

15 April 2016

Ms. Alana Lee
EPA Region 9, Superfund Division
75 Hawthorne Street, SFD-7-3
San Francisco, California 94105

**Subject: 2015 Annual Progress Report
501 Ellis Street, Mountain View, California**

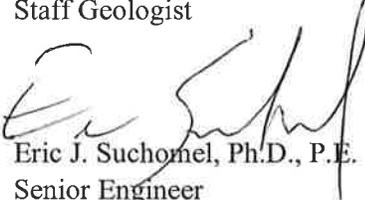
Dear Ms. Lee:

This letter transmits the subject report for 501 Ellis Street, Mountain View, California. This report describes the work that was performed pursuant to Sections XV A&B of CERCLA §106 Order, EPA Docket No. 91-4, as amended on 16 September 2011, and Section 2.6.2 of the Statement of Work for Remedial Design and Remedial Action to Address the Vapor Intrusion Pathway. Geosyntec Consultants prepared this report on behalf of Renesas Electronics America, Inc. If you have any questions or comments, please call either of the undersigned at (510) 836-3034.

Sincerely,



Lauren Deutsch
Staff Geologist



Eric J. Suchomel, Ph.D., P.E.
Senior Engineer

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Prepared for

Renesas Electronics America, Inc.
2801 Scott Boulevard
Santa Clara, California 95050-2554

2015 ANNUAL PROGRESS REPORT

**501 ELLIS STREET
MOUNTAIN VIEW, CALIFORNIA**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1111 Broadway, 6th Floor
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Project Number: WR2141

15 April 2016

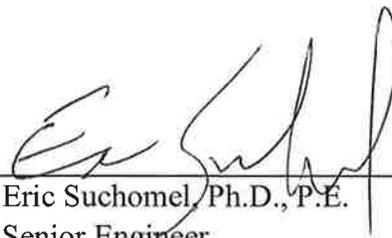
2015 Annual Progress Report
501 Ellis Street
Mountain View, California

Prepared by

Geosyntec Consultants, Inc.
1111 Broadway, 6th Floor
Oakland, California 94607



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Staff Geologist



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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
106 Order	Sections XV A&B of CERCLA §106 Order, EPA Docket No. 91-4, as amended on 16 September 2011
bgs	below ground surface
btoc	below top of casing
cis-1,2-DCE	cis-1,2-dichloroethene
COPCs	chemicals of potential concern
CSM	conceptual site model
ft/day	feet per day
ft/ft	feet per foot
ft ² /day	square feet per day
Geosyntec	Geosyntec Consultants, Inc.
gpd	gallons per day
gpm	gallons per minute
Iris	Iris Environmental
MCL	Maximum Contaminant Level
MEW	Middlefield-Ellis-Whisman
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
NEC	NEC Electronics America, Inc
O&M	operations and maintenance
PRCC	Periodic Report of Continued Compliance
Renesas	Renesas Electronics America, Inc.
Report	Annual Progress Report
RGRP	regional groundwater remediation program
RPDs	relative percent differences
RWQCB	Regional Water Quality Control Board
RWQCP	Regional Water Quality Control Plant
SCGWR	Source Control Groundwater Remediation

SOW	Statement of Work
TCE	trichloroethene
ROD	Record of Decision
the Site	501 Ellis Street, Mountain View, California
VI	vapor intrusion
VOCs	volatile organic compounds

1. INTRODUCTION

This Annual Progress Report (Report) summarizes facility specific environmental work and related activities that were performed at 501 Ellis Street, Mountain View, California (the Site) during the period 1 January through 31 December 2015. The work described in this report was performed pursuant to Sections XV A&B of CERCLA §106 Order, EPA Docket No. 91-4, as amended on 16 September 2011 (106 Order) (United States Environmental Protection Agency [EPA], 1990a; 2011a). Geosyntec Consultants, Inc. (Geosyntec) prepared this report on behalf of Renesas Electronics America, Inc. (Renesas)¹ in accordance with the EPA 6 May 2005 email correspondence prescribing 2004 and future Annual Report contents (EPA, 2005). The 2015 Annual Report Checklist is included as **Appendix A**. In addition, this report includes the annual progress reporting requirements prescribed in Section 2.6.2 of the Statement of Work for Remedial Design and Remedial Action to Address the Vapor Intrusion Pathway included in the amended 106 Order (EPA, 2011a).

1.1 Site Background

The Site is located at 501 Ellis Street and lies within the larger area bounded by Middlefield Road, Ellis Street, Whisman Road, and U.S. Highway 101 in Mountain View, California (**Figure 1**). This area includes historical locations of semiconductor manufacturing and other industrial activities, including the Site. In 1985, the EPA identified this area as the Middlefield-Ellis-Whisman (MEW) Study Area. Numerous investigations at the properties within the MEW Study Area have been conducted, and extensive soil and groundwater remedial activities have been implemented and are ongoing at many of the properties.

The Site is approximately 2 acres in size. A single-story building, constructed in 1967, occupies about 28,000 square feet of the western portion of the property, and a paved parking area occupies the eastern portion of the property (**Figure 2**). From 1968 to 1978, Electronic Arrays Corporation operated at the Site and manufactured semiconductor devices and related components. Solvents and other chemicals were used in the manufacturing process. From 1978 until April 1984, NEC Electronics America, Inc. (NEC) operated at the Site.

¹ Formerly NEC Electronics America, Inc. (NEC) prior to 15 April 2010. In this report both names (NEC and Renesas) are used in association with activities conducted at the Site.

In 1982, NEC initiated a groundwater monitoring and soil sampling program in response to the California Regional Water Quality Control Board (RWQCB) investigation of all companies that used underground chemical tanks in their production processes prior to 1 January 1975. Between 1982 and 1990, NEC completed several Site investigations that identified detectable concentrations of volatile organic compounds (VOCs), in particular trichloroethene (TCE), in the soil and groundwater beneath the Site. Soil and groundwater remedial actions were implemented in the 1990s and groundwater remedial actions are ongoing (Section 1.3).

The 501 Ellis Street building is currently used for office and meeting space. Prior to occupancy, tenant improvement construction (including temporarily opening the building slab and excavating shallow trenches beneath the building to install sub slab utilities) was completed in the fall of 2014. Details of field monitoring and sampling activities that were conducted by Iris Environmental (Iris) during tenant improvement activities were submitted to EPA in March 2015 (Iris, 2015).

1.2 Local Hydrogeology

The Site is located on a relatively flat tract of land that slopes gently to the north towards the San Francisco Bay. The San Francisco Bay is approximately two miles to the north, and the Santa Cruz Mountains are approximately six miles to the south.

Sediments beneath the Site are composed of varying proportions of unconsolidated to poorly consolidated gravel, sand, silt and clay typical of alluvial, estuarine, and bay deposits. The interbedded materials are generally lenticular, laterally gradational, and heterogeneous (Bechtel, 1996).

Water-bearing materials beneath the Site and the larger MEW Study Area are divided into an upper aquifer zone, comprised of the A and B aquifers and their associated aquitards, and a lower aquifer zone, comprised of the C and deeper aquifers and their associated aquitards (Geosyntec, 2014). The A aquifer at the Site is approximately 15 to 20 feet thick, extending from a depth of about 10 feet below ground surface (bgs) to a maximum depth of about 30 feet bgs. Based on geologic logs developed during the drilling of Site wells, the A aquifer is composed of silty sand, sand, and gravel, with interbedded layers of silty clay, silt, and gravelly silt.

1.3 Summary of Remedial Action

Remedial actions for soil and groundwater at the Site have reduced soil concentrations of TCE to below cleanup levels specified in the MEW Record of Decision (ROD)

(EPA, 1989; 1990b; 1996) and continue to control and reduce the concentrations of VOCs in groundwater. The investigation and remediation efforts at the Site have been documented in several reports (e.g., Bechtel, 1992 and Bechtel, 1996) and are periodically updated in progress reports to EPA, as required by the 106 Order (EPA, 2011a).

1.3.1 Soil

On 6 September 1991, NEC submitted a proposed final remedial design for treating VOCs in unsaturated soils located behind (east of) the Site building to EPA. Applicable treatment technologies for shallow unsaturated soils in the MEW Study Area are specified in the ROD and consist of soil removal and aeration or soil vapor extraction. NEC elected to excavate and send unsaturated soils with TCE concentrations greater than the cleanup level of 0.5 milligrams per kilogram (mg/kg) offsite for treatment and disposal. Soil excavations have been completed and NEC received EPA approval of the soil investigations and remediation at the Site in 1995 (EPA, 2004).

1.3.2 Groundwater

In October 1997, NEC began operating the Source Control Groundwater Remediation (SCGWR) system at the Site. The SCGWR system is a groundwater extraction and treatment system that was designed to control, contain, and extract VOCs at the Site and to complement the regional groundwater remediation program (RGRP) for the MEW Study Area. As originally designed, the SCGWR system extracted groundwater from the A aquifer at the Site and treated the groundwater using granular activated carbon prior to discharge to the storm drain. The SCGWR system has been continuously operational (i.e., shut down only for routine and non-routine maintenance) since start-up in October 1997.

On 3 September 2008, Geosyntec submitted an Optimization Evaluation for the SCGWR system on behalf of NEC (Geosyntec, 2008). The Optimization Evaluation recommended the following modifications to the SCGRW system:

- Adjust the groundwater extraction rates. Based on an evaluation of groundwater extraction rates for the SCGWR system, the following modifications to groundwater extraction were recommended to improve cost effectiveness while maintaining effective groundwater capture:
 - Discontinue groundwater extraction from NEC-1AE (**Figure 2**). The pump in NEC-1AE would remain in the well should extraction need to be resumed;

- Continue operation of NEC-27AE and NEC-28AE at approximate extraction rates of 2.0 gallons per minute (gpm) or higher. If a 2.0 gpm extraction rate could not be maintained at well NEC-28AE, then extraction from NEC-1AE at low rates could be resumed if necessary to maintain effective groundwater capture;
- Monitor the direction and magnitude of the regional groundwater gradient for changes that might affect groundwater capture at the Site; and
- Evaluate the possibility of direct discharge of extracted groundwater to the Palo Alto Regional Water Quality Control Plant (RWQCP).

During a 3 November 2008 meeting between EPA and Geosyntec, EPA concurred with these recommendations, provided that:

- 1) Contingencies were given for restart of NEC-1AE if groundwater capture became inadequate; and
- 2) A monitoring program for evaluating groundwater capture was implemented.

A plan for implementing the Optimization Evaluation recommendations and addressing EPA comments was provided in the 2008 Annual Progress Report (Geosyntec, 2009). The Optimization Evaluation recommendations were implemented in 2009 and the SCGWR system has operated in the optimized configuration since that time. Operation of the optimized SCGWR system includes direct discharge of extracted groundwater to the Palo Alto RWQCP and is conducted under the requirements of a City of Mountain View Wastewater Discharge Permit, Permit ID Number 925.

1.3.3 Vapor Intrusion Pathway

In 2012, Renesas conducted an investigation to evaluate the potential for vapor intrusion at the 501 Ellis Street building, including indoor air, outdoor air, and sub slab vapor sampling (Geosyntec, 2012). The sampling results indicated that concentrations of VOCs in indoor air were below indoor air cleanup levels specified in the MEW ROD Amendment for the Vapor Intrusion Pathway (EPA, 2010) but greater than outdoor air concentrations. Based on these findings, a preliminary recommendation was made that the building at 501 Ellis Street be categorized as Tier 3A, which would require long-term indoor air monitoring and institutional controls.

Since completion of the of the 2012 vapor intrusion investigation, tenant improvement construction work was completed inside the 501 Ellis Street building in 2014. The

construction work included temporarily opening the building slab, trenching for the installation of sub slab utilities, slab repair, and sealing of potential conduits that could act as preferential pathways for vapor intrusion. Indoor and outdoor air sampling was conducted by Iris prior to and following the tenant improvement construction activities. MEW chemicals of potential concern (COPCs) were not detected in the indoor air samples that were collected following construction with the exception of Freon 113, which was detected at comparable concentrations in outdoor air (Iris, 2015). No additional vapor intrusion work occurred in 2015.

The results from the samples collected by Iris indicate that a Tier 3B categorization, which is limited to implementation of institutional controls, is appropriate for the 501 Ellis Street building with completion of the tenant improvement activities. A final determination of the vapor intrusion response action tier for the Site will be made following EPA approval of the Revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering (Haley & Aldrich, 2013).

1.4 Summary of 2015 Activities

The following section summarizes field and reporting activities that were completed for the Site in 2015.

1.4.1 Field Activities

- 30 March, 23 June, 8 September, and 14 December. Locus Technologies conducted quarterly operation and maintenance (O&M) visits to the SCGWR system. As part of each O&M event, a sample was collected from the SCGWR system effluent as required by the City of Mountain View Wastewater Discharge Permit and from well NEC-1AE as specified in the revised SCGWR extraction and monitoring program included in the 2008 Annual Progress Report (Geosyntec, 2009);
- 19 March and 17 September. Semi-annual groundwater levels were measured in Site monitoring wells; and
- 23 and 24 October. Annual sampling of the Site groundwater monitoring wells.²

² In February 2015, the RGRP submitted a letter to EPA requesting a reduction in groundwater gauging and sampling frequency at the MEW Study Area (Geosyntec, 2015). In a letter dated 16 March 2016, EPA conditionally approved a trial reduction of groundwater monitoring and sampling frequency at the MEW study area (EPA, 2016). Although Renesas elected to sample the 501 Ellis Street monitoring wells

1.4.2 Order Reporting Activities

- On 9 January 2015, Renesas submitted to the City of Mountain View the semi-annual Periodic Report of Continued Compliance (PRCC) summarizing the results of SCGWR system self-monitoring analysis conducted during the second half of 2014;
- On 10 April 2015, Renesas submitted the 2014 Annual Progress Report to EPA;
- On 21 July 2015, Renesas submitted to the City of Mountain View the semi-annual PRCC summarizing the results of SCGWR system self-monitoring analysis conducted during the first half of 2015;
- On 25 November 2015, Renesas submitted the Work Plan for Trial Shutdown of the Source Control Groundwater Remediation System at 501 Ellis Street to EPA; and
- On 28 December 2015, Renesas submitted to the City of Mountain View the semi-annual PRCC summarizing the results of SCGWR system self-monitoring analysis conducted during the second half of 2015.

in 2015, future groundwater gauging and sampling frequency will be consistent with the recommendations included in the RGRP 2016 Annual Progress report.

2. GROUNDWATER REMEDY

The following sections present a summary of the operation and maintenance of the SCGWR system, results of a hydraulic control and capture zone analysis for the system, and results from the 2015 annual groundwater sampling at the Site.

2.1 SCGWR System Description

The SCGWR system is a groundwater extraction and treatment system that was designed to control, contain, and extract VOCs from the A aquifer at the Site and to complement the MEW Study Area RGRP. The SCGWR system has operated since start-up in October 1997. On 13 May 2009, the modifications to the SCGWR system recommended in the 2008 Optimization Evaluation (Section 1.3) were completed. These modifications included adjustments to groundwater extraction rates at the three extraction wells and converting the system from carbon treatment followed by discharge to Stevens Creek under a National Pollutant Discharge Elimination System permit to direct discharge of untreated groundwater to the sanitary sewer for treatment at the Palo Alto RWQCP under a City of Mountain View wastewater discharge permit.

2.2 SCGWR System Operations and Maintenance

Performance of the SCGWR system, including monthly average flow rates, extraction totals, and calculated VOC mass removal is summarized in **Table 1**. As of 31 December 2015, 41,506,330 gallons of water have been extracted since startup of the SCGWR system on 16 October 1997. The average daily processing rate has been 6,498 gallons per day (gpd), or 4.51 gpm. Since system optimization in 2009, the average daily processing rate has been 3.90 gpm.

Approximately 1.7 pounds of VOCs were removed by the SCGWR system in 2015.³ The total mass of VOCs removed by the treatment system from start-up through 31 December 2015 is approximately 50.7 pounds. **Figure 3** shows the cumulative groundwater extracted and mass of VOCs removed since system startup.

³ The estimated mass removal for the fourth quarter 2015 (1 October through 31 December 2015) is based on treatment system sampling that was conducted on 14 December 2015 and the fourth quarter 2015 SCGWR system O&M visit, which took place on 22 December 2015.

2.3 Hydraulic Control and Capture Zone Analysis

Site monitoring and extraction wells are completed within the A aquifer (**Table 2**). Depth to groundwater in the monitoring wells ranged from approximately 8 to 17 feet below top of casing (btoc) during the March monitoring event and approximately 10 to 21 feet btoc during the September 2015 monitoring event (**Table 3** and **Table 4**). A hydrograph of groundwater elevations in selected monitoring wells across the Site is shown in **Figure 4**.

2.3.1 Capture Zone Analysis Methodology

2.3.1.1 Javandel and Tsang Method

Capture of groundwater beneath the Site was estimated using two methods. The first method is the analytical solution of Javandel and Tsang (1987), which consists of calculating a stagnation point and capture zone width, followed by projection of streamlines perpendicular to groundwater contours. The 2015 capture zone calculations using this approach are provided in **Appendix B**.

2.3.1.2 Numerical Modeling Method and Model Development

The second method for estimating groundwater capture uses a steady-state numerical simulation of groundwater flow incorporating particle tracking. Numerical simulations were performed using Visual MODFLOW Professional, Version 2011.1®.

The SCGWR system is designed to provide complete containment of the A aquifer groundwater directly beneath the Site. The conceptual site model (CSM) used in the numerical model treats the interlayered heterogeneities of the A aquifer as a single unit extending from 10 to 30 feet bgs. The unit is assumed to have a uniform transmissivity of 91.3 square feet per day (ft²/day), estimated from pumping tests conducted on wells NEC-12A, NEC-22A, and NEC-25A during groundwater extraction system design (Bechtel, 1996; Geosyntec, 2001) and confirmed based on an analysis of the specific capacity of the extraction wells (Driscoll, 1986). The transmissivity was incorporated into the numerical model using an aquifer thickness of 20 feet, resulting in a hydraulic conductivity of 4.6 feet per day (ft/day). This value is consistent with the average hydraulic conductivity of 2.3 ft/day estimated from slug tests conducted in the vicinity of the Site (Bechtel, 1989). The value is also within the range of reported regional A aquifer hydraulic conductivities across the MEW Study Area (0.35 ft/day to 2,050 ft/day), although it should be noted that based on the regional data the A aquifer is highly heterogeneous and flow through the aquifer can vary considerably.

For the purpose of the Site numerical model, a uniform horizontal gradient with a direction of N28°W and a magnitude of 0.008 feet per foot (ft/ft) is assumed for the A aquifer groundwater beneath the Site. The horizontal gradient was estimated based on offsite groundwater elevations and regional potentiometric surface maps developed for the MEW Study Area (Weiss, 2004), and is consistent with historical estimates (Bechtel, 1989; 1996). However, the observed groundwater gradient direction beneath the Site does not appear to be uniform based on groundwater elevations in Site monitoring wells. Due to the position of the Site within and relative to the MEW Study Area and the presence of active groundwater extraction systems onsite and to the west of the Site, the gradient appears to shift locally to the west in the downgradient (northern and northwestern) portions of the Site.

For the purpose of the Site numerical model, it is also assumed that there is no contribution of groundwater from the underlying B1 aquifer into the A aquifer. This assumption is consistent with observations from B1 aquifer wells that showed no response when monitored during onsite pumping tests conducted in the A aquifer (Bechtel, 1996).

The model domain is 2,500 feet wide by 2,500 feet long, with 20 feet by 20 feet grid blocks. The numerical simulation has one vertical layer with a 30 foot thickness. The upper 10 feet of the vertical layer is unsaturated. The upper and lower boundaries of the vertical layer are sloped in a direction consistent with the groundwater gradient to maintain a uniform aquifer thickness. While there are a large number of groundwater extraction wells currently operating within the MEW Study Area, only the extraction rates and elevation data within the immediate vicinity of the Site are used to evaluate groundwater capture.

2.3.1.3 Other Analysis Methods

Other techniques commonly used to evaluate the performance of groundwater extraction systems, such as tracer tests and contaminant concentration trends in up- and downgradient monitoring wells, are not applicable at the Site due to its position relative to the MEW regional plume and contributions of similar contaminants to groundwater from upgradient offsite sources.

2.3.2 Estimated Capture Zones for 2015

Based on the A aquifer thickness of 20 feet and a bulk hydraulic conductivity of 4.6 ft/day described above, the coupled analytical solution using the Javandel and Tsang method and potentiometric surface evaluation shows capture of the A aquifer

groundwater beneath the majority of the Site in March and September 2015 (**Figure 5** and **Figure 6**). Capture may be potentially incomplete in the northeastern portion of the Site near well NEC-12A. However, concentrations of TCE in that portion of the Site are below the California Maximum Contaminant Level (MCL) and MEW ROD cleanup objective of 5 micrograms per liter ($\mu\text{g/L}$) (See Section 2.4).

Particle path lines indicating simulated groundwater capture in the A aquifer beneath the Site based on groundwater extraction rates averaged over each quarter of 2015 are shown in **Figure 7** through **Figure 10**. The groundwater capture zones predicted by the numerical solution are in generally good agreement with the groundwater capture zones developed based on observed water levels in Site monitoring wells and the Javandel and Tsang method (**Figure 5** and **Figure 6**). For the A aquifer thickness and bulk hydraulic conductivity estimated as part of the CSM, the numerically simulated capture zones demonstrate nearly complete capture of the A aquifer groundwater beneath the Site. The only identified area of potentially incomplete capture is the northeastern corner of the Site (near NEC-12A), where TCE concentrations are less than the California MCL of 5 $\mu\text{g/L}$.

