	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1,1-Trichloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1,2,2-Tetrachloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1,2-Trichloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1-Dichloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,1-Dichloropropene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2,3-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2,3-Trichloropropane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2,4-Trichlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2,4-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2-Dibromo-3-chloropropane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2-Dibromoethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2-Dichloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,3,5-Trimethylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,3-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
1,3-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:49 AM
1,4-Dichlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
2,2-Dichloropropane	ND	50	µg/L	10	12/11/2008 03:49 AM
2-Chlorotoluene	ND	50	µg/L	10	12/11/2008 03:49 AM
4-Chlorotoluene	ND	50	µg/L	10	12/11/2008 03:49 AM
4-Isopropyltoluene	ND	50	µg/L	10	12/11/2008 03:49 AM
Benzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Bromobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Bromodichloromethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Bromoform	ND	50	µg/L	10	12/11/2008 03:49 AM
Bromomethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Carbon tetrachloride	ND	50	µg/L	10	12/11/2008 03:49 AM
Chlorobenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Chloroethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Chloroform	ND	50	µg/L	10	12/11/2008 03:49 AM
Chloromethane	ND	50	µg/L	10	12/11/2008 03:49 AM
cis-1,2-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:49 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Nonspike outside of limits due to matrix interference
DC Surrogate Diluted Out

L Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #8

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-007A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_0812108	QC Batch: A08VW339	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	50	µg/L	10	12/11/2008 03:49 AM
Di-isopropyl ether	ND	50	µg/L	10	12/11/2008 03:49 AM
Dibromochloromethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Dibromomethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Dichlorodifluoromethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Ethyl tert-butyl ether	ND	50	µg/L	10	12/11/2008 03:49 AM
Ethylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Hexachlorobutadiene	ND	50	µg/L	10	12/11/2008 03:49 AM
Isopropylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
m,p-Xylene	ND	100	µg/L	10	12/11/2008 03:49 AM
Methylene chloride	ND	50	µg/L	10	12/11/2008 03:49 AM
MTBE	ND	50	µg/L	10	12/11/2008 03:49 AM
n-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
n-Propylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Naphthalene	ND	50	µg/L	10	12/11/2008 03:49 AM
o-Xylene	ND	50	µg/L	10	12/11/2008 03:49 AM
sec-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Styrene	ND	50	µg/L	10	12/11/2008 03:49 AM
Tert-amyl methyl ether	ND	50	µg/L	10	12/11/2008 03:49 AM
Tert-Butanol	ND	1000	µg/L	10	12/11/2008 03:49 AM
tert-Butylbenzene	ND	50	µg/L	10	12/11/2008 03:49 AM
Tetrachloroethene	ND	50	µg/L	10	12/11/2008 03:49 AM
Toluene	ND	50	µg/L	10	12/11/2008 03:49 AM
trans-1,2-Dichloroethene	ND	50	µg/L	10	12/11/2008 03:49 AM
Trichloroethene	ND	50	µg/L	10	12/11/2008 03:49 AM
Trichlorofluoromethane	ND	50	µg/L	10	12/11/2008 03:49 AM
Vinyl chloride	ND	50	µg/L	10	12/11/2008 03:49 AM
Surr. 1,2-Dichloroethane-d4	106	70-130	%REC	10	12/11/2008 03:49 AM
Surr. 4-Bromofluorobenzene	98.0	70-130	%REC	10	12/11/2008 03:49 AM
Surr. Dibromofluoromethane	106	70-130	%REC	10	12/11/2008 03:49 AM
Surr. Toluene-d8	106	70-130	%REC	10	12/11/2008 03:49 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike Sample(s) outside of limits due to matrix interference
 DO Sample(s) Diluted Out

E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-007H

Client Sample ID: MW #8
 Collection Date: 12-9-2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: GC6_081211A	QC Batch: 108VW225	PrepDate:	Analyst: DDL
GRO	1.2	0.20	mg/L
Surr: Bromofluorobenzene (FID)	91.6	71-130	%REC

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding time for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DD	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
Lab Order: 102606
Project: Chemait Refinery
Lab ID: 102606-007C

Client Sample ID: MW #8
Collection Date: 12-9-2008
Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C						
RunID: MS6_081212A	QC Batch: 51070	PrepDate: 12/12/2008 Analyst: DMP				
1,2,4-Trichlorobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
1,2-Dichlorobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
1,3-Dichlorobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
1,4-Dichlorobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
2,4,5-Trichlorophenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2,4,6-Trichlorophenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2,4-Dichlorophenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2,4-Dimethylphenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2,4-Dinitrophenol	ND	53		µg/L	1	12/13/2008 01:02 AM
2,4-Dinitrotoluene	ND	11		µg/L	1	12/13/2008 01:02 AM
2,6-Dinitrotoluene	ND	11		µg/L	1	12/13/2008 01:02 AM
2-Chloronaphthalene	ND	11		µg/L	1	12/13/2008 01:02 AM
2-Chlorophenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2-Methylnaphthalene	ND	11		µg/L	1	12/13/2008 01:02 AM
2-Methylphenol	ND	11		µg/L	1	12/13/2008 01:02 AM
2-Nitroaniline	ND	53		µg/L	1	12/13/2008 01:02 AM
2-Nitrophenol	ND	11		µg/L	1	12/13/2008 01:02 AM
3,3'-Dichlorobenzidine	ND	21		µg/L	1	12/13/2008 01:02 AM
3-Nitroaniline	ND	53		µg/L	1	12/13/2008 01:02 AM
4,6-Dinitro-2-methylphenol	ND	53		µg/L	1	12/13/2008 01:02 AM
4-Bromophenyl-phenylether	ND	11		µg/L	1	12/13/2008 01:02 AM
4-Chloro-3-methylphenol	ND	53		µg/L	1	12/13/2008 01:02 AM
4-Chloroaniline	ND	21		µg/L	1	12/13/2008 01:02 AM
4-Chlorophenyl-phenylether	ND	11		µg/L	1	12/13/2008 01:02 AM
4-Methylphenol	ND	11		µg/L	1	12/13/2008 01:02 AM
4-Nitroaniline	ND	21		µg/L	1	12/13/2008 01:02 AM
4-Nitrophenol	ND	53		µg/L	1	12/13/2008 01:02 AM
Acenaphthene	ND	11		µg/L	1	12/13/2008 01:02 AM
Acenaphthylene	ND	11		µg/L	1	12/13/2008 01:02 AM
Anthracene	ND	11		µg/L	1	12/13/2008 01:02 AM
Benidine (M)	ND	53		µg/L	1	12/13/2008 01:02 AM
Benzo(a)anthracene	ND	11		µg/L	1	12/13/2008 01:02 AM
Benzo(a)pyrene	ND	11		µg/L	1	12/13/2008 01:02 AM
Benzo(b)fluoranthene	ND	11		µg/L	1	12/13/2008 01:02 AM
Benzo(g,h,i)perylene	ND	11		µg/L	1	12/13/2008 01:02 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out

F Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #8

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-007C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C			EPA 8270C			
RunID: MS6_081212A	QC Batch: 51070			PrepDate: 12/12/2008		Analyst: DMP
Benzo(k)fluoranthene	ND	11		µg/L	1	12/13/2008 01:02 AM
Benzoic acid	ND	53		µg/L	1	12/13/2008 01:02 AM
Benzyl alcohol	ND	21		µg/L	1	12/13/2008 01:02 AM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	12/13/2008 01:02 AM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	12/13/2008 01:02 AM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	12/13/2008 01:02 AM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Butylbenzylphthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Chrysene	ND	11		µg/L	1	12/13/2008 01:02 AM
Di-n-butylphthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Di-n-octylphthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Dibenz(a,h)anthracene	ND	11		µg/L	1	12/13/2008 01:02 AM
Dibenzofuran	ND	11		µg/L	1	12/13/2008 01:02 AM
Diethylphthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Dimethylphthalate	ND	11		µg/L	1	12/13/2008 01:02 AM
Fluoranthene	ND	11		µg/L	1	12/13/2008 01:02 AM
Fluorene	ND	11		µg/L	1	12/13/2008 01:02 AM
Hexachlorobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
Hexachlorobutadiene	ND	21		µg/L	1	12/13/2008 01:02 AM
Hexachlorocyclopentadiene	ND	11		µg/L	1	12/13/2008 01:02 AM
Hexachloroethane	ND	11		µg/L	1	12/13/2008 01:02 AM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	12/13/2008 01:02 AM
Isophorone	ND	11		µg/L	1	12/13/2008 01:02 AM
N-Nitrosodn-propylamine	ND	11		µg/L	1	12/13/2008 01:02 AM
N-Nitrosodiphenylamine	ND	11		µg/L	1	12/13/2008 01:02 AM
Naphthalene	ND	11		µg/L	1	12/13/2008 01:02 AM
Nitrobenzene	ND	11		µg/L	1	12/13/2008 01:02 AM
Pentachlorophenol	ND	53		µg/L	1	12/13/2008 01:02 AM
Phenanthrene	ND	11		µg/L	1	12/13/2008 01:02 AM
Phenol	ND	11		µg/L	1	12/13/2008 01:02 AM
Pyrene	ND	11		µg/L	1	12/13/2008 01:02 AM
Sum: 1,2-Dichlorobenzene-d4	77.6	42-98		%REC	1	12/13/2008 01:02 AM
Sum: 2,4,6-Trichlorophenol	101	60-128		%REC	1	12/13/2008 01:02 AM
Sum: 2-Chlorophenol-d4	71.0	43-102		%REC	1	12/13/2008 01:02 AM
Sum: 2-Fluorobiphenyl	77.6	50-108		%REC	1	12/13/2008 01:02 AM

Qualifiers: B Analyte detected in the associated Method Blank
 F Holding time for preparation or analysis exceeded
 S Spike Surrogate outside of limits due to matrix interference
 (X) Surrogate Diluted Out

C Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation

Client Sample ID: MW #8

Lab Order: 102606

Collection Date: 12-9-2008

Project: Chemoil Refinery

Matrix: GROUNDWATER

Lab ID: 102606-007C

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C

EPA 8270C

RunID	MS6_081212A	QC Batch:	51070	PrepDate:	12/12/2008	Analyst:	DMP
Surr:	2-Fluorophenol	48.6	22-69	%REC	1	12/13/2008 01:02 AM	
Surr:	4-Terphenyl-d14	97.6	66-130	%REC	1	12/13/2008 01:02 AM	
Surr:	Nitrobenzene-d5	70.1	47-117	%REC	1	12/13/2008 01:02 AM	
Surr:	Phenol-d5	33.8	16-50	%REC	1	12/13/2008 01:02 AM	

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DC Surrogate Diluted Out

- F Value above quantitation range
- ND Not Detected in the Reporting Limit

Results are not unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemoil Refinery
 Lab ID: 102606-0073

Client Sample ID: MW #8
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS BY GC/FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215C	QC Batch: 51103				PrepDate: 12/15/2008	Analyst: CBR
DRO	11	2.0		mg/L	10	12/15/2008 04:36 PM
Surrogate: p-Terphenyl	103	35-131		%REC	10	12/15/2008 04:36 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	F	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DD	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 16-Dec-08

CLIENT: Testa Environmental Corporation
 Lab Order: 102606
 Project: Chemical Refinery
 Lab ID: 102606-007E

Client Sample ID: MW #8
 Collection Date: 12/9/2008
 Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SILICA GEL CLEANUP DRO BY GC-FID						
	EPA 3510C		EPA 8015B(M)			
RunID: GC16_081215B	QC Batch: 51137			PrepDate: 12/15/2008		Analyst: CBR
DRO	1.2	0.20		mg/L	1	12/15/2008 10:23 AM
Sum: p-Terphenyl	73.8	35-135		%REC	1	12/15/2008 10:23 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- EE Holding times for preparation or analysis exceeded
- S Spike Surrogate outside of limits due to matrix interference
- DD Surrogate Diluted Out

- E Value above quantitation range
 - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

Date: 16-May-08

CLIENT: Texas Environmental Corporation
Work Order: 102606
Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DSL.H

Sample ID	LCS-51103	Sample Type	LCS	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102979			
Client ID	LCSW	Batch ID	51103	TestNo	EPA 8015B(M)	EPA	3510C	Analysis Date	12/15/2009	SeqNo	1406170			
Analysis		Result		POL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD Limit	Qual

DRG		0.906		0.20	1.000	0		100.0	42	130				
Surrogate Recovery		0.002			0.00000			80.6	35	130				

Sample ID MB-51103	Sample Type, MBLK	TestCode, B015_W_DSL	Units, mg/L	Prep Date	12/15/2008	RunNo, 102979					
Client ID PBW	Batch ID 51103	TestNo, EPA 8015B(M)	EPA 3510C	Analysis Date	12/15/2008	SeqNo, 1006171					
Analysis	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPD Limit	Qual

DRG		ND		0.20	0.05000			95.9	35	130				
Surrogate Recovery		0.077												

Sample ID	MB-51103MS	Sample Type	MS	Test Code	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102979			
Client ID	ZZZZZZ	Batch ID	51103	TestNo	EPA 8015B(M)	EPA	3510C	Analysis Date	12/15/2008	SeqNo	1006182			
Analysis		Result		POL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPD Limit	Qual

DRG		0.969		0.20	1.000	0		100.0	42	130				
Surrogate Recovery		0.073			0.00000			90.9	35	130				

Sample ID	MB-51193MSD	Sample Type	MSD	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102979			
Client ID	ZZZZZZ	Batch ID	51103	TestNo	EPA 8015B(M)	EPA	3510C	Analysis Date	12/15/2008	SeqNo	1006183			
Analysis		Result		POL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD Limit	Qual

DRG		0.945		0.20	1.000	0		93.5	42	118	0.9692	3.62	20	
Surrogate Recovery		0.060			0.00000			74.5	35	130		0	0	

Qualifiers:

- H Analyte detected in the associated Method Blank
- F Value above quantitation range
- N Holding times for preparation or analysis exceeded
- ND Not Detected in the Reporting Turn
- S Surrogate outside of limits due to matrix interference
- Q Qualifiers are based on raw values
- SPK Spiked Sample

CLIENT: Testa Environmental Corporation
Work Order: 102606
Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DSL_HSGT

Sample ID	LCS-51137	Sample Type	LCS	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102976		
Client ID	LCSW	Batch ID	51137	TestNo	EPA 8015B(M)	EPA 3510C		Analysis Date	12/15/2008	SeqNo	1606093		
Analysis		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRG		0.955		0.20	1.000	0	95.5	42	131				
Start p-Terpene		0.069			0.08000		95.5	35	131				

Sample ID	MB-51137	Sample Type	MBLK	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102976		
Client ID	PBW	Batch ID	51137	TestNo	EPA 8015B(M)	EPA 3510C		Analysis Date	12/15/2008	SeqNo	1606094		
Analysis		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRG		ND		0.20									
Start p-Terpene		0.007			0.03000		94.3	35	131				