2.3.3 Horizontal and Vertical Gradients

Groundwater elevation contour maps for March and September 2015 (**Figure 5** and **Figure 6**) indicate that groundwater flow at the Site is generally to the north-northwest, in the direction of the operating groundwater extraction wells NEC-27AE and NEC-28AE. The groundwater elevation contours steepen around these wells, indicating the pumping cones of depression.

The current Site monitoring network is limited to A aquifer monitoring wells. Depth to groundwater measurements are only collected for the A aquifer at the Site and vertical gradients between deeper groundwater zones are not evaluated.

2.4 Analytical Results

Table 5 summarizes the analytical data for groundwater samples collected in October 2015 from the Site monitoring and extraction wells. TCE isoconcentration contours for the October 2015 sampling event are shown in **Figure 11**. Time-series concentration plots of TCE and its reductive dechlorination daughter products *cis*-1,2-dichloroethene (*cis*-1,2-DCE) and vinyl chloride for selected Site wells are provided in **Figure 12**. Laboratory analytical reports for the October 2015 sampling are included in **Appendix C** and historical groundwater analytical data is included on the CD provided with this report (Appendix C and historical data are provided to EPA only). The Quality

Assurance Report for data collected during 2015 is provided in **Appendix D** and quality control results are summarized in **Tables D-1, D-2, and D-3**.

2.4.1 Analytical Results Summary

Seven chlorinated VOCs were detected in one or more Site monitoring wells in 2015. TCE was detected in all of the wells that are sampled at the Site, with the exception of well NEC-20A which did not contain VOCs above analytical method detection limits. The highest TCE concentration detected during the October 2015 sampling event was 95 µg/L in monitoring well NEC-PZ-1A, which is lower than the highest TCE concentration detected in 2014 (100 µg/L at well NEC-8A).

The highest TCE concentrations at the Site have historically been detected in groundwater samples collected from monitoring well NEC-1A (**Figure 12**). Prior to November 2000, the TCE concentrations in NEC-1A varied cyclically, with higher concentrations (above 1,000 µg/L) detected in November and lower concentrations (below 1,000 µg/L) detected in May. Since May 2000, TCE concentrations in NEC-1A have been below 500 µg/L, and concentrations have been at or below 100 µg/L since December 2009. During the October 2015 sampling event, the concentration of TCE in monitoring well NEC-1A was 78 µg/L.

As part of the optimized SCGWR extraction and monitoring program, quarterly groundwater sampling of NEC-1AE began after extraction from the well ceased. Results of the 2015 quarterly groundwater samples are summarized in **Table 6**. Once pumping ceased in NEC-1AE in May 2009, concentrations of TCE immediately decreased from 150 µg/L to 57 µg/L (**Figure 13**). Since May 2009 concentrations have generally ranged between 40 and 70 µg/L, with the exception of a transient increase in concentration that was noted in December 2014 and March 2015. The TCE concentration of 36 µg/L observed in December 2015 represents the lowest concentration observed at well NEC-1AE to date. Concentrations of *cis*-1,2-DCE at NEC-1AE since shutdown have increased from approximately 20 µg/L to over 60 µg/L, with the highest concentration observed in September 2015. *cis*-1,2-DCE is a reductive dechlorination daughter product of TCE, and the observation that *cis*-1,2-DCE concentrations are stable or increasing relative to long-term TCE concentrations indicates that ongoing natural attenuation processes at the Site may be occurring with increased efficacy in the absence of groundwater extraction.

TCE and *cis*-1,2-DCE concentration trends at all Site monitoring wells were evaluated using Mann-Kendall trend analysis, a non-parametric trend test that uses only the relative magnitudes of the data rather than their measured values to evaluate trends.

Non-detect results are reported at the reporting limit. TCE and *cis*-1,2-DCE concentration trends at the 90% confidence level based on the previous 10 years of monitoring data are summarized in **Table E-1** of **Appendix E**. **Appendix E** also includes a summary worksheet of the Mann-Kendall analysis conducted for each individual well.

Of the 20 monitoring and extraction wells at the Site, 13 wells exhibit decreasing TCE concentration trends, two exhibit increasing TCE concentration trends, and five do not demonstrate a trend for TCE concentrations at a 90% confidence level (**Figure 14**). The wells showing increasing trends are NEC-PZ-1A and NEC-PZ-2A, which area located adjacent to the downgradient groundwater extraction wells NEC-27AE and NEC-28AE, within their estimated zones of capture. The statistical increase in TCE concentration at these wells may be related to capture of upgradient groundwater with higher TCE concentrations, rather than a change in groundwater conditions in the vicinity of the wells.

TCE did not exhibit a statistically significant trend at crossgradient well NEC-7A, which had an increasing concentration trend for TCE in 2014.

In addition to the decreasing TCE concentration trends, eight of the monitoring and extraction wells at the Site show increasing *cis*-1,2-DCE concentration trends, which may indicate that natural attenuation processes at the Site are resulting in the reductive dechlorination of TCE.

2.4.2 Data Quality Assurance Summary

Quality control results are summarized in **Tables D-1, D-2, and D-3** of **Appendix D**.

- Percent recoveries and relative percent differences (RPDs) for both laboratory control spikes and matrix spikes were within project goals.
- VOCs were not detected in field, laboratory, or trip blanks.
- During the 2015 annual monitoring event, a blind duplicate sample was collected at monitoring well NEC-23A. The average of the RPD values for analytes detected in the primary and duplicate samples was 1.8%, which is well below the project RPD goal of less than 35%.

3. OTHER 2015 ACTIVITIES

- On 27 January 2015, Renesas participated in an EPA requested MEW All Parties meeting to discuss the findings of the EPA's ongoing investigation of potential TCE sources along Evandale Avenue (west of the MEW Study Area) and the framework for a Focused Feasibility Study that the EPA intends to prepare for evaluating technologies that may more rapidly decrease VOC concentrations in groundwater at the MEW Study Area.
- On 25 June 2015, Renesas participated in a meeting with EPA to present a project update and discuss planned activities at the Site, including revision and resubmittal of the Work Plan for Trial Shutdown of the Source Control Groundwater Remediation System.
- On 2 December 2015, Renesas participated in an EPA requested MEW All Parties meeting to provide EPA and potential responsible party updates on present and planned future work at the MEW Study Area.

4. PROBLEMS ENCOUNTERED

No problems related to operation of the SCGWR system were encountered in 2015.

5. TECHNICAL ASSESSMENT – GROUNDWATER REMEDY

Is the remedy functioning as intended? Yes, the SCGWR system is effectively extracting and containing contaminated groundwater at the Site.

Are capture zones adequate? Converging lines of evidence indicate the capture zones at the Site are adequate for the A aquifer at the Site. Capture zones were estimated semi-annually (corresponding to the depth to groundwater monitoring events) using the Javandel and Tsang methodology (**Figure 5** and **Figure 6**) and quarterly using a Site-specific numerical simulation (**Figure 7** through **Figure 10**). The simulation results are in good agreement with the capture zone estimates based on depth to groundwater measurements and the capture zones show nearly complete capture of the A aquifer groundwater beneath the Site. The portions of the Site with potentially incomplete capture are limited to the northeastern portion of the Site, where TCE concentrations are below 5 µg/L.

Are vertical gradients appropriate? Not applicable to the Site.

Are VOC concentrations decreasing over time? Yes, concentrations are decreasing over time. In 2015, TCE was not present above 100 µg/L at the Site (**Figure 11**). As shown in **Figure 12**, TCE concentrations in monitoring well NEC-1A, which has historically had the highest TCE concentrations at the Site, have decreased from a maximum concentration of 2,400 µg/L in November 1991 to 78 µg/L during the October 2015 monitoring event. Mann-Kendall trend analysis of Site monitoring and extraction wells indicate decreasing TCE concentration trends at a majority of wells (**Figure 14, Appendix E**). The two wells exhibiting increasing concentration trends (NEC-PZ-1A and NEC-PZ-2A) are located near the downgradient extraction wells and may be influenced by capture of upgradient groundwater with higher TCE concentrations.

6. OPTIMIZATION PROGRESS

As described in Section 1.3, Renesas has implemented the groundwater remedy optimizations recommended in the Optimization Evaluation for 501 Ellis Street (Geosyntec, 2008).

On behalf of Renesas, Geosyntec submitted a revised Work Plan for Trial Shutdown of the Source Control Groundwater Remediation System (Work Plan) to EPA on 24 November 2015 (Geosyntec, 2015b).⁴ The objectives of the trial shutdown would be to assess plume stability in the absence of groundwater extraction and evaluate whether monitored natural attenuation (MNA) is a viable alternative remedy for the Site. However, while MNA may be a viable remedy for the Site, Renesas currently plans to continue implementation of the existing remedy, along with optimized monitoring consistent with the findings of the trial reduction in groundwater monitoring frequency that is being conducted by the RGRP, and does not plan to implement the Work Plan at this time.

⁴ A work plan for a trial shutdown of the SCGRW system was originally submitted to EPA in 2011. Additional information on the rationale for the 2011 submittal is presented in previous annual reports and is not repeated herein.

7. CONCLUSIONS AND RECOMMENDATIONS

The following section presents conclusions and recommendations for the groundwater and VI remedies.

7.1 Groundwater

During 2015, the SCGWR system removed a total of 1.67 pounds of VOCs. No problems related to system operation were noted in 2015.

Converging lines of evidence indicate the groundwater capture zones are adequate for the A aquifer at the Site. Capture zones coinciding with the semi-annual depth to groundwater measuring events were estimated using the Javandel and Tsang methodology. Capture zones were also estimated quarterly based on groundwater extraction rates using a site-specific numerical simulation. The numerical simulation results are in good agreement with the capture zone estimates based on depth to groundwater measurements and both methodologies show nearly complete capture of the A aquifer groundwater beneath the Site. The areas of the Site with potentially incomplete capture are limited to the northeastern corner of the Site, where TCE concentrations are below 5 µg/L.

Concentrations of TCE in the Site monitoring wells have decreased since the implementation of the SCGWR system. In monitoring well NEC-1A, which has historically had the highest TCE concentrations, the concentration has decreased from a maximum concentration of 2,400 µg/L in November 1991 to 78 µg/L in October 2015. Trend analyses indicate stable or decreasing TCE concentrations in all Site wells, except for two wells (NEC-PZ-1A and NEC-PZ-2A) that are located near the downgradient extraction wells.

The modifications to the SCGWR system recommended in the 2008 Optimization Evaluation and implemented in May 2009 have not adversely impacted the groundwater remedy performance. Concentration rebound has not been observed at extraction well NEC-1AE since it was shut down as part of the May 2009 optimization activities. TCE concentrations at NEC-1AE decreased from 150 µg/L before the optimization to 57 µg/L immediately following shutdown and have generally remained low (**Table 6, Figure 13**). Since 2009, *cis*-1,2-DCE concentrations at NEC-1AE have also increased from approximately 20 µg/L to over 60 µg/L, indicating that ongoing natural attenuation processes at the Site may occur with increased efficiency in the absence of groundwater extraction.

7.2 Vapor Intrusion

Results from indoor air sampling conducted in 2012 with the building HVAC system off indicated that concentrations of VOCs in indoor air were below site-specific cleanup levels specified in the MEW ROD Amendment for the Vapor Intrusion Pathway (EPA, 2010). Based on the indoor air sampling results, a preliminary recommendation was made for categorizing the building at 501 Ellis Street as Tier 3A (i.e., a building with indoor air concentrations below indoor air cleanup levels, but greater than outdoor concentrations). Since completion of the 2012 vapor intrusion investigation, tenant improvement construction work was completed inside the 501 Ellis Street building in 2014. The construction work included temporarily opening the building slab, trenching for the installation of sub slab utilities, slab repair, and sealing of potential conduits that could act as preferential pathways for vapor intrusion. Indoor and outdoor air sampling was conducted by Iris prior to and following the tenant improvement construction activities. MEW COPCs were not detected in indoor air samples collected following construction with the exception of Freon 113, which was detected at comparable concentrations in outdoor air (Iris, 2015). These results indicate that a Tier 3B categorization, which is limited to implementation of institutional controls, is appropriate for the 501 Ellis Street building with the completion of tenant improvement activities.

Additional indoor air sampling is recommended to determine the final response action tiering for the 501 Ellis Street building. Additional indoor air sampling, a final determination of the vapor intrusion response action tier for the Site, and implementation of response actions based on the final placement of the Site into a tier will be completed following EPA approval of the Revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering (Haley & Aldrich, 2013). No additional vapor intrusion work occurred in 2015.

8. FOLLOW-UP ACTIONS

8.1 Groundwater Remedy

On behalf of Renesas, Geosyntec submitted a revised Work Plan for Trial Shutdown of the Source Control Groundwater Remediation System (Work Plan) to EPA on 24 November 2015 (Geosyntec, 2015b). As discussed in Section 6, Renesas currently plans to continue implementation of the existing remedy, along with optimized monitoring consistent with the findings of the trial reduction in groundwater monitoring frequency that is being conducted by the RGRP, and does not plan to implement the Work Plan at this time.

8.2 Vapor Intrusion Remedy

On 16 August 2010, EPA issued its ROD Amendment for the Vapor Intrusion Pathway for the MEW Study Area 9 (EPA, 2010). EPA issued a Statement of Work (SOW) for the Remedial Design and Remedial Action to Address the Vapor Intrusion Pathway at MEW in September 2011. The SOW was included as an attachment to Amendment 91-4A to Unilateral Administrative Order 91-4 (106 Order), which requires implementation of additional response actions required by the vapor intrusion (VI) remedy at MEW (EPA, 2011a). In an email dated 23 September 2011, Renesas notified EPA of its intent to comply with Amendment 91-4A.

On 29 September 2011, Haley & Aldrich submitted a Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering (Tiering Work Plan) (Haley & Aldrich, 2011). On 22 January 2013, EPA issued its comments on the Tiering Work Plan (EPA, 2013). On 22 March 2013, Haley & Aldrich submitted a revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering (Revised Tiering Work Plan) (Haley & Aldrich, 2013). EPA has not responded to the Revised Tiering Work Plan.

No vapor intrusion work occurred at the Site in 2015. Following approval of the Revised Tiering Work Plan, Renesas will implement the vapor intrusion remedy for the Site.

9. UPCOMING WORK IN 2016 AND PLANNED FUTURE ACTIVITIES

Planned activities for 2016 related to the routine treatment system O&M and groundwater monitoring are as follows:

January	<ul style="list-style-type: none"> • Routine SCGWR O&M
February	<ul style="list-style-type: none"> • Routine SCGWR O&M
March ⁵	<ul style="list-style-type: none"> • Routine SCGWR O&M • Quarterly SCGWR system effluent sampling • Quarterly sampling of NEC-1AE
April	<ul style="list-style-type: none"> • Routine SCGWR O&M • Submit Annual Progress Report to USEPA
May	<ul style="list-style-type: none"> • Routine SCGWR O&M
June	<ul style="list-style-type: none"> • Routine SCGWR O&M • Quarterly SCGWR system effluent sampling • Quarterly sampling of NEC-1AE
July	<ul style="list-style-type: none"> • Routine SCGWR O&M
August	<ul style="list-style-type: none"> • Routine SCGWR O&M
September	<ul style="list-style-type: none"> • Routine SCGWR O&M • Quarterly SCGWR system effluent sampling • Quarterly sampling of NEC-1AE • Semi-annual groundwater level measurements
October	<ul style="list-style-type: none"> • Routine SCGWR O&M • Annual groundwater sampling
November	<ul style="list-style-type: none"> • Routine SCGWR O&M
December	<ul style="list-style-type: none"> • Routine SCGWR O&M • Quarterly SCGWR system effluent sampling • Quarterly sampling of NEC-1AE

⁵ Consistent with EPA's conditional approval of a trial reduction in monitoring frequency at the MEW Study Area, semi-annual groundwater level measurements will not be collected in March 2016.

10. REFERENCES

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TABLES

Table 1
SCGWR System Performance Summary
501 Ellis Street, Mountain View, California

Discharge Period	Primary Adsorber Replaced	Discharge (days)	Total Discharge (gallons)	Average Rate (gpd)	Influent VOCs (µg/L)	Effluent VOCs (µg/L)	VOCs Removed (lbs)
Startup Oct 16, 1997		0	0	NA	NA	NA	0.00
Oct 16- Nov 13, 1997		27	109,340	4,050	152	0	0.14
Nov 14- Dec 17, 1997		34	153,010	4,500	202	0	0.26
Dec 18, 1997-Jan 15, 1998		29	152,110	5,245	134	0	0.17
Jan 16-Feb 19, 1998		35	194,870	5,568	138.1	0	0.22
Feb 20-Mar 19, 1998		28	149,510	5,340	144	1.4	0.18
Mar 20-Apr 22, 1998	3/23/1998	34	157,430	4,630	137.4	0	0.18
Apr 23-May 28, 1998		36	104,370	2,899	69.9	0	0.06
May 29-June 23, 1998		25	95,110	3,804	110	15.28	0.08
June 24-July 22, 1998	7/14/1998	29	145,370	5,013	83	0	0.10
July 23-Aug 20, 1998		29	118,290	4,107	60.8	0	0.06
Aug 21-Sep 23, 1998		34	129,190	3,791	196.6	1.1	0.21
Sep 24-Oct 28, 1998	10/8/1998	35	277,800	7,919	125.3	0	0.29
Oct 29-Nov 30, 1998		32	283,740	8,890	110	0	0.26
Dec 1-Dec 15, 1998	12/21/1998	15	120,120	7,959	146.2	0	0.15
Dec 16, 1998 - Jan 27, 1999	1/8/1999	42	326,540	7,777	168.7	0	0.46
Jan 28 - Feb 24, 1999		27	233,490	8,721	167.9	0	0.33
Feb 25 - Mar 24, 1999	3/5/1999	27	242,060	8,956	195	0	0.39
Mar 25 - Apr 28, 1999	4/12/1999	35	289,730	8,253	159.4	0	0.39
Apr 21 - May 26, 1999		30	237,970	7,953	202.1	0	0.40
May 27 - June 23, 1999	6/8/1999	26	235,210	9,040	182.4	0	0.36
June 23 - July 28, 1999		35	292,100	8,325	178.4	2.8	0.43
July 29 - Aug 25, 1999	8/9/1999	28	228,510	8,209	184	3.3	0.34
Aug 26 - Sep 22, 1999	9/16/1999	28	160,730	5,730	57.9	0	0.08
Sep 23 - Oct 27, 1999		36	224,710	6,242	184	3.7	0.34
Oct 28 - Nov 23, 1999	11/12/1999	26	210,000	8,024	180.4	0	0.32
Nov 24 - Dec 22, 1999		29	222,120	7,696	231.9	2.2	0.43
Dec 23, 1999 - Jan 26, 2000	12/23/1999	35	275,070	7,872	201.3	1.2	0.46
Jan 27 - Feb 23, 2000	2/7/2000	28	212,950	7,608	208.6	8.8	0.35
Feb 24 - Mar 22, 2000	3/11/2000 and 3/20/2000	27	202,020	7,493	210	0	0.35
Mar 23 - Apr 26, 2000	4/17/2000	35	260,110	7,432	186.5	0	0.40
Apr 27 - May 31, 2000	5/26/2000	35	252,920	7,226	201.5	0	0.43
June 1 - June 28, 2000	6/26/2000	28	190,590	6,807	170.1	0	0.27
June 29 - July 26, 2000		28	187,760	6,706	212.8	0	0.33
July 27 - Aug 23, 2000	9/21/2000	28	183,790	6,564	204.7	0	0.31
Aug 24 - Sep 27, 2000		35	229,820	6,566	194.9	0	0.37
Sep 28 - Oct 26, 2000	10/6/2000	29	175,300	6,325	138.5	0	0.20
Oct 27 - Nov 22, 2000	11/17/2000	27	169,590	6,014	213.0	202.7	0.01
Nov 23 - Dec 20, 2000		28	141,930	5,046	159.7	0	0.19
Dec 21, 2000 - Jan 24, 2001	1/19/2001	35	207,970	6,498	213.4	0	0.37
Jan 25 - Feb 28, 2001	2/19/2001	35	215,600	6,151	178.3	0	0.32
Mar 1 - Mar 28, 2001		28	176,650	6,314	159.4	0	0.23
Mar 29 - Apr 25, 2001	4/10/2001	28	155,570	5,504	181.5	0	0.24
Apr 26 - May 30, 2001	5/30/2001	35	192,810	5,382	164.4	0	0.26
May 31 - June 27, 2001		28	136,610	5,013	202	0	0.23
June 28 - July 25, 2001	7/2/2001 and 7/16/2001	28	173,810	6,439	226.9	0	0.33
July 26 - Aug 22, 2001	8/14/2001	28	187,720	6,697	237.4	0	0.37
Aug 23 - Sep 26, 2001	9/19/2001	35	232,980	6,668	217.4	0	0.42
Sep 27, 2001 - Oct 24, 2001		28	186,960	6,672	225.4	0	0.35
Oct 25, 2001 - Nov 28, 2001	10/29/2001	35	214,470	6,125	223.8	0	0.40
Nov 29, 2001 - Dec 19, 2001	12/11/2001	21	117,130	5,580	176.6	0	0.17
Dec 20, 2001 - Jan 16, 2002		28	163,130	5,549	210.7	0	0.29
Jan 17, 2002 - Feb 25, 2002	2/19/2002	40	215,500	5,210	159.1	0	0.29
Feb 26, 2002 - Mar 20, 2002		23	136,160	4,643	238.4	0	0.27
Mar 21, 2002 - Apr 15, 2002		26	94,470	4,544	140.5	0	0.11
Apr 16, 2002 - May 22, 2002	4/24/2002	37	175,070	5,315	202.7	0	0.30
May 23, 2002 - June 19, 2002	6/4/2002	28	201,600	7,156	207.4	0	0.35
June 20, 2002 - July 10, 2002		21	255,090	9,769	202	0	0.43
July 11, 2002 - Aug 21, 2002	7/29/2002	42	193,600	6,518	141.8	0	0.23
Aug 22, 2002 - Sep 18, 2002		27	143,530	4,870	201.2	0	0.24
Sep 19, 2002 - Oct 17, 2002	10/1/2002	28	175,390	5,770	203.8	0	0.30
Oct 18, 2002 - Nov 20, 2002		33	250,780	6,920	201	0	0.42
Nov 21, 2002 - Dec 18, 2002	11/25/2002	27	184,290	7,009	137.2	0	0.21