Sample ID	MB-51137MS	Sample Type	MS	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102976		
Client ID	ZZZZZZ	Batch ID	51137	TestNo	EPA 8015B(M)	EPA 3510C		Analysis Date	12/15/2008	SeqNo	1606095		
Analysis		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	MD-51137MSD	Sample Type	MSD	TestCode	8015_W_DSL	Units	mg/L	Prep Date	12/15/2008	RunNo	102976		
Client ID	ZZZZZZ	Batch ID	51137	TestNo	EPA 8015B(M)	EPA 3510C		Analysis Date	12/15/2008	SeqNo	1606096		
Analysis		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRG		0.807		0.20	1.000	0	80.7	42	131	0.0912	2.77	20	
Start p-Terpene		0.069			0.03000		94.9	35	131		0	0	

Qualifiers:
 B Analyte Detected in the associated Method Block
 E Value above operation range
 R RPD outside accepted recovery limits
 N Spike Sample outside of limits due to matrix interference
 S01 Sample Shared Unit
 C Calculations are based on raw values

CLIENT: Testo Environmental Corporation
 Work Order: 102606
 Project: Charcoal Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_G_PRES

Sample ID	1001211LCS2	SampleType	LCS	TestDate	2015_W_G_P	Units	mg/L	Prep Date	RunNo	102834	
Client ID	LCSW	Batch ID	108VW225	TestNo	EPA 8015B(M)			Analysis Date	12/11/2008	SeqNo	1603444
Analysis	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPOLimit	Qual

GR0
 Sum Brominated Compounds (FID): 0.982 0.20 1.000 0 98.2 69 125
 Sum Brominated Compounds (FID): 97.691 97.7 71 130

Sample ID	1081211MB1MS	Sample Type	MS	Test Date	8015_W_G_P	Units	mg/L	Prep Date	Run No	102834	
Client ID	222222	Batch ID	108VW225	Test No	EPA 8015B(M)			Analysis Date	Seq No	1603445	
Analysis	Result	POL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPOLimit	Qual

GR0
 Sum Brominated Compounds (FID): 0.980 0.20 1.000 0 98.8 69 125
 Sum Brominated Compounds (FID): 97.572 97.4 71 130

Sample ID	1081211MB1MSD	Sample Type	MSD	Test Date	8015_W_G_P	Units	mg/L	Prep Date	RunNo	102834	
Client ID	222222	Batch ID	108VW225	TestNo	EPA 8015B(M)			Analysis Date:	12/11/2008	SeqNo	1603446
Analysis	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPOLimit	Qual

GR0
 Sum Brominated Compounds (FID): 0.070 0.20 1.000 0 97.6 69 125 20
 Sum Brominated Compounds (FID): 96.971 97.0 71 130 0 0

Sample ID	081211MB1	SampleType	M8LK	TestCode	8015_W_G_P	Units	mg/L	Prep Date	RunNo	102834	
Client ID	PBW	Batch ID	08VW225	TestNo	EPA 8015B(M)			Analysis Date:	12/11/2008	SeqNo. 1603447	
Analysis	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPOLimit	Qual

GR0
 Sum Brominated Compounds (FID): ND 0.20 100.0 103 71 130

Qualifiers

- R Analysis detected in the associated Method Blank
- ND Not Detected in the Reporting Limit
- DD Sample Not Detected
- F Value above quantitation range
- R RPDs outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spikes Surrogate outside of limits due to matrix interference

Calculations are based on raw values

ANALYTICAL QC SUMMARY REPORT

CLIENT: Testo Environmental Corporation
 Work Order: 102606
 Project: Chemical Refinery

Test Code: 8260_WP

Sample ID	A091101CS2	Sample Type	LC5	Test Code	8260_WP	Units	µg/L	Prop Date	Run No	102786	
Client ID	LC5W	Batch ID	A08VW339	Test No	EPA 8260B			Analysis Date	Seq No	1602638	
Analyte		Result	POL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	RPD Limit	Qual

1,1-Dichloroethene	16.920	5.0	20.00	0	84.5	70	130			
Benzene	40.950	5.0	40.00	0	101	70	130			
Chlorobenzene	20.770	5.0	20.00	0	104	70	130			
MX	20.050	5.0	20.00	0	100	70	130			
Toluene	41.440	5.0	40.00	0	104	70	130			
Trichloroethene	19.480	5.0	20.00	0	97.4	70	130			
Sum 1,2-Dichlorobenzene	26.930		25.00		108	70	130			
Sum 4-Bromobenzene	24.530		25.00		98.1	70	130			
Sum Dichloromethane	28.980		25.00		107	70	130			
Sum Toluene	20.680		25.00		106	70	130			