Table 1
SCGWR System Performance Summary
501 Ellis Street, Mountain View, California

Discharge Period	Primary Adsorber Replaced	Discharge (days)	Total Discharge (gallons)	Average Rate (gpd)	Influent VOCs (µg/L)	Effluent VOCs (µg/L)	VOCs Removed (lbs)
Dec 19, 2002 - Jan 22, 2003		35	220,900	6,330	189.3	0	0.35
Jan 23, 2003 - Feb 19, 2003	2/10/2003	28	166,230	6,183	226.7	0	0.31
Feb 20, 2003 - Mar 19, 2003		28	179,360	6,090	166.3	0	0.25
Mar 20, 2003 - Apr 28, 2003	4/1/2003	39	207,300	5,504	146.7	0	0.25
Apr 29, 2003 - May 19, 2003	5/19/2003	21	131,770	6,315	172.7	0	0.19
May 20, 2003 - June 30, 2003		41	227,380	5,732	160	0	0.30
July 1, 2003 - Aug 5, 2003	7/8/2003	36	230,950	6,186	186	0	0.36
Aug 6, 2003 - Sep 3, 2003		28	160,410	5,960	143.4	0	0.19
Sep 4, 2003 - Sep 30, 2003	9/9/2003	26	166,270	6,162	195.7	0	0.27
Oct 1, 2003 - Nov 5, 2003		35	238,150	6,608	186	0	0.37
Nov 6, 2003 - Dec 5, 2003	11/18/2003	29	186,150	6,225	200.4	0	0.31
Dec 6, 2003 - Dec 31, 2003		25	164,280	6,315	201.4	0	0.28
Jan 1, 2004 - Jan 28, 2004	1/12/2004	27	168,040	6,235	199.1	0	0.28
Jan 29, 2004 - Feb 27, 2004		29	183,810	6,169	167.1	0	0.26
Feb 28, 2004 - Mar 29, 2004	3/8/2004	30	191,270	6,587	168.7	0	0.27
Mar. 30, 2004 - Apr. 22, 2004		23	149,410	6,546	173.8	0	0.22
Apr. 23, 2004 - May 19, 2004	4/19/2004	26	174,000	6,500	168.6	0	0.24
May 20, 2004 - June 21, 2004	6/1/2004	32	201,810	6,361	156.3	0	0.26
June 22, 2004 - July 21, 2004		30	171,870	5,729	144.8	0	0.21
July 22, 2004 - Aug 17, 2004	8/2/2004	27	145,690	5,396	167.5	0	0.20
Aug 18, 2004 - Sep 22, 2004	9/20/2004	36	162,960	4,527	173.3	0	0.24
Sep 23, 2004 - Oct 20, 2004		28	145,290	5,189	131.9	0	0.16
Oct 21, 2004 - Nov 15, 2004	11/3/2004	26	182,140	7,005	152.9	0	0.23
Nov 16, 2004 - Dec 22, 2004	12/13/2004	37	257,700	6,965	150.5	0	0.32
Dec 23, 2004 - Jan 19, 2005		28	205,800	7,350	144.9	0	0.25
Jan 20, 2005 - Feb 15, 2005	1/24/2005	27	185,870	6,884	147.9	0	0.23
Feb 16, 2005 - Mar 28, 2005	3/14/2005	41	283,820	6,922	149.1	0	0.35
Mar 29, 2005 - Apr 20, 2005	4/14/2005	23	153,380	6,669	150.6	0	0.19
Apr 21, 2005 - May 25, 2005	5/19/2005	35	255,110	7,289	144.2	0	0.31
May 26, 2005 - June 27, 2005		33	239,120	7,246	149.1	0	0.30
June 28, 2005 - July 25, 2005		28	184,260	6,581	153.7	0	0.24
July 26, 2005 - Aug 15, 2005		21	152,620	7,268	139.2	0	0.18
Aug 16, 2005 - Oct 3, 2005	8/17/2005 9/15/2005	49	378,200	7,718	163.5	0	0.52
Oct 4, 2005 - Oct 24, 2005	10/18/2005	21	160,050	7,621	149.8	0	0.20
Oct 25, 2005 - Nov 21, 2005		28	208,170	7,435	162.7	0	0.28
Nov 22, 2005 - Dec 30, 2005		39	302,470	7,756	158.5	0	0.40
Dec 31, 2005 - Jan 30, 2006	1/5/2006	31	237,010	7,645	143.1	0	0.28
Jan 31, 2006 - Feb 27, 2006	2/6/2006	28	205,260	7,331	134.3	0	0.23
Feb 28, 2006 - Apr 3, 2006	3/13/2006	35	246,150	7,033	153.9	0	0.32
Apr 4, 2006 - Apr 24, 2006		21	150,040	7,145	145.6	0	0.18
Apr 25, 2006 - May 30, 2006		36	252,130	7,004	142.8	0	0.30
May 31, 2006 - June 30, 2006	6/5/2006	31	205,290	6,622	156	0	0.27
July 1, 2006 - Aug 7, 2006	7/12/2006	37	247,740	6,696	129.4	0	0.27
Aug 8, 2006 - Sep 5, 2006	8/31/2006	28	183,410	6,550	128.6	0	0.20
Sep 6, 2006 - Oct 2, 2006		26	182,180	7,007	158.6	0	0.24
Oct 3, 2006 - Nov 6, 2006		34	232,190	6,829	145.7	0	0.28
Nov 7, 2006 - Dec 4, 2006	11/9/2006	27	179,870	6,662	170.9	0	0.26
Dec 5, 2006 - Jan 2, 2007	12/14/2006	28	181,650	6,488	174.5	0	0.26
Jan 3, 2007 - Feb 1, 2007	2/1/2007	29	193,140	6,660	146	0	0.24
Feb 2, 2007 - Mar 5, 2007		31	200,650	6,473	135.2	0	0.23
Mar 6, 2007 - Apr 2, 2007		27	176,910	6,552	134.9	0	0.20
Apr 2, 2007 - May 7, 2007	4/24/2007	35	235,030	6,715	148	0	0.29
May 7, 2007 - June 4, 2007	5/23/2007	28	200,670	7,167	145.8	0	0.24
June 4, 2007 - June 29, 2007		25	180,590	7,224	134.5	0	0.20
June 29, 2007 - July 30, 2007	7/5/2007	32	230,300	7,197	127.6	0	0.25
July 30, 2007 - Sept 4, 2007		36	281,730	7,826	138	0	0.32
Sept 4, 2007 - Oct 1, 2007	9/13/2007	27	184,930	6,849	164.8	0	0.25
Oct 2, 2007 - Oct 29, 2007	10/9/2007	28	220,880	7,889	127.4	0	0.23
Oct 30, 2007 - Nov 26, 2007	11/19/2007	28	221,870	7,924	115.5	0	0.21
Nov 27, 2007 - Dec 31, 2007		35	282,300	8,066	145.8	0	0.34

Table 1
SCGWR System Performance Summary
501 Ellis Street, Mountain View, California

Discharge Period	Primary Adsorber Replaced	Discharge (days)	Total Discharge (gallons)	Average Rate (gpd)	Influent VOCs (µg/L)	Effluent VOCs (µg/L)	VOCs Removed (lbs)
Jan 1, 2008 - Jan 28, 2008	1/22/2008	28	204,940	7,319	156.9	0	0.27
Jan 29, 2008 - Feb 25, 2008	2/19/2008	28	214,970	7,678	141.8	0	0.25
Feb 26, 2008 - Mar 31, 2008		35	270,880	7,739	137.3	0	0.31
Apr 1, 2008 - Apr 28, 2008	4/3/2008	27	215,770	7,991	144.9	0	0.26
Apr 29, 2008 - May 27, 2008		28	233,230	8,330	148.9	0	0.29
May 28, 2008 - June 30, 2008	6/9/2008	33	215,260	6,523	135.8	0	0.24
July 1, 2008 - July 28, 2008		27	213,290	7,900	145.5	0	0.26
July 29, 2008 - Sep 2, 2008		35	271,770	7,765	157.2	0	0.36
Sep 3, 2008 - Sep 29, 2008		26	206,440	7,940	147.5	0	0.25
Sep 30, 2008 - Nov 3, 2008	10/9/2008	34	255,440	7,513	145.6	0	0.31
Nov 4, 2008 - Dec 1, 2008	11/17/2008	27	201,980	7,481	160.9	0	0.27
Dec 2, 2008 - Dec 29, 2008		27	199,220	7,379	146.5	0	0.24
Dec 30, 2008 - Feb 2, 2009	1/5/2009	35	262,400	7,497	144.5	0	0.32
Feb 3, 2009 - March 2, 2009	2/17/2009	28	208,760	7,456	132	0	0.23
March 3, 2009 - April 6, 2009		35	261,780	7,479	123.5	0	0.27
Apr 7, 2009 - May 4, 2009	4/8/2009	28	202,690	7,239	133.5	0	0.23
May 5, 2009 - Jun 1, 2009		28	172,870	6,174	133.4	0	0.19
Jun 2, 2009 - Jun 29, 2009		28	150,880	5,389	--*	98.6*	0.12
Jun 30, 2009 - Oct 5, 2009		98	538,960	5,500	--	114.2	0.51
Oct 6, 2009 - Dec 31, 2009		87	483,970	5,563	--	119.6	0.48
Jan 1, 2010 - March 17, 2010		76	412,870	5,433	--	119.0	0.41
March 18, 2010 - June 30, 2010		105	577,330	5,498	--	110.6	0.53
July 1, 2010 - Sep 14, 2010		76	412,240	5,424	--	129.3	0.44
Sep 14, 2010 - Dec 30, 2010		108	537,210	4,974	--	126.3	0.57
Dec 31, 2010 - Mar 14, 2011		73	367,480	5,034	--	124.3	0.38
Mar 15, 2011 - Jun 13, 2011		91	493,950	5,428	--	119.7	0.49
Jun 14, 2011 - Sep 12, 2011		91	531,530	5,841	--	106.7	0.47
Sep 13, 2011 - Dec 12, 2011		91	521,590	5,732	--	117.5	0.51
Dec 13, 2011 - Mar 14, 2012		92	515,530	5,604	--	104.7	0.45
Mar 15, 2012 - Jun 18, 2012		95	515,360	5,425	--	111.1	0.48
Jun 19, 2012 - Sep 10, 2012		83	466,110	5,616	--	123.2	0.48
Sep 11, 2012 - Dec 17, 2012		97	564,160	5,816	--	128.8	0.61
Dec 17, 2012 - Mar 13, 2013		86	493,330	5,736	--	130.8	0.54
Mar 13, 2013 - Jun 17, 2013		96	570,110	5,939	--	106.5	0.51
Jun 17, 2013 - Sep 27, 2013		102	639,190	6,267	--	108.4	0.58
Sep 27, 2013 - Dec 31, 2013		95	626,700	6,597	--	114.0	0.60
Jan 1, 2014 - Mar 26, 2014		85	555,620	6,537	--	111.5	0.52
Mar 27, 2014 - Jun 23, 2014		89	566,410	6,364	--	103.9	0.49
Jun 24, 2014 - Sep 30, 2014		99	616,450	6,227	--	104.0	0.53
Oct 1, 2014 - Dec 31, 2014		92	530,290	5,764	--	96.5	0.43
Jan 1, 2015 - Mar 30, 2015		89	453,480	5,095	--	103.2	0.39
Mar 31, 2015 - Jun 29, 2015		91	468,620	5,150	--	98.0	0.38
Jun 30, 2015 - Sep 30, 2015		93	457,910	4,924	--	131.0	0.50
Oct 1, 2015 - Dec 31, 2015		92	431,260	4,688	--	111.4	0.40
TOTALS		6,605	41,506,330	6,498	--	--	50.67

Notes:

*Beginning 13 May 2009, extracted groundwater is discharged without pre-treatment to the sanitary sewer under City of Mountain View Wastewater Discharge Permit Number 925. At this time, collection of influent samples was discontinued. Quarterly effluent samples are collected as required by the City of Mountain View Wastewater Discharge Permit. VOC recovery is estimated quarterly based on effluent concentration and total discharge.

Table 2
Summary of Extraction Well and Monitoring Well
Construction Details
501 Ellis Street, Mountain View, California

Well ID	Date Installed	Reference Elevation ¹ (top of PVC) (feet)	Well Diameter ² (inches)	Screen Slot Size ² (inches)	Depth of Screened Interval (feet)	Aquifer Zone
<i>Extraction Wells</i>						
NEC27AE	May-97	43.73	6	0.02	12.7-27.7	A
NEC1AE ³	May-97	43.90	6	0.02	12.8-27.8	A
NEC28AE	Apr-02	42.27	6	0.02	9-29	A
<i>Monitoring Wells</i>						
NEC-1A	Sep-82	44.47	2	0.01	5-25	A
NEC-3A	Oct-85	43.76	4	0.02	24.95-28.72	A
NEC-7A	Oct-83	43.80	2	0.02	6-26.5	A
NEC-8A	Oct-83	42.29	2	0.02	5-25	A
NEC-9A	Oct-83	43.14	2	0.02	5-30	A
NEC-10A	Aug-84	39.43	2	0.02	10-30	A
NEC-11A	Aug-84	45.97	2	0.02	10-30	A
NEC-12A	Oct-85	44.24	4	0.02	18.90-28.32	A
NEC-20A	Jan-89	46.62	4	0.02	26-28	A
NEC-21A	Dec-88	44.06	4	0.02	26-28	A
NEC-22A	May-89	43.17	4	0.02	25-27	A
NEC-23A	May-89	43.77	4	0.02	26-28	A
NEC-24A	Dec-91	44.50	4	0.02	15.8-25.8	A
NEC-25A	Mar-96	42.30	4	0.02	17.19-27.19	A
NEC-26A	Mar-96	43.65	4	0.02	28.24-33.24	A
NEC-PZ-1A	Apr-99	42.47	2	0.02	11-16	A
NEC-PZ-2A	Apr-99	43.02	2	0.02	9-14	A
NEC-PZ-3A	Apr-99	43.16	2	0.02	8-13	A

Notes:

¹ Reference elevations updated in March 2015 with most recent GPS survey data from Locus.

² Well diameters and screen slot sizes for wells constructed in the 1980's obtained from the table "Summary of NEC Monitoring Well Construction".

³ Ceased groundwater extraction from well NEC1AE on 13 May 2009. Extraction will be resumed if sufficient capture with the remaining two extraction wells cannot be maintained.

Table 3
Groundwater Levels - March 2015
501 Ellis Street, Mountain View, California

Well ID	Reference Elevation¹ (top of PVC) (feet)	Depth to Water (top of PVC) (feet)	Groundwater Elevation (feet)	Aquifer
NEC1A	44.47	9.81	34.66	A
NEC1AE	43.90	9.97	33.93	A
NEC3A	43.76	9.03	34.73	A
NEC7A	43.80	11.32	32.48	A
NEC8A	42.29	10.74	31.55	A
NEC9A	43.14	9.26	33.88	A
NEC10A	39.43	8.17	31.26	A
NEC11A	45.97	10.92	35.05	A
NEC12A	44.24	10.37	33.87	A
NEC20A	46.62	10.34	36.28	A
NEC21A	44.06	9.50	34.56	A
NEC22A ²	43.17	NA	NA	A
NEC23A	43.77	10.39	33.38	A
NEC24A	44.50	11.01	33.49	A
NEC25A ²	42.30	NA	NA	A
NEC26A	43.65	9.83	33.82	A
NEC27AE	43.73	17.47	26.26	A
NEC28AE	42.27	12.62	29.65	A
NEC-PZ-1A	42.47	10.84	31.63	A
NEC-PZ-2A	43.02	11.04	31.98	A
NEC-PZ-3A	43.16	10.41	32.75	A
29A ³	46.08	12.68	33.40	A
32A ³	45.06	12.45	32.61	A
119A ³	45.95	13.09	32.86	A
153A ³	45.72	12.34	33.38	A
158A ³	48.09	12.07	36.02	A

Notes:

¹ Reference elevations updated in March 2015 with most recent GPS survey data from Locus.

² No access to well due to tenant improvement construction activities.

³ Regional Groundwater Remediation Program (RGRP) monitoring wells.

NA - Not accessible

Table 4
Groundwater Levels - September 2015
501 Ellis Street, Mountain View, California

Well ID	Reference Elevation¹ (top of PVC) (feet)	Depth to Water (top of PVC) (feet)	Groundwater Elevation (feet)	Aquifer
NEC1A	44.47	11.44	33.03	A
NEC1AE	43.90	11.70	32.20	A
NEC3A	43.76	9.93	33.83	A
NEC7A	43.80	12.92	30.88	A
NEC8A ²	42.29	NA	NA	A
NEC9A	43.14	10.28	32.86	A
NEC10A	39.43	9.85	29.58	A
NEC11A	45.97	12.85	33.12	A
NEC12A	44.24	12.72	31.52	A
NEC20A	46.62	12.22	34.40	A
NEC21A	44.06	11.42	32.64	A
NEC22A	43.17	11.95	31.22	A
NEC23A	43.77	12.27	31.50	A
NEC24A	44.50	12.50	32.00	A
NEC25A	42.30	11.50	30.80	A
NEC26A	43.65	11.42	32.23	A
NEC27AE	43.73	21.00	22.73	A
NEC28AE	42.27	15.56	26.71	A
NEC-PZ-1A	42.47	12.55	29.92	A
NEC-PZ-2A	43.02	12.89	30.13	A
NEC-PZ-3A	43.16	12.02	31.14	A
29A ³	46.08	14.13	31.95	A
32A ³	45.06	14.13	30.93	A
119A ³	45.95	15.04	30.91	A
153A ³	45.72	13.94	31.78	A
158A ³	48.09	13.43	34.66	A

Notes:

¹ Reference elevations updated in March 2015 with most recent GPS survey data from Locus.

² No access to well due to tenant improvement construction activities.

³ Regional Groundwater Remediation Program (RGRP) monitoring wells.

Table 5
Analytical Results - 2015 Annual Monitoring Event
501 Ellis Street, Mountain View, California

WELL ID	NEC1A	NEC7A	NEC8A	NEC9A	NEC10A	NEC11A	NEC12A	NEC20A	NEC21A	NEC22AE	NEC23A	NEC23A (dup)	NEC24A	NEC25A	NEC26A	NEC27AE	NEC28AE	NECPZ-1A	NECPZ-2A
DATE OF SAMPLE	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/24/15	10/24/15	10/23/15	10/23/15	10/23/15	10/24/15	10/23/15	10/23/15	10/23/15	10/24/15	10/24/15	10/23/15	10/23/15
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L						
Bromodichloromethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	0.6	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	1.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	37	13	4.6	40	9.7	4.5	18	< 0.5	4.5	37	38	38	48	5.4	71	8.3	32	11	10
trans-1,2-Dichloroethene	9.2	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.0	0.6	0.6	3.0	1.9	0.9	1.0	12	1.1	1.2
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Freon 113	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methylene Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	78	60	78	2.5	21	29	2.9	< 0.5	2.9	24	93	92	34	33	3.0	69	72	95	83
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dilution Factor (DF)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes:
µg/L = micrograms per liter
"<" indicates not detected above the reported detection limit
Samples analyzed by EPA Method 8260 (8010 Analyte list) by Curtis & Tompkins, Ltd. of Berkeley, California.