Sample ID	A081210MB4MS	Sample Type	MS	Test Code	8260_WP	Units	µg/L	Prep Date	RunNo.	102786	
Client ID	ZZZZZZ	Batch ID	A08VW339	Test No	EPA 8260B			Analysis Date	SeqNo.	1602639	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,3-Dichlorobenzene	16.760	5.0	20.00	0	79.5	70	130			
Benzene	36.650	5.0	40.00	0	92.1	70	130			
Chlorobenzene	18.880	5.0	20.00	0	94.3	70	130			
MX	18.520	5.0	20.00	0	92.6	70	130			
Toluene	37.000	5.0	40.00	0	94.0	70	130			
Trichloroethene	17.030	5.0	20.00	0	89.2	70	130			
Sum 1,2-Dichlorobenzene	26.670		25.00		107	70	130			
Sum 4-Bromobenzene	24.490		25.00		98.0	70	130			
Sum Dichloromethane	20.840		20.00		107	70	130			
Sum Toluene	26.470		25.00		106	70	130			

Sample ID	A081210MB4MSD	Sample Type	MSD	Test Code	8260_WP	Units	µg/L	Prop Date:	Run No	102786	
Client ID	ZZZZZZ	Batch ID	A08VW339	Test No	EPA 8260B			Analysis Date:	Seq No	1602640	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	16.920	5.0	20.00	0	84.5	70	130			
Benzene	40.950	5.0	40.00	0	101	70	130			
Chlorobenzene	20.770	5.0	20.00	0	104	70	130			
MX	20.050	5.0	20.00	0	100	70	130			
Toluene	41.440	5.0	40.00	0	104	70	130			
Trichloroethene	19.480	5.0	20.00	0	97.4	70	130			
Sum 1,2-Dichlorobenzene	26.930		25.00		108	70	130			
Sum 4-Bromobenzene	24.530		25.00		98.1	70	130			
Sum Dichloromethane	28.980		25.00		107	70	130			
Sum Toluene	20.680		25.00		106	70	130			

Qualifiers:
 H Analyte detected in the associated Method Block
 NH Not Detected in the Reporting Data
 DU Subgroup Detected Qual

Value above reparation range
 RPD outside accepted recovery limits
 Calculations are based on raw values

Holdings for preparation or analysis exceeded
 Spikes/Negative outside of limits due to matrix interference

CLIENT: Tessa Environmental Corporation
 Work Order: 803686
 Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID	A081210MB4MSD	Sample Type	MSD	TestCode	8260_WP	Units	µg/L	Prep Date	RunNo.	102785	
Client ID	ZZZZZZZ	Batch ID	A08VW339	TestNo.	EPA 8260B			Analysis Date	SeqNo.	1602640	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	16.570	5.0	20.00	0	82.8	70	130	15.70	5.39	20	20
Benzene	39.160	5.0	40.00	0	98.0	70	130	35.85	6.15	20	20
Chlorobenzene	20.380	5.0	20.00	0	101	70	130	18.95	7.26	20	20
MTC	20.180	5.0	20.00	0	101	70	130	18.52	8.53	20	20
Toluene	40.220	5.0	40.00	0	101	70	130	37.50	6.73	20	20
Xylenes	19.060	5.0	20.00	0	95.3	70	130	17.93	6.67	20	20
Sum 1,2-Dichlorobenzene-d4	20.030		25.00		107	70	130		0	20	20
Sum 1,3,5-Trichlorobenzene-d5	24.820		25.00		95.3	70	130		0	20	20
Sum Chlorobenzene-d7	27.110		25.00		109	70	130		0	20	20
Sum Toluene-d8	20.580		25.00		105	70	130		0	20	20

Sample ID	A081210MB4	Sample Type	MSLK	TestCode	8260_WP	Units	µg/L	Prep Date	RunNo.	102785		
Client ID	PGW	Batch ID	A08VW339	TestNo.	EPA 8260B			Analysis Date	SeqNo	1602641		
Analyte		Result	POL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane		ND	5.0									
1,1,1-Trichloroethane		ND	5.0									
1,1,2,2-Tetrachloroethane		ND	5.0									
1,1,2-Trichloroethane		ND	5.0									
1,1-Dichloroethane		ND	5.0									
1,3-Dichloroethane		ND	5.0									
1,1-Dichloropropane		ND	5.0									
1,2,3-Trichlorobenzene		ND	5.0									
1,2,3-Trichloropropane		ND	5.0									
1,2,4-Trichlorobenzene		ND	5.0									
1,2,4-Trichloropropane		ND	5.0									
1,2,4-Trinitrobenzene		ND	5.0									
1,2-Dibromobenzene		ND	5.0									
1,2-Dibromopropane		ND	5.0									
1,2-Dichlorobenzene		ND	5.0									
1,2-Dichloropropane		ND	5.0									

Qualifiers:

H Analyte detected in the associated Method Blank

E Value above quantal range

M Not Detected in the Reporting Limit

R RPD outside accepted recovery limits

S Spike foreign to outside of limits due to matrix interference

T Calculations are based on low values

CLIENT: Testa Environmental Corporation
 Work Order: 102606
 Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID	A081211M02MSD	SampleType	MSD	TestCode	8260_WP	Units	µg/L	Prep Date	RunNo.	102830	
Client ID	ZZZZZZ	Batch ID	A08VW340	TestNo	EPA 8260B			Analysis Date:	12/11/2008	SeqNo. 1603361	
Analyte	Result	PQL	SPK Value	SPK Ref Val	VREC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD/Limit	Qual
1,1-Dichloroethane	15.250	5.0	20.00	0	76.1	70	130	14.66	3.75	20	20
Benzene	37.050	5.0	40.00	0	92.0	70	130	37.38	0.941	20	20
Chlorobenzene	19.210	5.0	20.00	0	95.0	70	130	19.42	1.09	20	20
MTBE	19.050	5.0	20.00	0	95.2	70	130	19.41	1.97	20	20
Toluene	37.740	5.0	40.00	0	94.3	70	130	38.26	1.42	20	20
1,2-Dichloroethane	17.770	5.0	20.00	0	98.8	70	130	17.75	0.113	20	20
1,2-Dichlorobenzene d1	20.000		25.00		106	70	130		0	20	20
1,2,3-Trichlorobenzene	24.880		25.00		90.5	70	130		0	20	20
1,2,4-Trichlorobenzene	27.020		25.00		106	70	130		0	20	20
1,2,5-Trichlorobenzene	26.770		25.00		107	70	130		0	20	20

Sample ID	A081211MB2	SampleType	WBLK	TestCode	8260_WP	Units	µg/L	Prep Date	RunNo	102830		
Client ID	PBW	Batch ID	A08VW340	TestNo	EPA 8260B			Analysis Date	SeqNo	1603362		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD/Limit	Qual
1,1,2-Trichloroethane		ND	5.0									
1,1,1-Trichloroethane		ND	5.0									
1,1,2,2-Tetrachloroethane		ND	5.0									
1,1,2-Trichloroethane		ND	5.0									
1,1-Dichloroethane		ND	5.0									
1,1-Dichloroethane		ND	5.0									
1,1-Dichloroethane		ND	5.0									
1,2,3-Trichlorobenzene		ND	5.0									
1,2,3-Trichlorobenzene		ND	5.0									
1,2,4-Trichlorobenzene		ND	5.0									
1,2,4-Trichlorobenzene		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
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1,2-Dichloroethane		ND	5.0									
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1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									
1,2-Dichloroethane		ND	5.0									

Qualifiers:
 H Analyte detected in the Assay and Method Blank
 ND Not Detected at the Reporting Limit
 EX Nonregiochemical
 E Value above quantitation range
 R RPD outside accepted recovery limits
 C Calculations are based on raw values
 H Holding times for preparation or analysis exceeded
 S Spike Standard outside of limits due to matrix interference

CLIENT: Testa Environmental Corporation
 Work Order: 102606
 Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

Test Code: 8260_WP

Sample ID	Sample Type	Test Code	Units	Prep Date	Run No
A08121MB2	MBLK	8260_WP	µg/L		102830
Client ID	Batch ID	Test No.	SPK Ref Val	Analysis Date	Seq No
PBW	A080W0340	EPA 8260B		12/11/2009	1003302

Analyte	Result	PQL	SPK value	SPK Ref Val	%RGC	Low Limit	High Limit	%RPD	RPD Limit	Qual
Methylene chloride	ND	5.0								
MIBK	ND	5.0								
n-Butylbenzene	ND	5.0								
n-Propylbenzene	ND	5.0								
Naphthalene	ND	5.0								
o-Xylene	ND	5.0								
sec-Butylbenzene	ND	5.0								
Styrene	ND	5.0								
Tetra-aryl methyl ether	ND	5.0								
Tert-Butanol	ND	100								
Tert-Butylbenzene	ND	5.0								
Toluene	ND	5.0								
Toluene, 1,2-Dichlorobenzene	ND	5.0								
Trichloroethene	ND	5.0								
Trichlorofluoromethane	ND	5.0								
Unsat. Aromatics	ND	5.0								
Sum 12-Chlorobenzene	25.230		25.00		101	70	130			
Sum 4-Chlorobenzene	23.490		25.00		94.0	70	130			
Sum Chlorobenzene	25.130		25.00		100	70	130			
Sum Toluene	26.230		25.00		105	70	130			

Qualifiers

- B Analyte detected in the associated Method Blank
- ND Not Detected in the Reporting Limit
- DD Sample Diluted Out
- F Value above quantitation range
- R RPD outside accepted recovery limits
- X Calculations are based on raw values
- R Holding times for preparation of analysis exceeded
- S Spike/Recovery outside of limits due to matrix interference