Table 6
Analytical Results - 2015 NEC1AE Quarterly Sampling
501 Ellis Street, Mountain View, California

WELL ID	NEC1AE	NEC1AE	NEC1AE	NEC1AE
DATE OF SAMPLE	03/30/15	06/23/15	09/08/15	12/14/15
UNITS	µg/L	µg/L	µg/L	µg/L
Bromodichloromethane	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	1.0	1.0	0.8	0.6
1,3-Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	0.9	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	60	59	64	33
trans-1,2-Dichloroethene	21	9.5	8.5	7.2
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5
Freon 113	< 2.0	< 2.0	< 2.0	< 2.0
Methylene Chloride	< 20	< 20	< 20	< 20
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	1.3	0.9	0.6	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	130	66	42	36
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 0.5	< 0.5	< 0.5	< 0.5

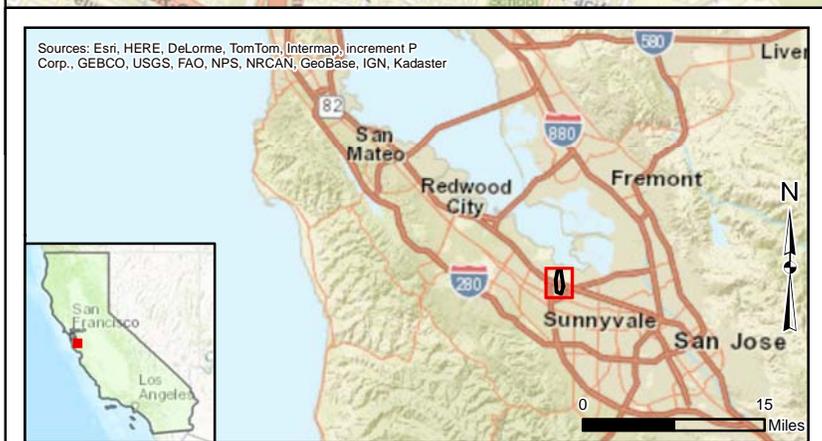
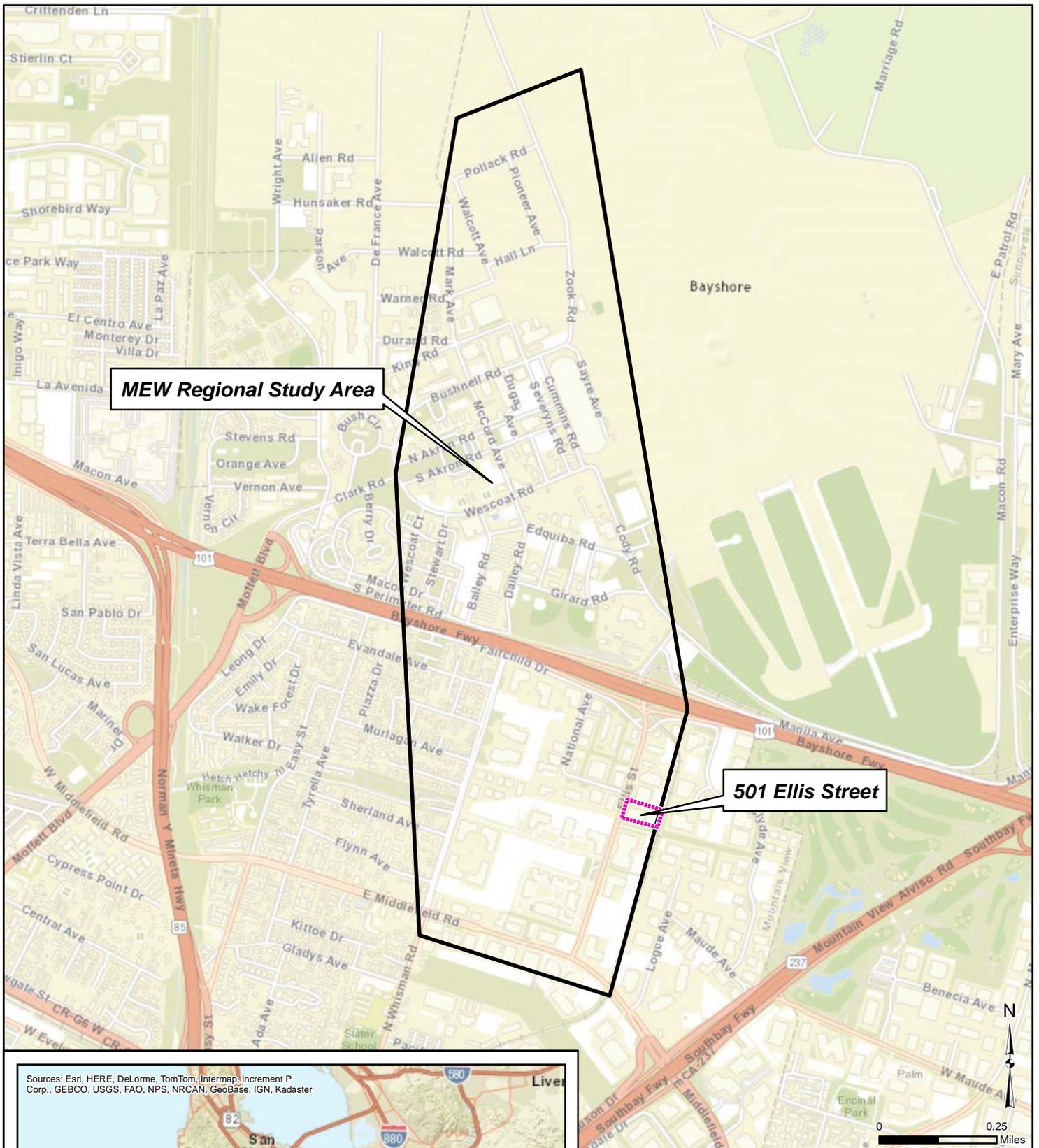
Notes:

µg/L = micrograms per liter

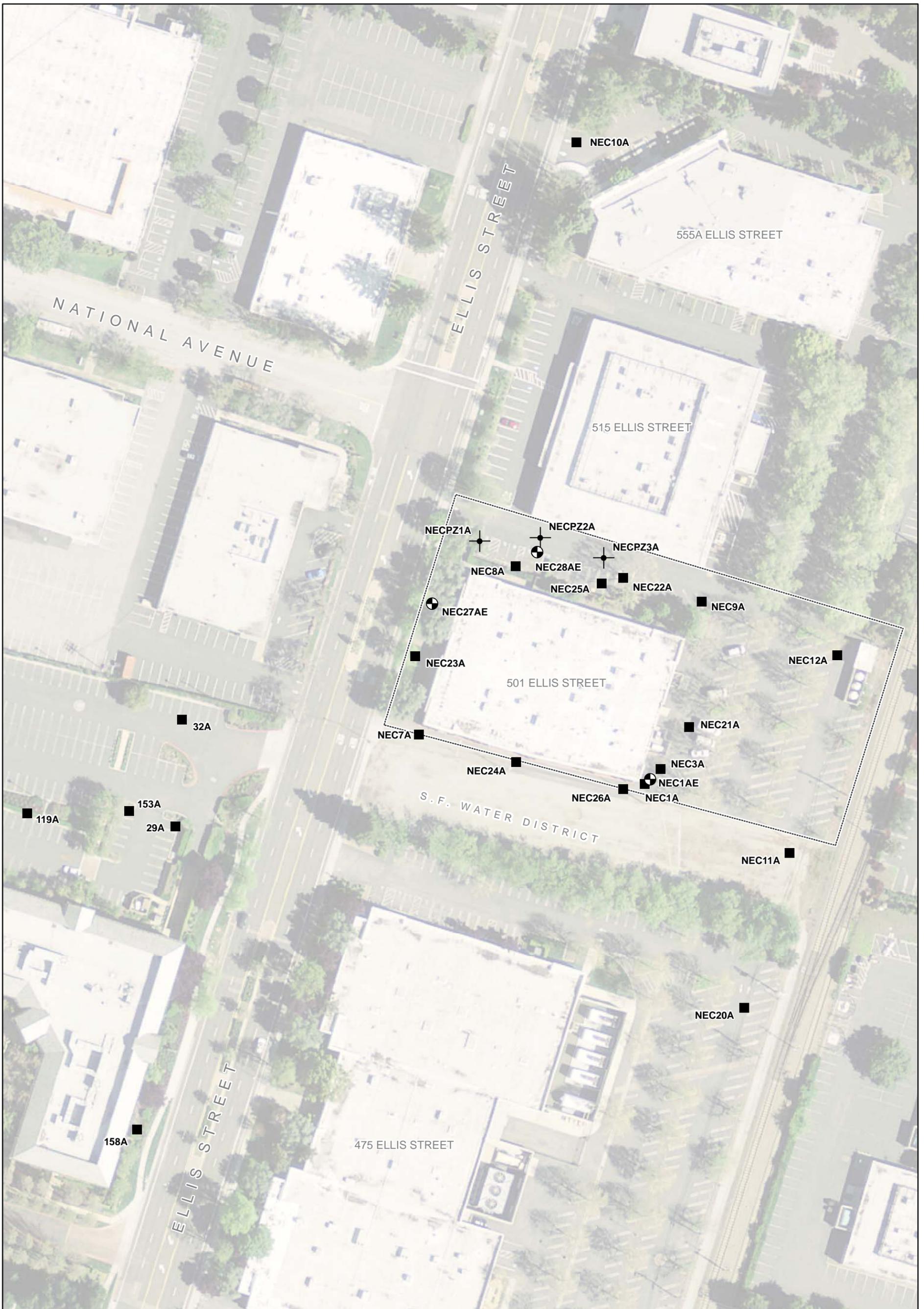
"<" indicates not detected above the reported detection limit

Samples analyzed by EPA Method 8260 (8010 Analyte list) by Curtis & Tompkins, Ltd. of Berkeley, California.

FIGURES

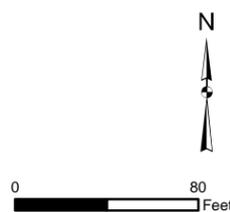


Site Location Map		Figure 1
501 Ellis Street Mountain View, California		
Geosyntec consultants		
WR2141	April 2016	



- Legend**
-  Extraction Well
 -  Monitoring Well
 -  Piezometer
 -  501 Ellis Street Boundary

Note:
 - Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.



Site Layout

501 Ellis Street
 Mountain View, California

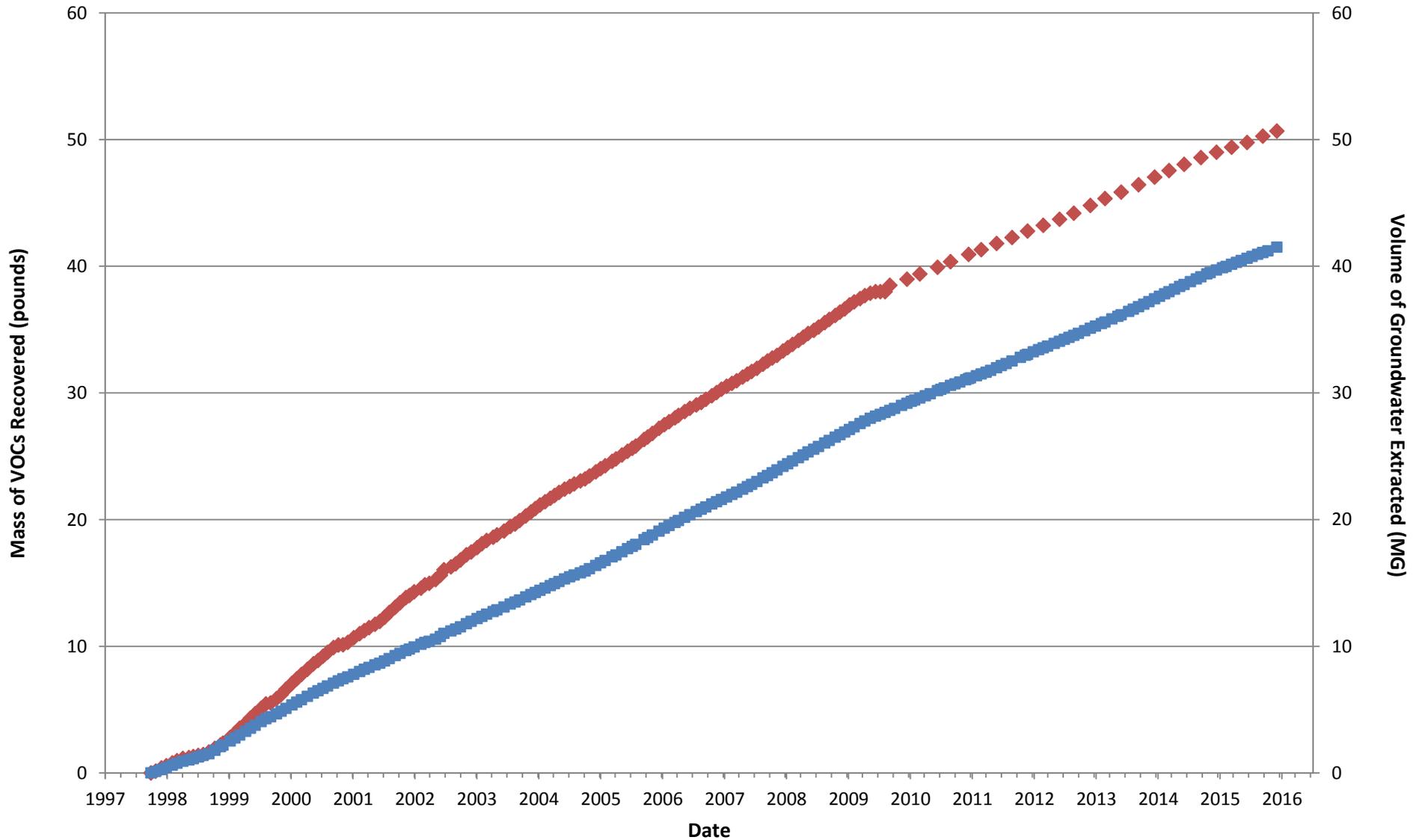
Geosyntec
 consultants

WR2141

April 2016

Figure

2



Legend
 ◆ VOC Mass Removed
 ■ Volume of Groundwater Extracted

VOC = Volatile Organic Compounds
 MG = Million Gallons

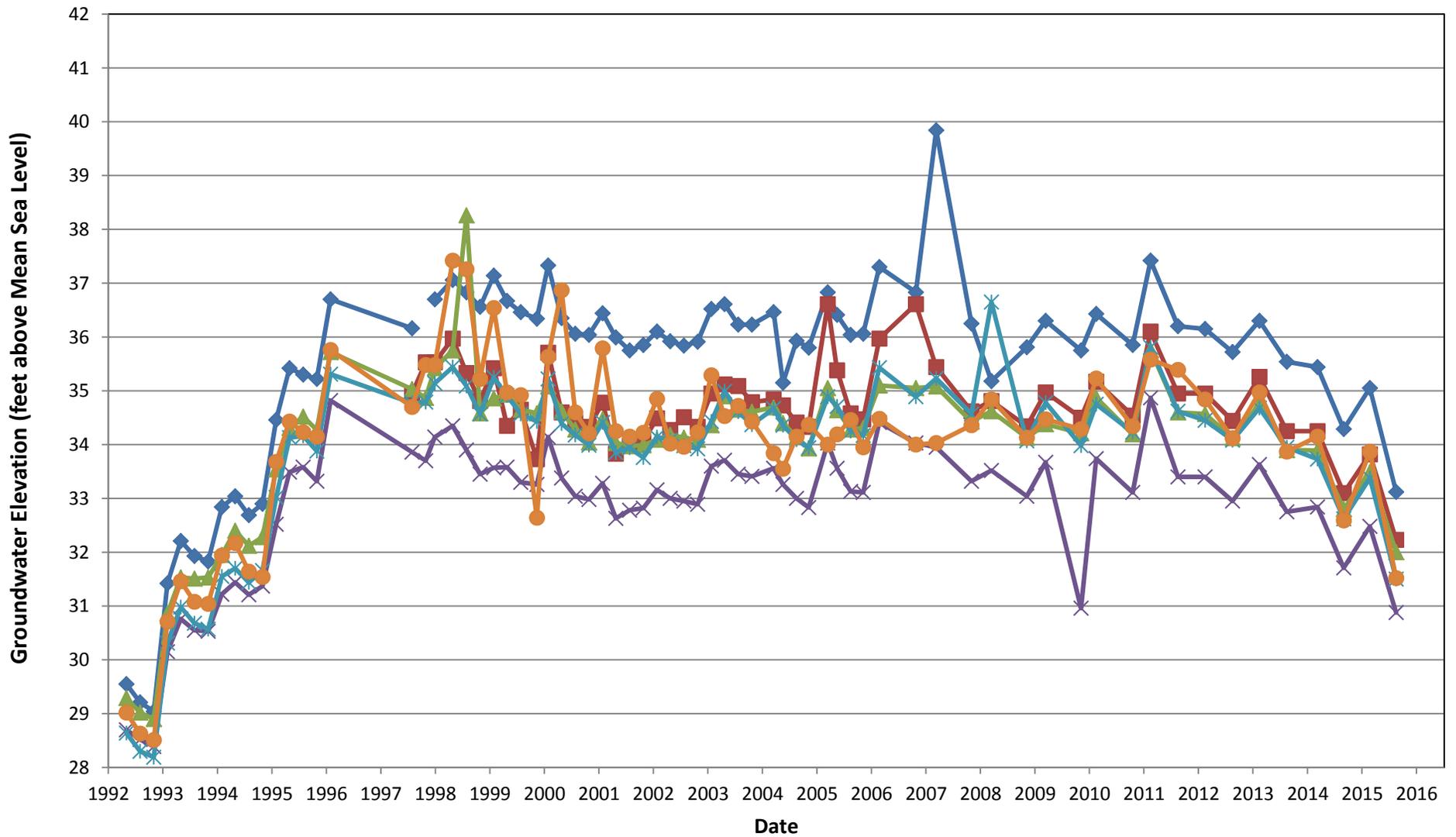
**Groundwater Extracted and
 Mass of VOCs Removed**
 501 Ellis Street
 Mountain View, California

Geosyntec
 consultants

**Figure
 3**

WR2141

April 2016



- Legend**
- ✕ NEC-7A ◆ NEC-11A
 - NEC-12A ✧ NEC-23A
 - ▲ NEC-24A ■ NEC-26A

Groundwater Elevations in Selected Monitoring Wells

501 Ellis Street
Mountain View, California

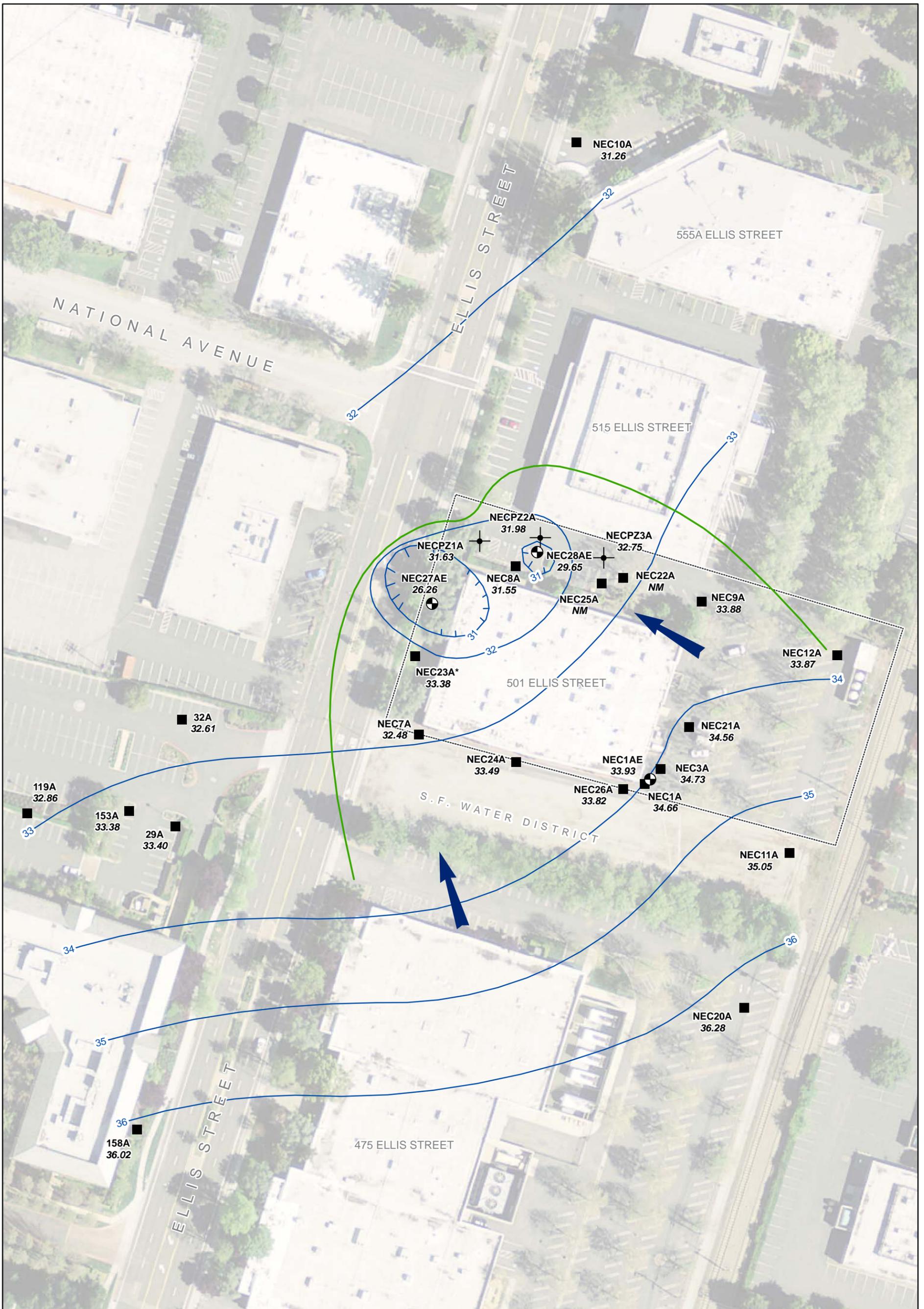
Geosyntec
consultants

Figure

4

WR2141

April 2016



Legend

- Estimated Capture Zone
- Groundwater Elevation Contour (ft MSL)
- Extraction Well
- Monitoring Well
- Piezometer
- 501 Ellis Street Boundary
- Groundwater Flow Direction

Notes:

- * Groundwater measurement not used in contouring
- ft MSL - feet mean sea level
- gpm - gallons per minute
- NM - Well not measured due to tenant improvement construction activities
- Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.

Extraction Rates (gpm)
 NEC1AE - 0.00
 NEC27AE - 1.61
 NEC28AE - 1.90

0 80
 Feet

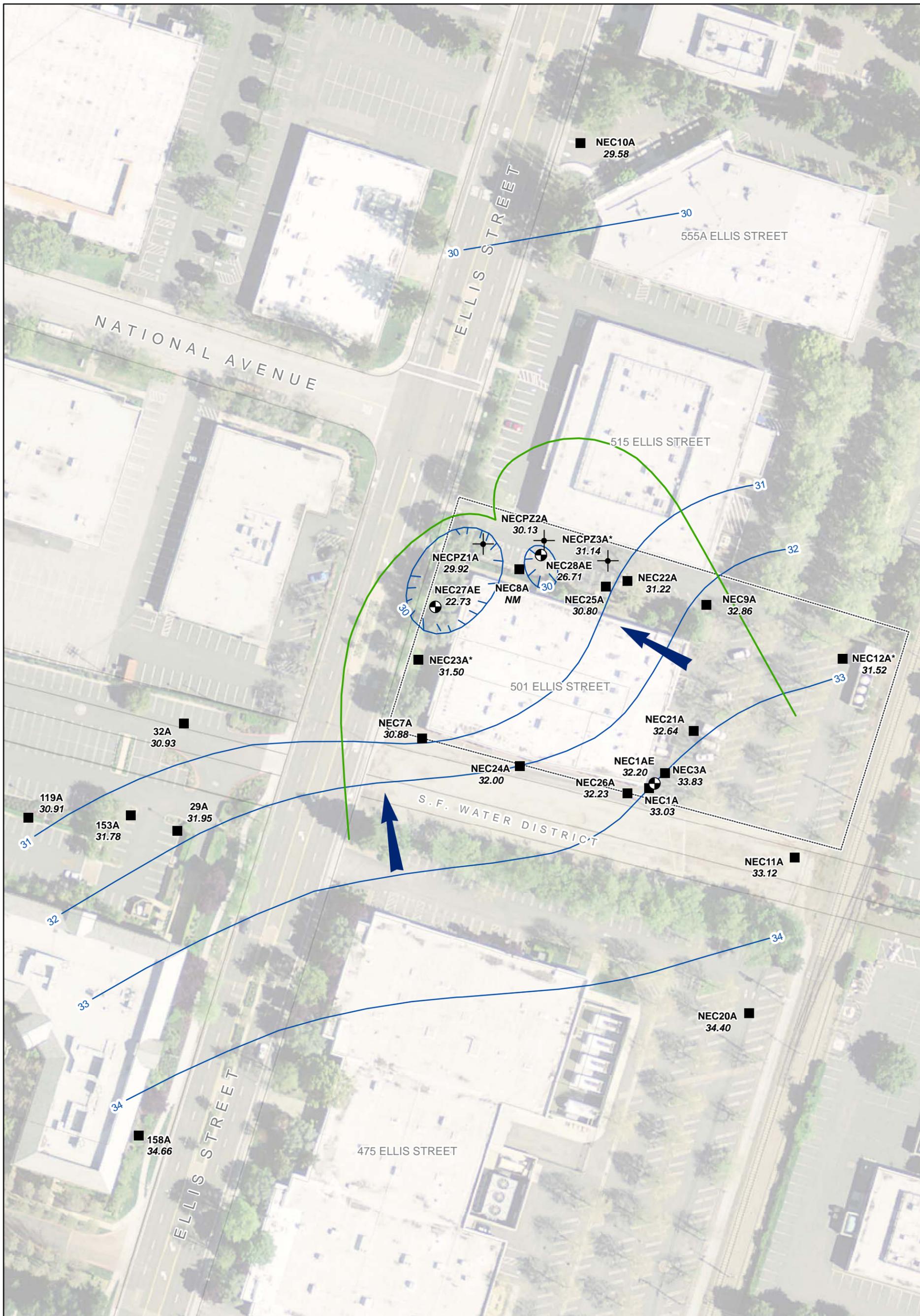
Groundwater Elevation Contour Map and Capture Zone
First Quarter 2015

501 Ellis Street
 Mountain View, California

Geosyntec
 consultants

Figure
5

WR2141 April 2016



Legend

- Estimated Capture Zone
- Groundwater Elevation Contour (ft MSL)
- Extraction Well
- Monitoring Well
- Piezometer
- 501 Ellis Street Boundary
- Groundwater Flow Direction

Notes:

- * Groundwater measurement not used in contouring
- ft MSL - feet mean sea level
- gpm - gallons per minute
- NM - Well not measured due to tenant improvement construction activities
- Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.

Extraction Rates (gpm)

- NEC1AE - 0.00
- NEC27AE - 1.25
- NEC28AE - 2.04

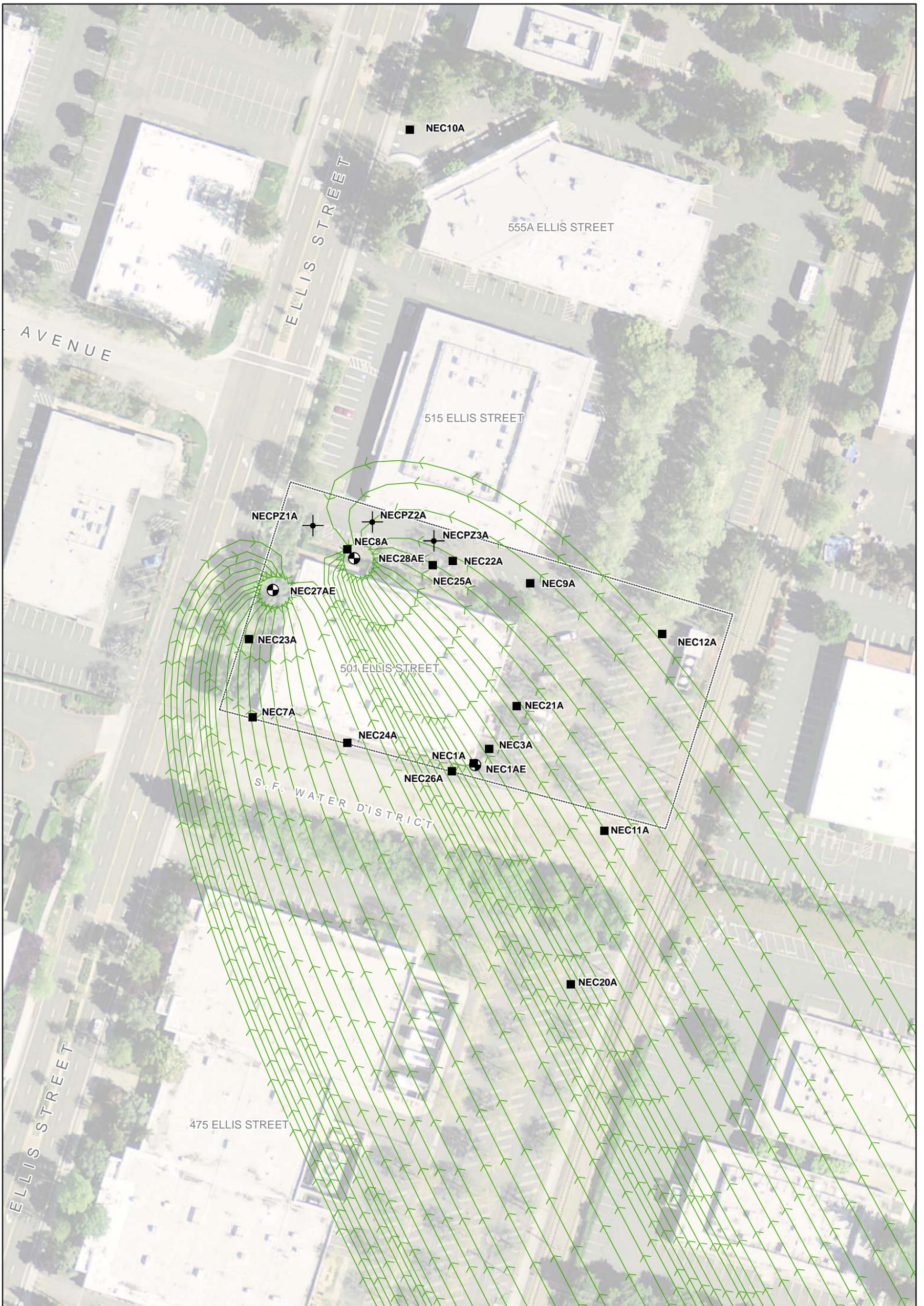
Groundwater Elevation Contour Map and Capture Zone
Third Quarter 2015

501 Ellis Street
Mountain View, California

Geosyntec
consultants

Figure
6

WR2141 April 2016



Legend

- Particle Pathline Indicating Simulated Capture Zone
- Extraction Well
- Monitoring Well
- Piezometer
- 501 Ellis Street Boundary

Notes:
 ft - feet
 gpm - gallons per minute
 in - inches
 N - North
 W - West
 yr - year

- Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.

Model Parameters:

Transmissivity: 91.3 ft ² /day	Extraction Rates (gpm)
Hydraulic Gradient 0.008 ft/ft, N28W	NEC1AE - 0.00
Recharge 1 in/yr	NEC27AE - 1.61
	NEC28AE - 1.90



**Simulated A Aquifer Capture Zone
First Quarter 2015**

501 Ellis Street
Mountain View, California

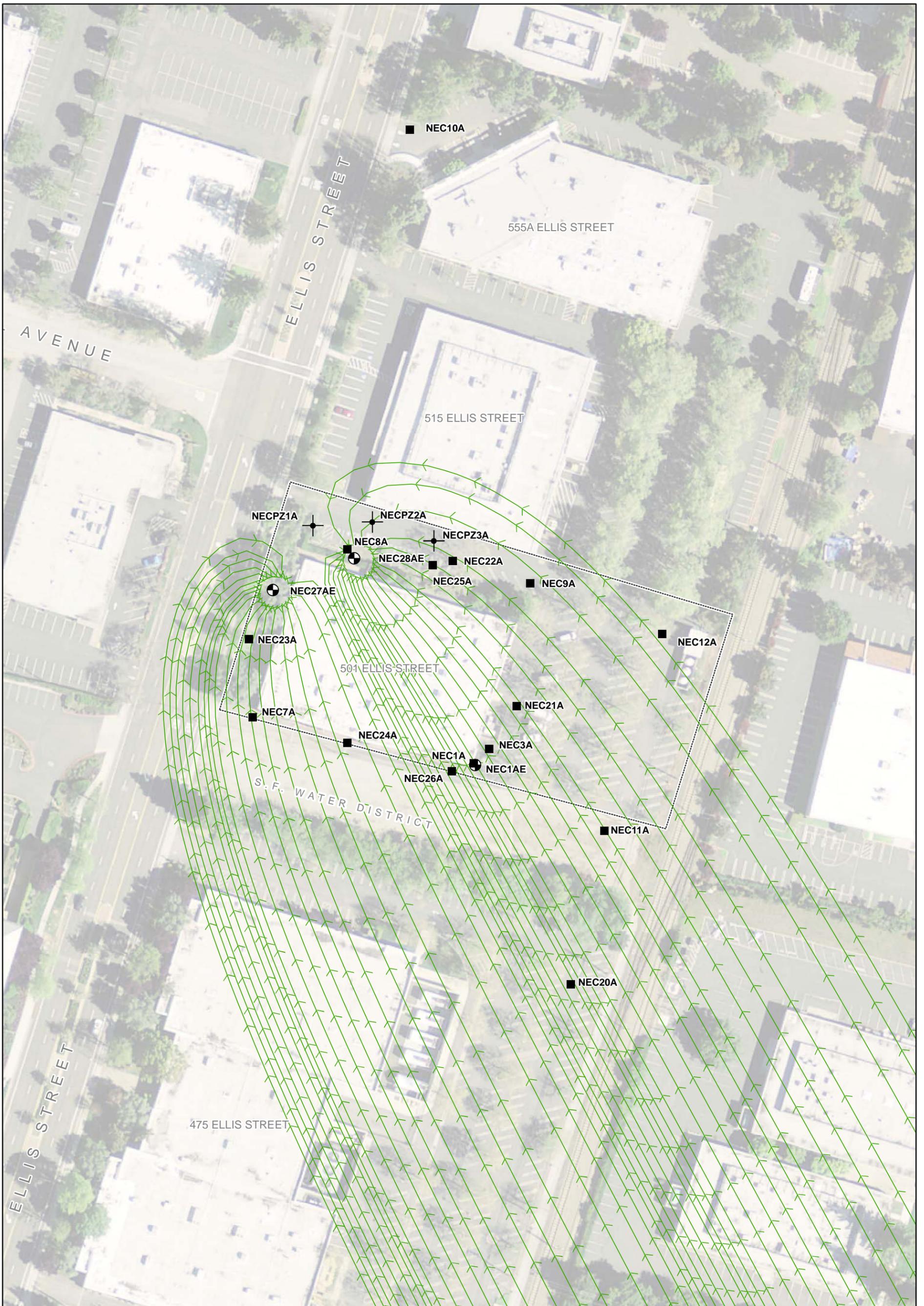
Geosyntec
consultants

Figure

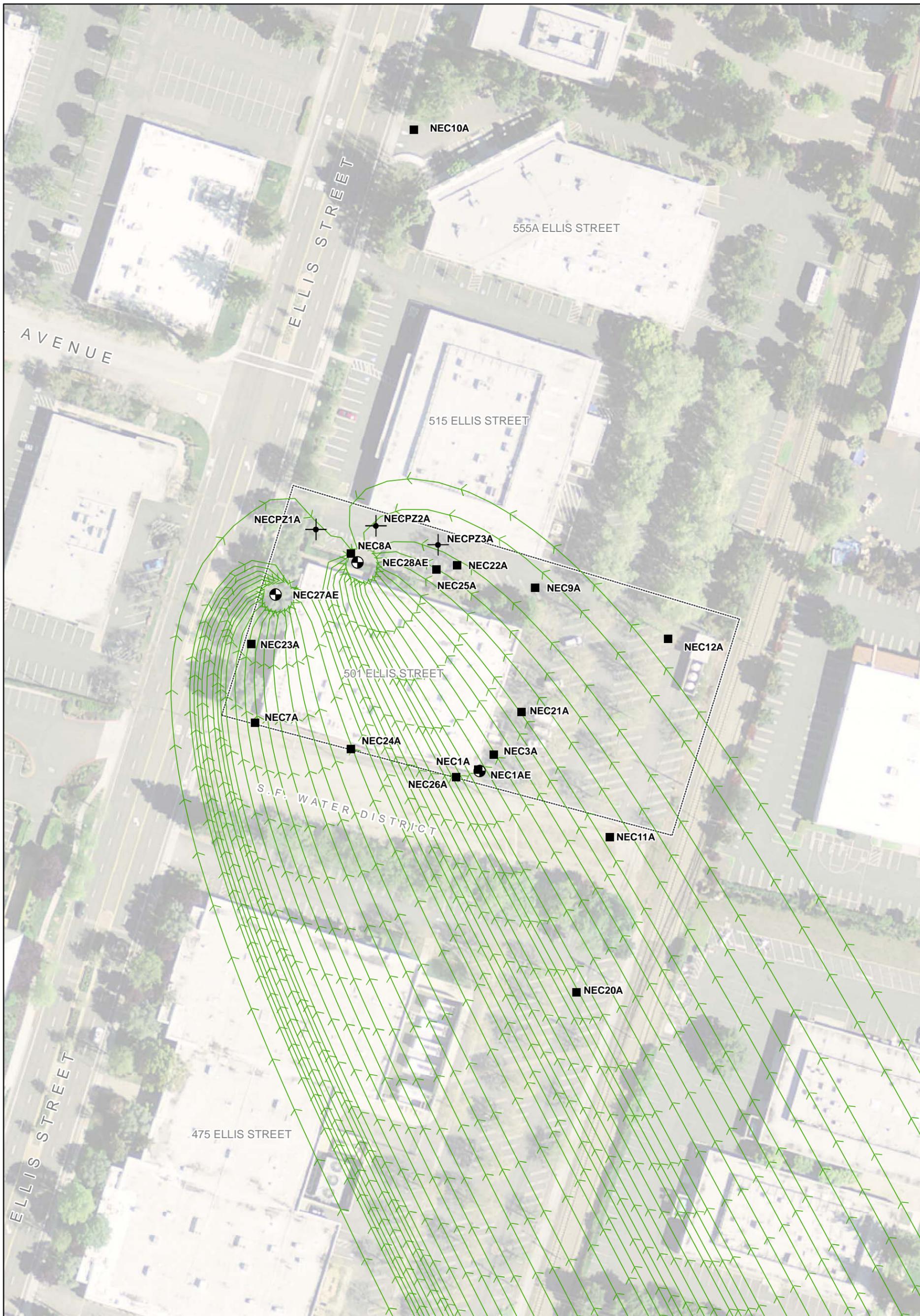
7

WR2141

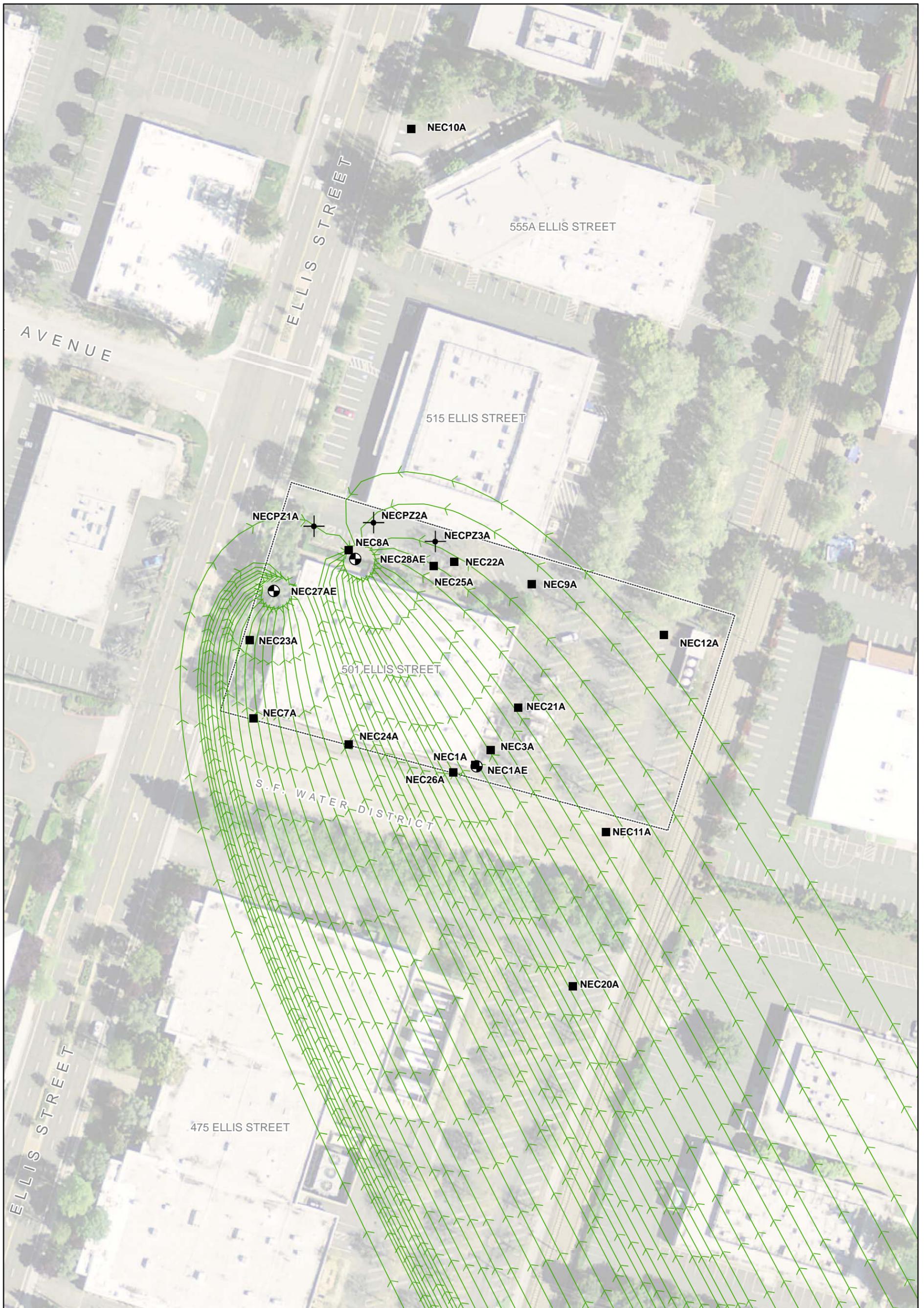
April 2016



Legend Particle Pathline Indicating Simulated Capture Zone Extraction Well Monitoring Well Piezometer 501 Ellis Street Boundary Notes: ft - feet gpm - gallons per minute in - inches N - North W - West yr - year - Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.	Model Parameters: Transmissivity: 91.3 ft ² /day Hydraulic Gradient: 0.008 ft/ft, N28W Recharge: 1 in/yr	Extraction Rates (gpm) NEC1AE - 0.00 NEC27AE - 1.63 NEC28AE - 1.87	Simulated A Aquifer Capture Zone Second Quarter 2015 501 Ellis Street Mountain View, California	Figure 8
	0 80 Feet	WR2141	April 2016	



Legend Particle Pathline Indicating Simulated Capture Zone Extraction Well Monitoring Well Piezometer 501 Ellis Street Boundary Notes: ft - feet gpm - gallons per minute in - inches N - North W - West yr - year - Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.	Model Parameters: Transmissivity: 91.3 ft ² /day Hydraulic Gradient: 0.008 ft/ft, N28W Recharge: 1 in/yr	Extraction Rates (gpm) NEC1AE - 0.00 NEC27AE - 1.25 NEC28AE - 2.04	Simulated A Aquifer Capture Zone Third Quarter 2015 501 Ellis Street Mountain View, California
	0 80 Feet		
WR2141		April 2016	



Legend

- Particle Pathline Indicating Simulated Capture Zone
- Extraction Well
- Monitoring Well
- Piezometer
- 501 Ellis Street Boundary

Notes:
 ft - feet
 gpm - gallons per minute
 in - inches
 N - North
 W - West
 yr - year

- Extraction from well NEC-1AE discontinued on 13 May 2009 as part of SGGWR system optimization.