CLIENT: Testa Environmental Corporation

Work Order: 102606

Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PULL

Sample ID	MBLK	TestCode	8270_W_FUL	Units	µg/L	Prep Date	12/12/2008	RunNo	102036
Client ID	PDW	Batch ID	91070	TestNo	EPA 8270C	Analysis Date	12/12/2008	SeqNo	1605291
Analysis	Result	PQL	SPR value	SPR Ref Val	WREC	LowLimit	HighLimit	RPO Ref Val	%RPO
1,2,4-Trichlorobenzene	ND	10							
1,2-Dichlorobenzene	ND	10							
1,3-Dichlorobenzene	ND	10							
1,4-Dichlorobenzene	ND	10							
2,4,6-Trichlorophenol	ND	10							
2,4,6-Trichlorophenol	ND	10							
2,4-Dichlorophenol	ND	10							
2,4-Dimethylphenol	ND	10							
2,6-Dimethylphenol	ND	50							
2,6-Dimethylphenol	ND	10							
2,6-Dimethylphenol	ND	10							
2-Chlorophenol	ND	10							
2-Chlorophenol	ND	10							
2-Nitrophenol	ND	10							
2-Nitrophenol	ND	50							
2-Nitrophenol	ND	10							
3,3-Dimethylbutene	ND	20							
3-Nitroaniline	ND	50							
4,6-Dichloro-2-methylphenol	ND	50							
4-Bromophenyl ethyl ether	ND	10							
4-Chloro-3-methylphenol	ND	50							
4-Chlorophenol	ND	20							
4-Chlorophenyl ethyl ether	ND	10							
4-Methylphenol	ND	10							
4-Nitrophenol	ND	20							
4-Nitrophenol	ND	50							
Acetophenone	ND	10							
Acetophenone	ND	10							
Acetophenone	ND	50							

Qualities

- B: Analyte detected in the associated Method Blank
- M: Not Detected in the Reporting Limit
- D: Not Detected One

- F: Value above reporting limit
- R: RPD outside accepted recovery limits
- C: Calculations are based on two values

- H: Holding times for preparation or analysis exceeded
- S: Spike Surrogate outside of limits due to matrix interference

CLIENT: Tesla Environmental Corporation
 Work Order: 102606
 Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FUL

Sample ID	MB-51070	Sample Type	MBLK	Test Code	8270_W_FUL	Units	µg/L	Prep Date	12/12/2008	RunNo	102936
Client ID	PBW	Batch ID	51070	TestNo	EPA 8270C	EPA	3510C	Analysis Date	12/12/2008	SeqNo	1605291
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLabel	Class

Napthalene	ND	10			70.3	42	98				
Nitrobenzene	ND	10			85.0	60	128				
Pyridine	ND	50			47.9	43	102				
Phenylacetylene	ND	10			77.2	50	100				
Pyrene	ND	50			45.7	22	69				
Pyrene	ND	50			95.8	66	130				
Sum 1,2-Dichlorobenzene-d4	39.080		100.0		72.1	47	117				
Sum 2,4,6-Trichlorobenzene-d5	45.040		100.0		33.7	16	50				
Sum 3-Chlorobenzene-d5	67.820										
Sum 2-Hydroxybenzyl	11.020										
Sum 2-Fluorobenzene	45.680										
Sum 4-Terphenyl-d14	95.380										
Sum Nitrobenzene-d5	72.130										
Sum Pyrene-d5	33.670										

Sample ID	LCS-51070	Sample Type	LCS	Test Code	8270_W_FUL	Units	µg/L	Prep Date	12/12/2008	Run No	102936		
Client ID	LCSW	Batch ID	51070	Test No	EPA 8270C	EPA 3510C		Analysis Date	12/12/2008	Seq No	1605292		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Label	Class

1,2,4-Trichlorobenzene	82.240	10	100.0	0	82.2	54	110				
1,4-Dichlorobenzene	74.130	10	100.0	0	74.1	43	100				
2,4-Dinitrofluorene	60.610	10	100.0	0	99.0	69	136				
2-Chlorobenzene	75.180	10	100.0	0	75.2	53	100				
4-Chloro-3-methylphenol	96.460	50	100.0	0	90.5	70	124				
4-Nitrophenol	50.940	50	100.0	0	50.9	32	69				
Acetophenone	92.830	10	100.0	0	92.8	64	118				
11-Nitro-2-n-propylbenzene	90.330	10	100.0	0	90.0	62	120				
Phenylacetylene	102.420	50	100.0	0	102	64	130				
Phenol	38.830	10	100.0	0	38.8	25	50				
Pyrene	93.110	10	100.0	0	93.1	66	123				

Qualifiers:

- 0 Analyte detected in the associated Method Blank
- ND Not Detected in the Reporting Limit
- DR Sample Diluted Data
- E Value above calibration range
- R RPD outside accepted recovery limits
- { Calculations are based on raw values
- IF Holding times for preparation or analysis exceeded
- S Spike/Spiked outside of limits due to matrix interference

CLIENT: Tesla Environmental Corporation
 Work Order: 102606
 Project: Chemoil Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FUL

Sample ID	LC5-51070	Sample Type	LC5	Test Code	8270_W_FUL	Units	µg/L	Prep Date	12/12/2008	Run No	102936
Client ID	LC5W	Batch ID	51070	Test Code	EPA 8270C	EPA	3510C	Analysis Date	12/12/2008	Seq No	1605293
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Low	Qval

Surf 1,2-Dichlorobenzene-d4
 Sur 2,4,6-Trichlorophenol
 Sur 2,4-Dichlorophenol-d5
 Sur 2-Fluorobiphenyl
 Sur 2-Fluorophenol
 Sur 2-Fluorophenol-d5
 Sur 2-Fluorophenol-d5
 Sur 2-Fluorophenol-d5

72.430
 99.089
 72.150
 95.360
 47.950
 95.060
 84.190
 35.750

100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0

0
 0
 0
 0
 0
 0
 0
 0

72.4
 99.1
 72.2
 88.4
 43.0
 94.1
 84.1
 35.0

42
 60
 43
 50
 22
 66
 47
 16

98
 120
 102
 108
 60
 130
 117
 50

Sample ID	MB-51070MS	Sample Type	MS	TestCode	8270_W_FUL	Units	µg/L	Prep Date:	12/12/2008	RunNo:	102936
Client ID	ZZZZZZ	Batch ID	51070	TestNo	EPA 8270C	EPA 3510C		Analysis Date	12/12/2008	SeqNo:	1605293
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPCLow	Qval

1,2,4-Trichlorobenzene
 1,4-Dichlorobenzene
 2,4-Dichlorobenzene
 2-Chlorophenol
 4-Chlorobenzophenone
 4-Nitrophenol
 Acetophenone
 N-Nitrosodipropylamine
 Phenanthrene
 Phenol
 Pyrene

93.360
 70.780
 101.550
 77.880
 94.000
 52.100
 92.040
 91.220
 105.000
 39.320
 94.200

10
 10
 10
 10
 50
 50
 10
 10
 50
 10
 10

100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0
 100.0

83.4
 76.8
 102
 77.9
 98.7
 52.1
 92.0
 91.2
 105
 39.6
 94.3

64
 48
 69
 53
 70
 32
 04
 62
 64
 25
 56
 42

110
 103
 126
 109
 124
 69
 110
 130
 120
 50
 123
 98

102936
 1605293

Qualifiers:
 H Analyte detected in the associated Method Blank
 ND Not Detected in the Reporting Limit
 LLO Lower Limit of Detection

F Value above quantitation range
 R RPD value above recovery limits
 Calculations are based on raw values

H Holding times for preparation or analysis exceeded
 S Spike/Storage test side of lot is due to matrix interference

CLIENT: Tesla Environmental Corporation Work Order: H12006 Project: Chemical Refinery

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FUL

Sample ID	MB-51070MS	Sample Type	MS	TestCode: 8270_W_FUL	Units	µg/L	Prop Date	12/12/2008	RunNo	102936			
Client ID	222222	Batch ID	51070	TestNo: EPA 8270C	EPA 3510C		Analysis Date	12/12/2008	SeqNo	1005293			
Analysis		Method	MS/MS	POL	SPK	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD Limit	Qual
Surf. Airbenzene-d5					100.0		94.3	0	117				
Surf. Pnend-d5					100.0		35.0	15	50				

Sample ID	MB-51070MSD	Sample Type	MSD	TestCode: 8270_W_FUL	Units	µg/L	Prop Date	12/12/2008	RunNo	102936			
Client ID	ZZZZZZ	Batch ID	51070	TestNo: EPA 8270C	EPA 3510C		Analysis Date:	12/12/2008	SeqNo	1005294			
Analysis		Method	MS/MS	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene		79.200		10	100.0	0	79.3	54	110	83.36	6.02	20	
1,4-Dichlorobenzene		72.670		10	100.0	0	72.7	48	103	76.78	5.50	20	
2,4-Dichlorobenzene		103.800		10	100.0	0	102	69	106	101.6	0.324	20	
2-Chlorophenol		74.630		10	100.0	0	74.7	53	100	77.08	4.20	20	
4-Chloro-3-methylphenol		98.000		50	100.0	0	98.0	70	124	98.69	0.702	20	
4-Nitrophenol		53.620		50	100.0	0	53.6	32	69	52.50	2.88	20	
Acetophenone		91.390		10	100.0	0	91.4	64	118	92.04	0.709	20	
N-Methyl-2-pyrrolidone		89.730		10	100.0	0	89.7	62	130	91.22	1.65	20	
Phthalobenzene		104.100		50	100.0	0	104	64	120	105.4	1.01	20	
Phenol		36.470		10	100.0	0	36.4	26	50	30.38	2.47	20	
Petroleum		94.820		10	100.0	0	94.0	60	120	94.79	0.561	20	
Surf. 1,2-Dichlorobenzene-d4		70.840			100.0		70.0	42	98		0	0	
Surf. 2,3,6-Trichlorobenzene-d5		98.610			100.0		98.6	60	128		0	0	
Surf. 2-Chlorophenol-d4		70.870			100.0		70.0	43	102		0	0	
Surf. 2,4-Dichlorobenzene-d5		84.000			100.0		84.0	50	108		0	0	
Surf. 2-Phenol-d14		47.030			100.0		47.6	22	69		0	0	
Surf. 4-Nitrophenol-d14		97.000			100.0		97.0	66	130		0	0	
Surf. Nitrobenzene-d5		79.130			100.0		73.1	47	117		0	0	
Surf. Pnend-d5		34.850			100.0		34.8	16	50		0	0	

Qualifiers:					
R	Analysis detected in the Associated Method Blank	E	Value above quantitation range	F	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted tolerance limits	S	Spikes/Surrogate outside of limits due to matrix interference
DC	Surrogate Detected Out	C	Calculations are based on raw values		