Model Parameters:

Transmissivity: 91.3 ft ² /day	Extraction Rates (gpm)
Hydraulic Gradient 0.008 ft/ft, N28W	NEC1AE - 0.00
Recharge 1 in/yr	NEC27AE - 1.11
	NEC28AE - 2.12



**Simulated A Aquifer Capture Zone
Fourth Quarter 2015**

501 Ellis Street
Mountain View, California

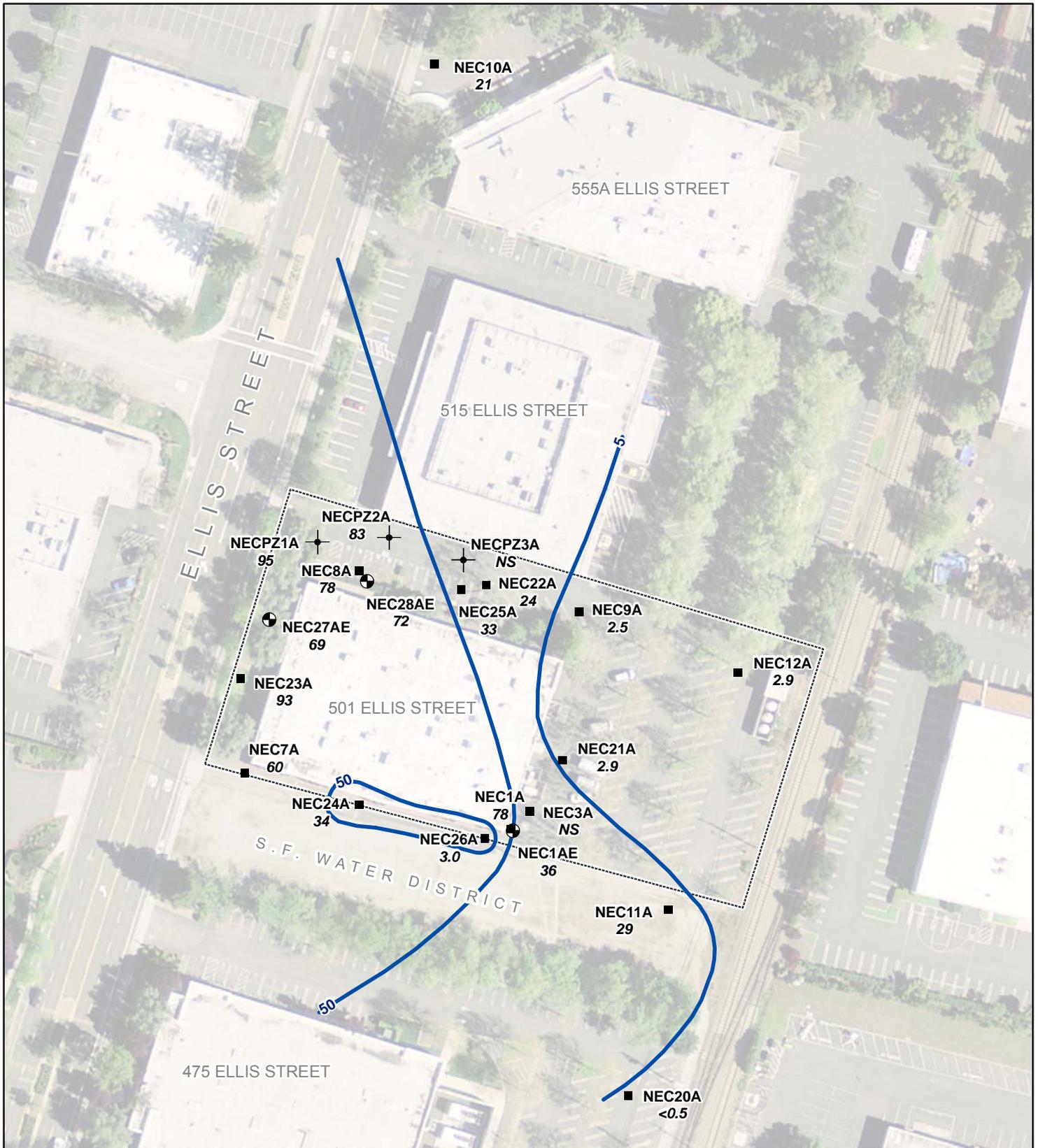
Geosyntec
consultants

Figure

10

WR2141

April 2016



Legend

- Extraction Well
- Monitoring Well
- Piezometer
- TCE Concentration Contour (µg/L)
- 501 Ellis Street Boundary

Notes:
 NS - Not Sampled
 TCE - Trichloroethene
 µg/L - micrograms per liter
 - NEC1AE sampled on 14 December 2015
 - TCE concentrations measured in (µg/L)



**TCE Concentration Contour Map
 2015 Annual Monitoring Event**

501 Ellis Street
 Mountain View, California

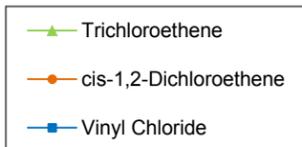
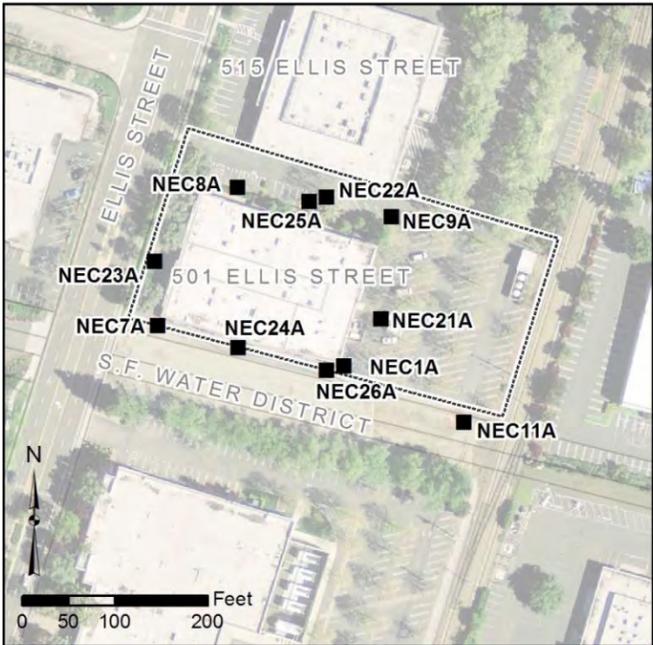
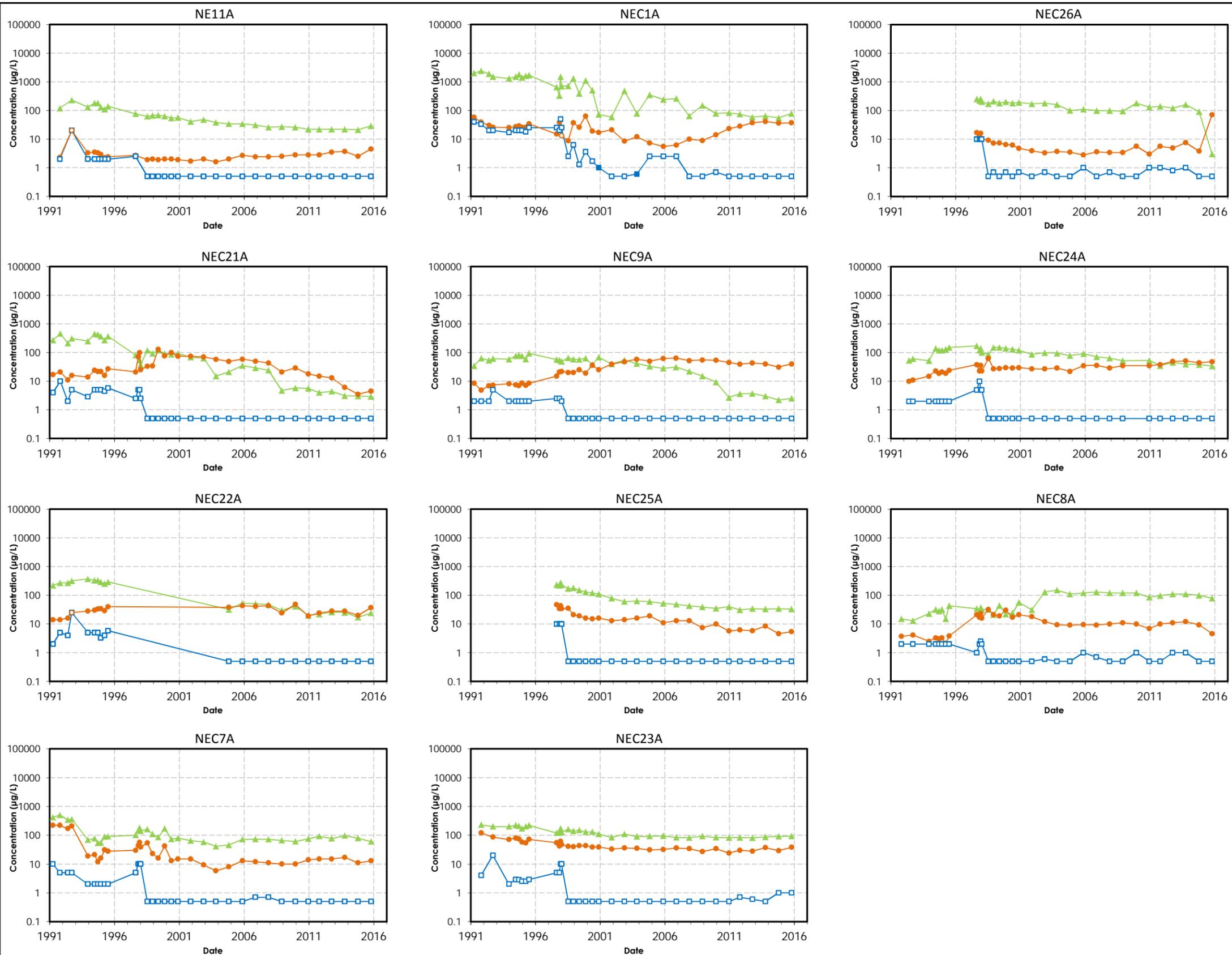
Geosyntec
 consultants

Figure

11

WR0434A

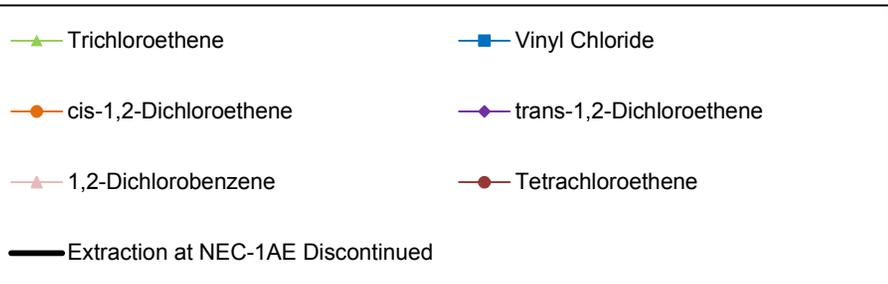
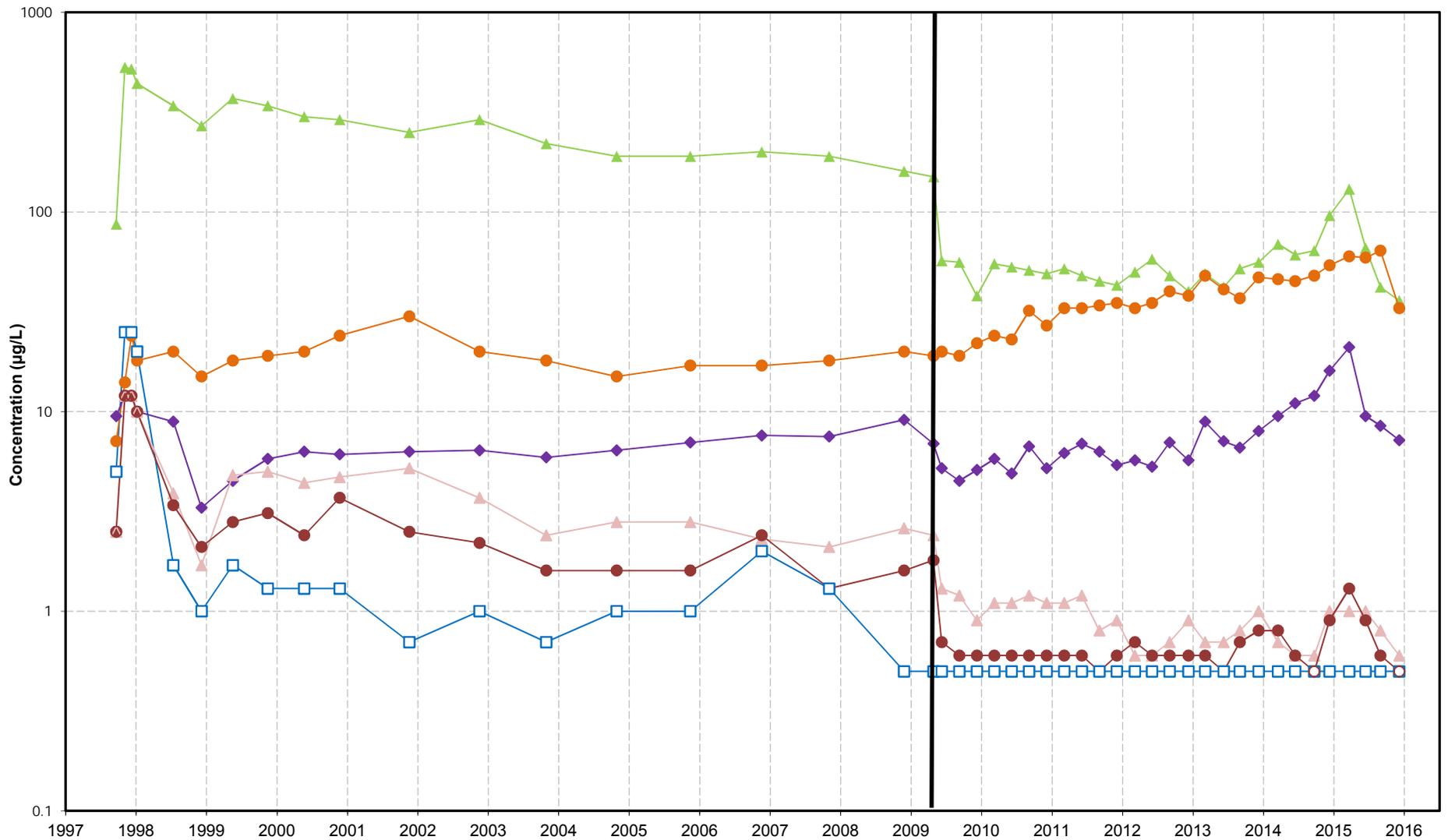
April 2015



Notes:
 - Open symbols are non-detects, presented at limit of quantification.
 VOC - Volatile Organic Compounds
 µg/L - micrograms per liter

■ Monitoring Well
 □ 501 Ellis Street Boundary

VOC Concentrations in Groundwater	
501 Ellis Street Mountain View, California	
WR2141	April 2016
Figure 12	



Date

Notes:
 - Open symbols are non-detects, presented at limit of quantification.
 VOC - volatile organic compound
 µg/L - micrograms per liter

VOC Concentrations in Well NEC-1AE	
501 Ellis Street Mountain View, California	
WR2141	April 2016
Figure 13	

APPENDIX A

2015 Annual Report Remedy Performance Checklist

2015 Annual Report Remedy Performance Checklist

I. GENERAL SITE INFORMATION			
Facility Name: 501 Ellis Street			
Facility Address, City, State: 501 Ellis Street, Mountain View, CA			
Checklist completion date: 17 March 2016		EPA Site ID: CAD980883268 (CERCLIS database)	
Site Lead: <input type="checkbox"/> Fund <input type="checkbox"/> PRP <input type="checkbox"/> State <input type="checkbox"/> State Enforcement <input type="checkbox"/> Federal Facility <input checked="" type="checkbox"/> Other, specify: U.S. EPA Region 9			
Site Remedy Components (Include Other Reference Documents for More Information, as appropriate): (See Section 4.2.5 "Final, Second Five-Year Report for MEW Superfund Study Area, Mountain View, California." U.S. EPA Region 9. September 2009.) Soil Remedy. Excavation and aeration. About 210 cubic yards of soil were excavated and aerated. 55 cubic yards were reused as backfill on site; the remaining 155 cubic yards were disposed offsite. Groundwater Remedy. Source control groundwater extraction system consisting of two A zone groundwater extraction wells, and discharge to City of Mountain View sanitary sewer under City of Mountain View Wastewater Discharge Permit ID Number 925.			
II. CONTACTS			
<u>List important personnel associated with the Site:</u> Name, title, phone number, e-mail address:			
	Name/Title	Phone	E-mail
PRP / Facility Representative	John Jeter, Esq. Senior Corporate Counsel Renesas Electronics America, Inc.	408.588.6185	john.jeter@renesas.com
PRP Contractor/ Consultant	Eric Suchomel, Ph.D., P.E. Geosyntec Consultants	510.285.2786	esuchomel@geosyntec.com
O&M Contractor	Wes Hawthorne Locus Technologies, Inc.	650.960.1640	hawthornej@locustec.com
Other	N/A	N/A	N/A

2015 Annual Report Remedy Performance Checklist

III. O&M COSTS (OPTIONAL)
What is your annual O&M cost total for the reporting year? _____ Breakout your annual O&M cost total into the following categories (use either dollars or %):
<ul style="list-style-type: none"> • Analytical (e.g., lab costs): _____ • Labor (e.g., site maintenance, sampling): _____ • Materials (e.g., treatment chemicals): _____ • Oversight (e.g., project management): _____ • Utilities (e.g., electric, gas, phone, water): _____ • Reporting (e.g., NPDES, progress): _____ • Other (e.g., capital improvements): _____
Describe unanticipated/unusually high or low O&M costs (go to section [fill in] to recommend optimization methods):
IV. ON-SITE DOCUMENTS AND RECORDS (Check all that apply)
<input checked="" type="checkbox"/> O&M Manual <input type="checkbox"/> O&M Maintenance Logs <input type="checkbox"/> O&M As-built drawings <input type="checkbox"/> O&M reports <input type="checkbox"/> Daily access/Security logs <input checked="" type="checkbox"/> Site-Specific Health & Safety Plan <input checked="" type="checkbox"/> Contingency/Emergency Response Plan <input type="checkbox"/> O&M/OSHA Training Records <input type="checkbox"/> Settlement Monument Records <input type="checkbox"/> Gas Generation Records <input type="checkbox"/> Groundwater monitoring records <input type="checkbox"/> Leachate extraction records <input type="checkbox"/> Discharge Compliance Records <input type="checkbox"/> Air discharge permit <input checked="" type="checkbox"/> Effluent discharge permit <input checked="" type="checkbox"/> Waste disposal, POTW permit
Are these documents currently readily available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, where are records kept?
V. INSTITUTIONAL CONTROLS (as applicable)
List institutional controls called for (and from what enforcement document): Not applicable
Status of their implementation:
Where are the ICs documented and/or reported?
ICs are being properly implemented and enforced? <input type="checkbox"/> Yes <input type="checkbox"/> No, elaborate below ICs are adequate for site protection? <input type="checkbox"/> Yes <input type="checkbox"/> No, elaborate below
Additional remarks regarding ICs:

2015 Annual Report Remedy Performance Checklist

VIII. GROUNDWATER REMEDY (reference concentration, capture zone maps, trend analysis, and other documentation to support analysis)	
<p><u>Groundwater Quality Data</u> List the types of data that are available:</p> <p>2015 Annual Progress Report submitted April 2016. Data includes groundwater levels, groundwater elevation contours and estimated capture zone analyses, groundwater sampling results (lab reports and summary tables) and trichloroethene (TCE) concentration contour maps (annual only), concentration versus time graphs for all monitoring wells, and Mann-Kendall concentration trend analyses for TCE and <i>cis</i>-1,2-dichloroethene (<i>cis</i>-1,2-DCE) in all sampled wells.</p> <p><input type="checkbox"/> Contaminant trend(s) tracked during O&M (i.e., temporal analysis of groundwater contaminant trends). <input checked="" type="checkbox"/> Groundwater data tracked with software for temporal analyses. <input type="checkbox"/> Reviewed MNA parameters to ensure health of substrate (e.g., DO, pH, temperature), if appropriate?</p>	<p>What is the source report?</p>
<p><u>Groundwater Pump & Treat Extraction Well and Treatment System Data</u> List the types of data that are available:</p> <p>2015 Annual Progress Report submitted April 2016. Data includes extraction system operating parameters (e.g., flow rates and volumes), operations and maintenance records, and effluent monitoring results per City of Mountain View reporting requirements. In addition, the progress report documents site-related meetings, reports submitted, investigations performed, and historical and current groundwater elevation and sampling results.</p> <p><input checked="" type="checkbox"/> The system is functioning adequately. <input type="checkbox"/> The system has been shut down for significant periods of time in the past year. Please elaborate below.</p>	<p>What is the source report?</p>
<p><u>Discharge Data</u> List the types of data that are available:</p> <p>Semi-annual Periodic Reports of Continued Compliance (PRCC) submitted to the City of Mountain View in June and December 2015. Data includes results of self-monitoring analysis (flow rates, volumes, effluent chemistry, etc.) conducted during 2015.</p> <p><input checked="" type="checkbox"/> The system is in compliance with discharge permits.</p>	<p>What is the source report?</p>
<p><u>Slurry Wall Data</u> NA List the types of data that are available:</p> <p>Is slurry wall operating as designed? <input type="checkbox"/> Yes <input type="checkbox"/> No If not, what is being done to correct the situation?</p>	<p>What is the source report?</p>
<p><u>Elaborate on technical data and/or other comments</u></p>	

2015 Annual Report Remedy Performance Checklist

IX. AIR MONITORING/VAPOR INTRUSION PATHWAY EVALUATION (Include in Annual Progress Report and reference document)
<p>In 2012, a vapor pathway investigation was conducted, including indoor air, outdoor air and sub-slab vapor sampling. Prior to, and following indoor construction (tenant improvement) activities in 2014, indoor and outdoor air sampling was conducted by a consultant for the 501 Ellis Street tenant. No vapor intrusion work took place in 2015.</p>
<p>Recommendations/Next Steps: Additional vapor sampling will be completed following EPA approval of the Revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering for the purpose of placing the building into a final response action tier.</p>
<p>Schedule:</p>
X. REMEDY PERFORMANCE ASSESSMENT
A. Groundwater Remedies
<p>What are the remedial goals for groundwater? <input checked="" type="checkbox"/> Plume containment (prevent plume migration); <input checked="" type="checkbox"/> Plume restoration (attain ROD-specific cleanup levels in aquifer); <input type="checkbox"/> Other goals, please explain: See Source Control discussion, Section C., below.</p> <p>Have you done a trend analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; If Yes, what does it show? (Is it inconclusive due to inadequate data? Are the concentrations increasing or decreasing?) Explain and provide source document reference.</p> <p>Figure 14 of the 2015 Annual Report indicates decreasing TCE concentrations in most monitoring wells. In six of the wells with decreasing TCE concentrations, <i>cis</i>-1,2-DCE concentrations are increasing, which may be indicative of TCE natural attenuation.</p>
<p>If plume containment is a remedial goal, check all that apply: <input checked="" type="checkbox"/> Plume migration is under control (explain basis below) <input type="checkbox"/> Plume migration is not under control (explain basis below) <input type="checkbox"/> Insufficient data to determine plume stability (explain below) (Include attachments that substantiate your answers, e.g., reference plume, trend analysis, and capture zone maps in source document)</p>
<p>Elaborate on basis for determining that plume containment goal is being met or not being met: Capture zone analysis indicates plume is contained (Figures 5 through 10 in the 2015 Annual Report).</p>
<p>If plume restoration is a cleanup objective, check all that apply: <input checked="" type="checkbox"/> Progress is being made toward reaching cleanup levels (explain basis below) <input type="checkbox"/> Progress is not being made toward reaching cleanup levels (explain basis below) <input type="checkbox"/> Insufficient data to determine progress toward restoration goal (explain below)</p>
<p>Elaborate on basis for determining progress or lack of progress toward restoration goal: TCE concentrations within the plume are decreasing (Figure 11 in the 2015 Annual Report)</p>
B. Vertical Migration
<p>Have you done an assessment of vertical gradients? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; If Yes, what does it show? (Is it inconclusive due to inadequate data? Are the concentrations increasing or decreasing? Explain and provide source document</p>

2015 Annual Report Remedy Performance Checklist

reference) Vertical gradients were assessed in 1995. The vertical gradients were assessed between the A and B1 units, B1 and B2 units, and B2 and B3 units. Gradients in 16 of 17 well pairs were upward. Gradient in the deeper B2-B3 well pair was downward.
C. Source Control Remedies
What are the remedial goals for source control? Containment by pumping. Elaborate on basis for determining progress or lack of progress toward these goals: On-site capture is achieved through two extraction wells, NEC27AE and NEC28AE, and TCE concentration trends are generally decreasing.
XI. PROJECTIONS
<u>Administrative Issues</u> Dates of next monitoring and sampling events for next annual reporting period: 2016 Annual Monitoring will be scheduled by the MEW parties in September/October.
A. Groundwater Remedies - Projections for the upcoming year and long-term (Check all that apply)
<u>Remedy Projections for the upcoming year (2016)</u> <input checked="" type="checkbox"/> No significant changes projected. <input type="checkbox"/> Groundwater remedy will be converted to monitored natural attenuation. Target date: <input type="checkbox"/> Groundwater Pump & Treat will be shut down. Target date: <input type="checkbox"/> Groundwater cleanup standards to be modified. Target date: <input type="checkbox"/> PRP will request remedy modification. Target date of request: <input type="checkbox"/> Change in the number of monitoring wells. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Change in the number and/or types of analytes being analyzed. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Change in groundwater extraction system. Expansion or minimization (i.e., number of extraction wells and/or pumping rate)? Target date: <input type="checkbox"/> Modification on groundwater treatment? Elaborate below. Target date: <input type="checkbox"/> Change in discharge location. Target date: <input type="checkbox"/> Other modification(s) anticipated: _____ Elaborate below. Target date:
Elaborate on Remedy Projections:
<u>Remedy Projections for the long-term (Check all that apply)</u> <input checked="" type="checkbox"/> No significant changes projected. <input type="checkbox"/> Groundwater remedy will be converted to monitored natural attenuation. Target date: <input type="checkbox"/> Groundwater Pump & Treat will be shut down. Target date: <input type="checkbox"/> Groundwater cleanup standards to be modified. Target date: <input type="checkbox"/> PRP will request remedy modification. Target date of request: <input type="checkbox"/> Change in the number of monitoring wells. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Change in the number and/or types of analytes being analyzed. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Change in groundwater extraction system. Expansion or minimization (i.e., number of extraction wells and/or pumping rate)? Target date: <input type="checkbox"/> Modification on groundwater treatment? Elaborate below. Target date: <input type="checkbox"/> Change in discharge location. Target date: <input type="checkbox"/> Other modification(s) anticipated: _____ Elaborate below. Target date:

2015 Annual Report Remedy Performance Checklist

<p>Elaborate on Remedy Projections: Projected long-term remedy projections are the same as the projections for 2014.</p>
<p>B. Projections – Slurry Walls (Check all that apply) – N/A</p>
<p><u>Remedy Projections for the upcoming year (2016)</u> <input type="checkbox"/> No significant changes projected. <input type="checkbox"/> PRP will request remedy modification. Target date of request: <input type="checkbox"/> Change in the number of monitoring wells. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Other modification(s) anticipated: _____ Elaborate below. Target date:</p>
<p>Elaborate on Remedy Projections:</p>
<p><u>Remedy Projections for the long-term</u> <input type="checkbox"/> No significant changes projected. <input type="checkbox"/> PRP will request remedy modification. Target date of request: <input type="checkbox"/> Change in the number of monitoring wells. <input type="checkbox"/> Increasing or <input type="checkbox"/> decreasing? Target date: <input type="checkbox"/> Other modification(s) anticipated: _____ Elaborate below. Target date:</p>
<p>Elaborate on Remedy Projections:</p>
<p>C. Projections – Other Remedial Options Being Reviewed to Enhance Cleanup</p> <p>Progress implementing recommendations from last report or Five-Year Review Has optimization study been implemented or scheduled? <input checked="" type="checkbox"/> Yes; <input type="checkbox"/> No; If Yes, please elaborate. Modifications to the SCGWR system to allow discharge to the City of Mountain View sanitary sewer were completed in May 2009 and discharge to the sanitary sewer was started. Extraction well NEC-01AE was shut down, and the target flow rates at extraction wells NEC-27AE and NEC-28AE were set to nominal values of 2.0 gpm.</p>
<p>XII. ADMINISTRATIVE ISSUES Check all that apply:</p>
<p><input type="checkbox"/> Explanation of Significant Differences in progress <input type="checkbox"/> ROD Amendment in progress <input type="checkbox"/> Site in operational and functional ("shake down") period; <input type="checkbox"/> Notice of Intent to Delete in progress <input type="checkbox"/> Partial site deletion in progress <input type="checkbox"/> TI Waivers <input type="checkbox"/> Other administrative issues: Date of Next Five-Year Review: 2019</p>

2015 Annual Report Remedy Performance Checklist

XII. RECOMMENDATIONS

APPENDIX B

Capture Zone Calculations

APPENDIX B - CALCULATIONS FOR CAPTURE ZONE ANALYSIS

The 2015 capture zone analysis was conducted using two methodologies: the Javandel and Tsang (1987)¹ methodology and a site-specific numerical model. Both methodologies require the same input parameters to estimate the capture zones of the groundwater extraction wells. The input parameters used in the numerical model were evaluated during the fourth quarter of 2004 and remain consistent with the current understanding of the Site conditions. Other than average quarterly pumping rates by extraction wells, input parameters were unchanged in 2015.

Pumping Rate

The average quarterly pumping rates during 2015 for the two operating extraction wells at 501 Ellis Street are summarized below:

Quarter	Well	Avg Monthly Flow (gpm)			Avg Quarterly Flow Q (gpm)	Avg Quarterly Flow Q (ft ³ /day)
1	27AE	1.67	1.41	1.75	1.61	310
	28AE	2.07	1.67	1.96	1.90	366
2	27AE	1.61	1.72	1.56	1.63	314
	28AE	1.92	1.84	1.84	1.87	359
3	27AE	1.43	1.25	1.08	1.25	241
	28AE	2.07	2.03	2.02	2.04	393
4	27AE	1.08	0.98	1.27	1.11	214
	28AE	2.02	1.98	2.37	2.12	409

Hydraulic Gradient

The hydraulic gradient, i , was calculated using the November 2004 regional potentiometric surface in the vicinity of the Site from Weiss Associates (2004)².

$$i = \frac{5 \text{ ft}}{625 \text{ ft}} = 0.008 \frac{\text{ft}}{\text{ft}}$$

¹ Javandel and Tsang (1987). Groundwater, Vol. 25, No. 5. pp. 616-625.

² Weiss Associates, 2004. *Draft A/A1 Aquifer (South) Groundwater Elevations and Estimated Capture Zones*. 18 November.

Aquifer Thickness

The aquifer thickness, B, was assumed to be uniform and **20 feet**. The interlayered heterogeneities of the A aquifer, observed in the stratigraphy of the pumping wells, are treated as a single unit extending from 10 to 30 feet below ground surface.

Transmissivity

Transmissivity (T) was measured by Bechtel (1996)³ in monitoring wells NEC-12A, NEC-22A, and NEC-25A.

Well	T (ft ² /day)	Average T in each well
NEC-12A	6.5	6.5
NEC-22A	35 21	28.0
NEC-25A	188 291	239.5
	Average T	91.3 ft²/day

Hydraulic Conductivity

The hydraulic conductivity, K, is calculated from the transmissivity, T, and aquifer thickness as follows:

$$K = \frac{T}{B} = \frac{91.3 \text{ ft}^2 / \text{day}}{20 \text{ ft}} = \boxed{4.6 \text{ ft/day}}$$

The input parameters for the Javandel and Tsang methodology, as well as the numerical model are summarized as follows:

Quarter	Parameter	Well NEC-27AE	Well NEC-28AE
1	Q (ft ³ /day)	310	366
2	Q (ft ³ /day)	314	359
3	Q (ft ³ /day)	241	393
4	Q (ft ³ /day)	214	409
All	B (ft)	20	20
All	K (ft/day)	4.6	4.6
All	i (ft/ft)	0.008	0.008

³ Bechtel, 1996. *Source Control Groundwater Remediation Final Design, 501 Ellis Street, Mountain View*. 26 August.

Javandel and Tsang Methodology

From Javandel and Tsang, the stagnation point for each extraction well was calculated using the expression:

$$X_s = \frac{Q}{2\pi BKi}$$

where: X_s = distance to stagnation point (ft)
 Q = pumping rate (ft³/day)
 B = saturated aquifer thickness (ft)
 K = hydraulic conductivity (ft/day)
 i = hydraulic gradient (ft/ft)

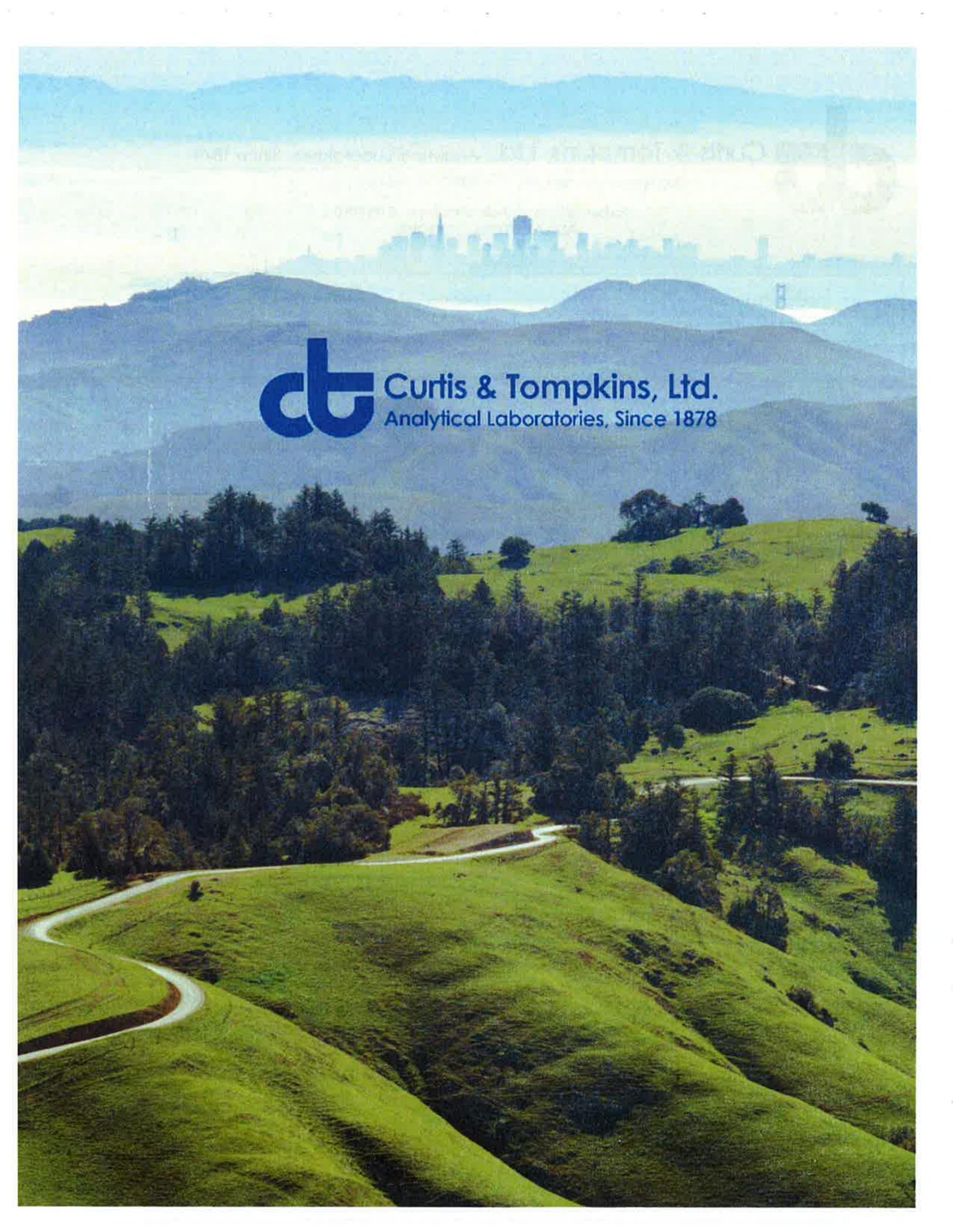
Using this equation and the above input parameters, the distance to stagnation points for the two wells, in feet, are:

Quarter	NEC-27AE	NEC-28AE
1	67.1	79.1
2	67.9	77.8
3	52.2	85.0
4	46.2	88.4

First and third quarter capture zones calculated using the Javandel and Tsang methodology are shown in Figures 5 and 6, respectively.

APPENDIX C

2015 Laboratory Analytical Reports



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2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

Laboratory Job Number 265690
ANALYTICAL REPORT

Locus Technologies
299 Fairchild Dr.
Mountain View, CA 94043

Project : 98007-99-2200
Location : NEC
Level : II

Sample ID
252 NEC-01AE

Lab ID
265690-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 04/03/2015

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 265690
Client: Locus Technologies
Project: 98007-99-2200
Location: NEC
Request Date: 03/30/15
Samples Received: 03/30/15

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/30/15. The sample was received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.



265690

CHAIN-OF-CUSTODY RECORD

(See Reverse for Instructions)

SERIAL NO.
15181

SAMPLERS

PROJECT NAME MEC

(PRINT)

PROJECT NUMBER 98007-99-2200

(SIGN)

RECORDER Nancy

(SIGN)

SAMPLE CONTAINER DESCRIPTION CODES

- A. 40-ml VOA Vial
- B. Glass Litter
- C. Plastic 500-ml
- D. Plastic Litter
- E. Brass Tube
- F. Other

SAMPLE DESCRIPTION CODES

- B. Ground Water
- C. Surface Water
- D. Leachate
- E. Rinseate
- F. Oil
- G. Waste
- H. Blank/Spike
- I. Other

TAT CODES

- 1. Standard
- 2. 48 Hour
- 3. 24 Hour
- 4. Other

ANALYTICAL LAB C&T

LABORATORY USE ONLY

LAB PROJECT NO.

ANALYSIS REQUESTED

Field Filtered (check) X EPA 809.0.5

Method Requested

Sample Store at 4°C (Check)

Maximum Holding Time for

TAT Requested (enter code)

No VOA Headspace (Check)

NOTES / MISCELLANEOUS

Temp blank: 1.3°C BL

Field / Container Temp.

Relinquished By: (Signature) Nancy Date 3-30-75 Time 1425

Relinquished By: (Signature) Nancy Date 3-30-75 Time 1655

Relinquished By: (Signature) Nancy Date 3-30-75 Time 1655

Container Sealed with Custody Seal: Yes No

Method of Shipment

Description of Transport Container

Other Chains-of-Custody Transported with this Chain (by Serial No.)

Dispatched By: (Signature) Nancy Date 3-30-75 Time 1425

Received for lab By: (Signature) Nancy Date 3-30-75 Time 1655

Verbal Requested: Yes No

Send Lab Results to (Name): Nancy Jeanne LeFevre (Check Office Below)

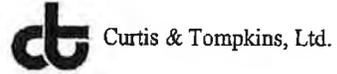
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WALNUT CREEK • 1701 N. CALIFORNIA BLVD • WALNUT CREEK, CA 94596 • TEL (925) 906-8100 • FAX (925) 906-8101

SACRAMENTO • 1100 MELODY LANE • ROSEVILLE, CA 95678 • TEL (916) 677-1751 • FAX (916) 677-1760

OTHER

COOLER RECEIPT CHECKLIST



Login # 265690 Date Received 3/30/15 Number of coolers 1
Client Locus Project NRC

Date Opened 3/30 By (print) BL (sign) [Signature]
Date Logged in [Signature] By (print) [Signature] (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... YES (circle) on cooler on samples NO
How many Name Date

2B. Were custody seals intact upon arrival? YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe)

- Bubble Wrap, Cloth material, Foam blocks, Cardboard, Bags, Styrofoam, None, Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C)

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO

If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are there any missing / extra samples? YES NO

11. Are samples in the appropriate containers for indicated tests? YES NO

12. Are sample labels present, in good condition and complete? YES NO

13. Do the sample labels agree with custody papers? YES NO

14. Was sufficient amount of sample sent for tests requested? YES NO

15. Are the samples appropriately preserved? YES NO N/A

16. Did you check preservatives for all bottles for each sample? YES NO N/A

17. Did you document your preservative check? YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? YES NO N/A

21. Was the client contacted concerning this sample delivery? YES NO

If YES, Who was called? By Date:

COMMENTS

[Blank lines for comments]



Detections Summary for 265690

Results for any subcontracted analyses are not included in this summary.

Client : Locus Technologies
Project : 98007-99-2200
Location : NEC

Client Sample ID : 252 NEC-01AE

Laboratory Sample ID :

265690-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	0.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	21		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	60		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	130		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Tetrachloroethene	1.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Volatile Organics

Lab #:	265690	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	252 NEC-01AE	Batch#:	221789
Lab ID:	265690-001	Sampled:	03/30/15
Matrix:	Water	Received:	03/30/15
Units:	ug/L		

Analyte	Result	RL	Diln Fac	Analyzed
Chloromethane	ND	1.0	1.000	03/30/15
Vinyl Chloride	ND	0.5	1.000	03/30/15
Bromomethane	ND	1.0	1.000	03/30/15
Chloroethane	ND	1.0	1.000	03/30/15
Trichlorofluoromethane	ND	1.0	1.000	03/30/15
Freon 113	ND	2.0	1.000	03/30/15
1,1-Dichloroethene	0.9	0.5	1.000	03/30/15
Methylene Chloride	ND	20	1.000	03/30/15
trans-1,2-Dichloroethene	21	0.5	1.000	03/30/15
1,1-Dichloroethane	ND	0.5	1.000	03/30/15
cis-1,2-Dichloroethene	60	0.5	1.000	03/30/15
Chloroform	ND	0.5	1.000	03/30/15
1,1,1-Trichloroethane	ND	0.5	1.000	03/30/15
Carbon Tetrachloride	ND	0.5	1.000	03/30/15
1,2-Dichloroethane	ND	0.5	1.000	03/30/15
Trichloroethene	130	1.0	2.000	03/31/15
1,2-Dichloropropane	ND	0.5	1.000	03/30/15
Bromodichloromethane	ND	0.5	1.000	03/30/15
cis-1,3-Dichloropropene	ND	0.5	1.000	03/30/15
trans-1,3-Dichloropropene	ND	0.5	1.000	03/30/15
1,1,2-Trichloroethane	ND	0.5	1.000	03/30/15
Tetrachloroethene	1.3	0.5	1.000	03/30/15
Dibromochloromethane	ND	0.5	1.000	03/30/15
Chlorobenzene	ND	0.5	1.000	03/30/15
Bromoform	ND	0.5	1.000	03/30/15
1,1,2,2-Tetrachloroethane	ND	0.5	1.000	03/30/15
1,3-Dichlorobenzene	ND	0.5	1.000	03/30/15
1,4-Dichlorobenzene	ND	0.5	1.000	03/30/15
1,2-Dichlorobenzene	1.0	0.5	1.000	03/30/15

Surrogate	%REC	Limits	Diln Fac	Analyzed
Dibromofluoromethane	97	80-128	1.000	03/30/15
1,2-Dichloroethane-d4	98	75-139	1.000	03/30/15
Toluene-d8	99	80-120	1.000	03/30/15
Bromofluorobenzene	115	80-120	1.000	03/30/15

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Volatile Organics			
Lab #:	265690	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	221789
Units:	ug/L	Analyzed:	03/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC782471

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	11.78	94	66-135
Trichloroethene	12.50	12.51	100	80-123
Chlorobenzene	12.50	13.38	107	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-128
1,2-Dichloroethane-d4	100	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC782472

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	11.19	90	66-135	5	24
Trichloroethene	12.50	11.91	95	80-123	5	20
Chlorobenzene	12.50	12.73	102	80-123	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-128
1,2-Dichloroethane-d4	96	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

RPD= Relative Percent Difference

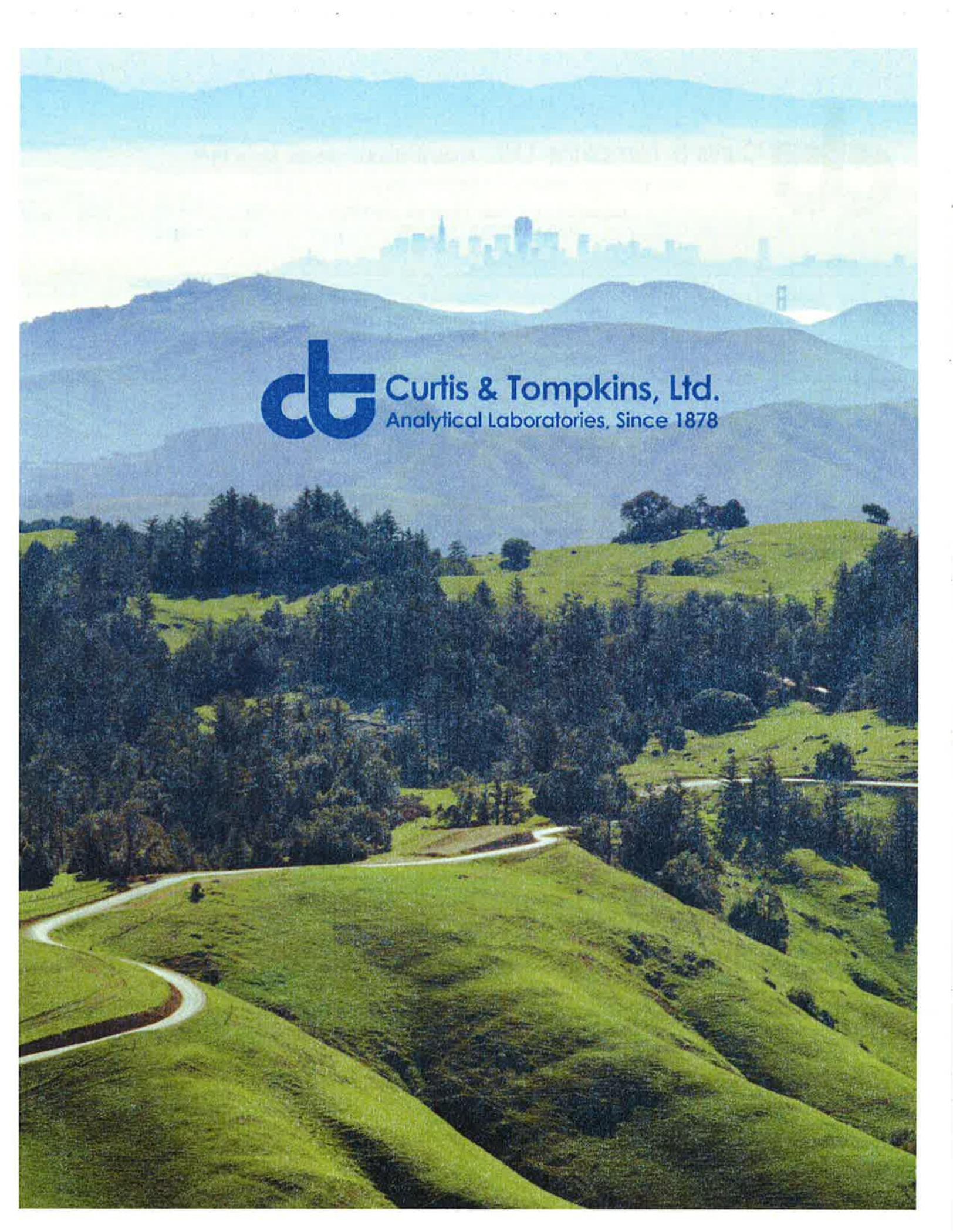
Batch QC Report
Volatile Organics

Lab #:	265690	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC782473	Batch#:	221789
Matrix:	Water	Analyzed:	03/30/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-128
1,2-Dichloroethane-d4	97	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	116	80-120

ND= Not Detected
 RL= Reporting Limit



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 267710
ANALYTICAL REPORT

Locus Technologies
299 Fairchild Dr.
Mountain View, CA 94043

Project : 98007-99-2200
Location : NEC
Level : II

Sample ID
253NEC-01AE

Lab ID
267710-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 06/29/2015

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 267710
Client: Locus Technologies
Project: 98007-99-2200
Location: NEC
Request Date: 06/23/15
Samples Received: 06/23/15

This data package contains sample and QC results for one water sample, requested for the above referenced project on 06/23/15. The sample was received on ice and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.



267710

CHAIN-OF-CUSTODY RECORD

(See Reverse for Instructions)

SERIAL NO.
15184

PROJECT NAME NEC

(PRINT)

PROJECT NUMBER 98007-99-2200

(SIGN)

RECORDER [Signature]

(SIGN)

SAMPLE CONTAINER DESCRIPTION CODES
 A. 40-ml VOA Vial
 B. Glass Litr
 C. Plastic 500-ml
 D. Plastic Litr

SAMPLE DESCRIPTION CODES
 A. Ground Water
 B. Surface Water
 C. Leachate
 D. Rinseate
 E. Soil/Sediment

SAMPLE CODES
 1. Standard
 2. 48 Hour
 3. 24 Hour
 4. Other

LABORATORY USE ONLY
 LAB PROJECT NO.

ANALYSIS REQUESTED

Field Filtered (check) X EPA POLYOMS

NUMBER OF CONTAINERS AND PRESERVATION

Unpreserved 3

HNO₃

HCL

Sample container (enter code) AA

Sample Description (enter code)

AVERAGE

TEMP °C

COND microhm/cm

pH

NO. DATE TIME SAMPLE ID

1 6-23-15 1200 253 NEC-01AE

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

NOTES / MISCELLANEOUS

Field / Container Temp.

RECEIVED BY: (Signature) [Signature] Date 6-23-15 Time

RECEIVED BY: (Signature) [Signature] Date 6/23/15 Time 1720

RECEIVED BY: (Signature) [Signature] Date

RECEIVED FOR LAB BY: (Signature) [Signature] Date

NO VOA HEADSPACE (Check)

SAMPLE STORE AT 4°C (Check)

MAXIMUM HOLDING TIME FOR METHOD REQUESTED

TAT REQUESTED (enter code)

RECEIVED BY: (Signature) [Signature] Date 6-23-15 Time 1400

RECEIVED BY: (Signature) [Signature] Date 6/23/15 Time 1400

RECEIVED BY: (Signature) [Signature] Date

RECEIVED FOR LAB BY: (Signature) [Signature] Date

CONTAINER SEALED WITH CUSTODY SEAL: Yes No

METHOD OF SHIPMENT

DESCRIPTION OF TRANSPORT CONTAINER

OTHER CHAINS-OF-CUSTODY TRANSPORTED WITH THIS CHAIN (BY SERIAL NO.)

DISPATCHED BY: (Signature) [Signature] Date 6-23-15 Time 1400

DISPATCHED BY: (Signature) [Signature] Date 6-23-15 Time 1400

DISPATCHED BY: (Signature) [Signature] Date 6-23-15 Time 1400

Send Lab Results to (Name): Nancy Jeanne LeFevre (Check Office Below) Verbal Requested: Yes No

MOUNTAIN VIEW • 299 FAIRCHILD DRIVE • MTN VIEW, CA 94043 • TEL (650) 960-1640 • FAX (650) 960-0739

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OTHER

TEL: _____ FAX: _____

WHITE: Laboratory Copy YELLOW: Project Copy PINK: Database Copy

REV 502

what on is with it

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 267710 Date Received 6/23/15 Number of coolers 1
 Client LOCUS Project MEC

Date Opened 6/23 By (print) BL (sign) [Signature]
 Date Logged in [Signature] By (print) L (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? _____ YES NO N/A

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO N/A

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO N/A

6. Indicate the packing in cooler: (if other, describe) _____
 Bubble Wrap Foam blocks Bags None
 Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C
 Type of ice used: Wet Blue/Gel None Temp(°C) 1.9

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO

If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO N/A

10. Are there any missing / extra samples? _____ YES NO N/A

11. Are samples in the appropriate containers for indicated tests? _____ YES NO N/A

12. Are sample labels present, in good condition and complete? _____ YES NO N/A

13. Do the sample labels agree with custody papers? _____ YES NO N/A

14. Was sufficient amount of sample sent for tests requested? _____ YES NO N/A

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO N/A

If YES, Who was called? _____ By _____ Date: _____

COMMENTS



Detections Summary for 267710

Results for any subcontracted analyses are not included in this summary.

Client : Locus Technologies
Project : 98007-99-2200
Location : NEC

Client Sample ID : 253NEC-01AE Laboratory Sample ID : 267710-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	9.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	59		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	66		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Tetrachloroethene	0.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Volatile Organics			
Lab #:	267710	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	253NEC-01AE	Batch#:	224509
Lab ID:	267710-001	Sampled:	06/23/15
Matrix:	Water	Received:	06/23/15
Units:	ug/L	Analyzed:	06/25/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	9.5	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	59	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	66	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	0.9	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	1.0	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-128
1,2-Dichloroethane-d4	112	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Volatile Organics			
Lab #:	267710	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	224509
Units:	ug/L	Analyzed:	06/25/15
Diln Fac:	1.000		

Type: BS Lab ID: QC793340

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	9.991	80	66-135
Trichloroethene	12.50	12.40	99	80-123
Chlorobenzene	12.50	12.36	99	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-128
1,2-Dichloroethane-d4	114	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC793341

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	9.744	78	66-135	3	24
Trichloroethene	12.50	12.05	96	80-123	3	20
Chlorobenzene	12.50	11.98	96	80-123	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-128
1,2-Dichloroethane-d4	112	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

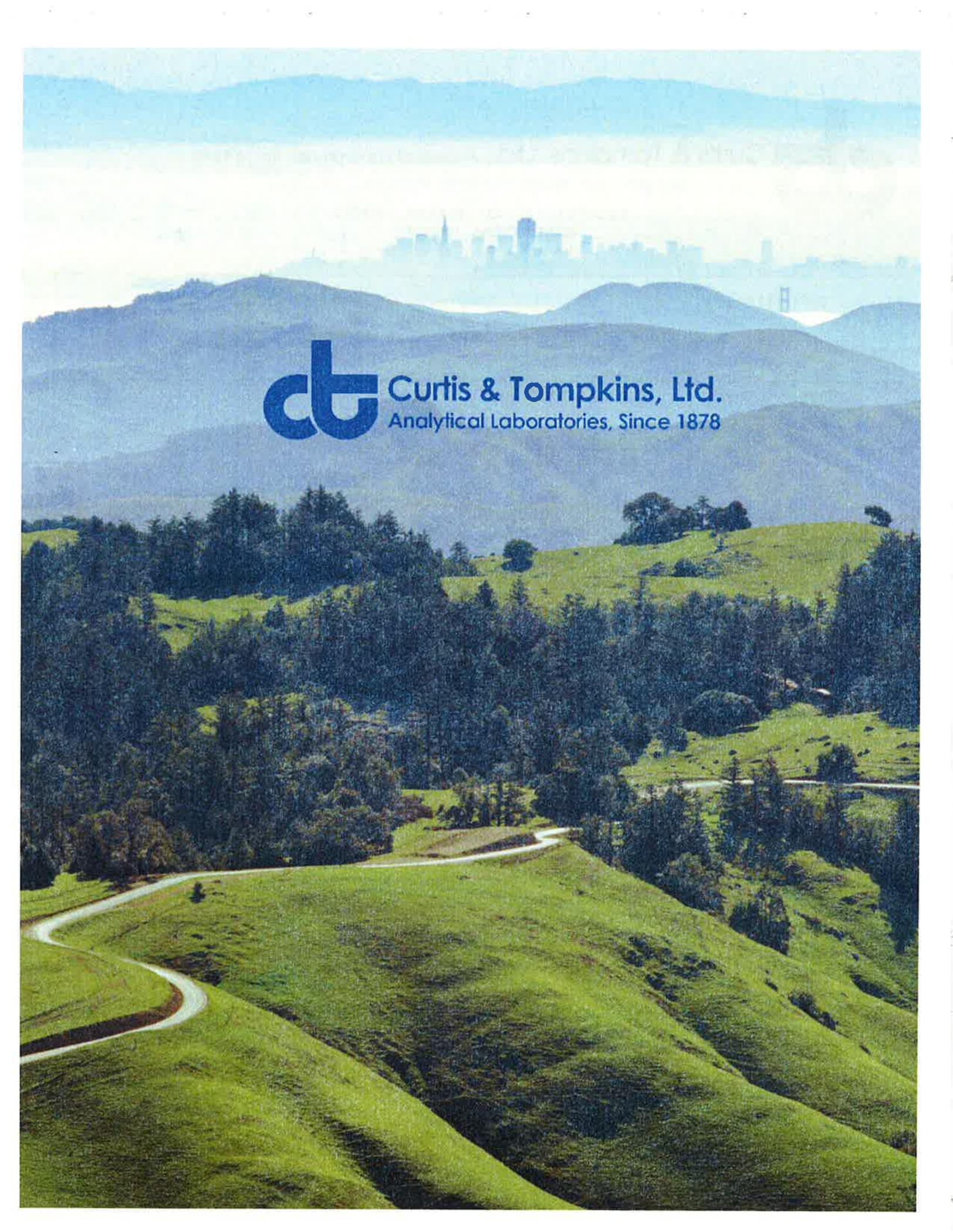
Batch QC Report

Volatile Organics			
Lab #:	267710	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC793342	Batch#:	224509
Matrix:	Water	Analyzed:	06/25/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-128
1,2-Dichloroethane-d4	113	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
 RL= Reporting Limit



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 269696
ANALYTICAL REPORT

Locus Technologies
299 Fairchild Dr.
Mountain View, CA 94043

Project : 98007-99-2200
Location : NEC
Level : II

Sample ID
254 NEC-01AE

Lab ID
269696-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 09/15/2015

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 269696
Client: Locus Technologies
Project: 98007-99-2200
Location: NEC
Request Date: 09/09/15
Samples Received: 09/09/15

This data package contains sample and QC results for one water sample, requested for the above referenced project on 09/09/15. The sample was received on ice and intact.

Volatile Organics by GC/MS (EPA 8260B):

No analytical problems were encountered.

CHAIN-OF-CUSTODY RECORD (See Reverse for Instructions)

SERIAL NO.
15192

PROJECT NAME NEC SAMPLERS _____ (PRINT)
 PROJECT NUMBER 98007-99-2200 RECORDER Linda Ocampo (SIGN)
 ANALYTICAL LAB C&T

NO.	DATE	TIME	SAMPLE ID	AVERAGE			pH	Field / Container Temp.
				TEMP °C	COND microhm/cm	COND microhm/cm		
1	9-8-15	1140	254/NEC-01AE					
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

ANALYSIS REQUESTED: _____
 TAT Requested (enter code): _____
 Method Requested: _____
 Sample Store at 4°C (Check) _____
 No VOA Headpace (Check) _____

RELEASING BY: (Signature) _____ Date 9/15 Time 1406
 RELINQUISHED BY: (Signature) _____ Date 9/15 Time 1826
 RELINQUISHED BY: (Signature) _____ Date _____ Time _____

RECEIVED BY: (Signature) _____ Date 9/15 Time 1406
 RECEIVED BY: (Signature) _____ Date _____ Time _____

Container Sealed with Custody Seal: Yes No
 Method of Shipment: _____ Description of Transport Container: _____
 Other Chains-of-Custody Transported with this Chain (by Serial No.): _____

Send Lab Results to (Name): Linda Ocampo (Check Office Below) Verbal Requested: Yes No
 MOUNTAIN VIEW • 299 FAIRCHILD DRIVE • MTN VIEW, CA 94043 • TEL (650) 960-1640 • FAX (650) 960-0739
 WALNUT CREEK • 1701 N. CALIFORNIA BLVD • WALNUT CREEK, CA 94596 • TEL (925) 906-8100 • FAX (925) 906-8101
 SACRAMENTO • 1100 MELODY LANE • ROSEVILLE, CA 95678 • TEL (916) 677-1751 • FAX (916) 677-1760
 OTHER _____ TEL _____ FAX _____

REV. 602
 mta on ice cold PL

WHITE: Laboratory Copy YELLOW: Project Copy PINK: Database Copy

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 269696 Date Received 9/9/15 Number of coolers 1
Client Lewis Project NEC

Date Opened 9/9 By (print) BL (sign) [Signature]
Date Logged in 9/10 By (print) BL (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... YES (circle) on cooler on samples NO
How many Name Date

2B. Were custody seals intact upon arrival? YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe)

- Bubble Wrap, Cloth material, Foam blocks, Cardboard, Bags, Styrofoam, None, Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 2.9

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are there any missing / extra samples? YES NO

11. Are samples in the appropriate containers for indicated tests? YES NO

12. Are sample labels present, in good condition and complete? YES NO

13. Do the sample labels agree with custody papers? YES NO

14. Was sufficient amount of sample sent for tests requested? YES NO

15. Are the samples appropriately preserved? YES NO N/A

16. Did you check preservatives for all bottles for each sample? YES NO N/A

17. Did you document your preservative check? YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? YES NO N/A

21. Was the client contacted concerning this sample delivery? YES NO

If YES, Who was called? By Date:

COMMENTS

Blank lines for handwritten comments.



Detections Summary for 269696

Results for any subcontracted analyses are not included in this summary.

Client : Locus Technologies
Project : 98007-99-2200
Location : NEC

Client Sample ID : 254 NEC-01AE Laboratory Sample ID : 269696-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	8.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	64		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	42		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Tetrachloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.8		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Volatile Organics

Lab #:	269696	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	254 NEC-01AE	Batch#:	227045
Lab ID:	269696-001	Sampled:	09/08/15
Matrix:	Water	Received:	09/09/15
Units:	ug/L	Analyzed:	09/10/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	8.5	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	64	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	42	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	0.6	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.8	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-128
1,2-Dichloroethane-d4	95	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	107	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Volatile Organics			
Lab #:	269696	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	227045
Units:	ug/L	Analyzed:	09/10/15
Diln Fac:	1.000		

Type: BS Lab ID: QC803129

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	13.73	110	66-135
Trichloroethene	12.50	13.41	107	80-123
Chlorobenzene	12.50	14.31	115	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	93	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	101	80-120

Type: BSD Lab ID: QC803130

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	13.85	111	66-135	1	24
Trichloroethene	12.50	13.85	111	80-123	3	20
Chlorobenzene	12.50	14.84	119	80-123	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	93	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-120

RPD= Relative Percent Difference

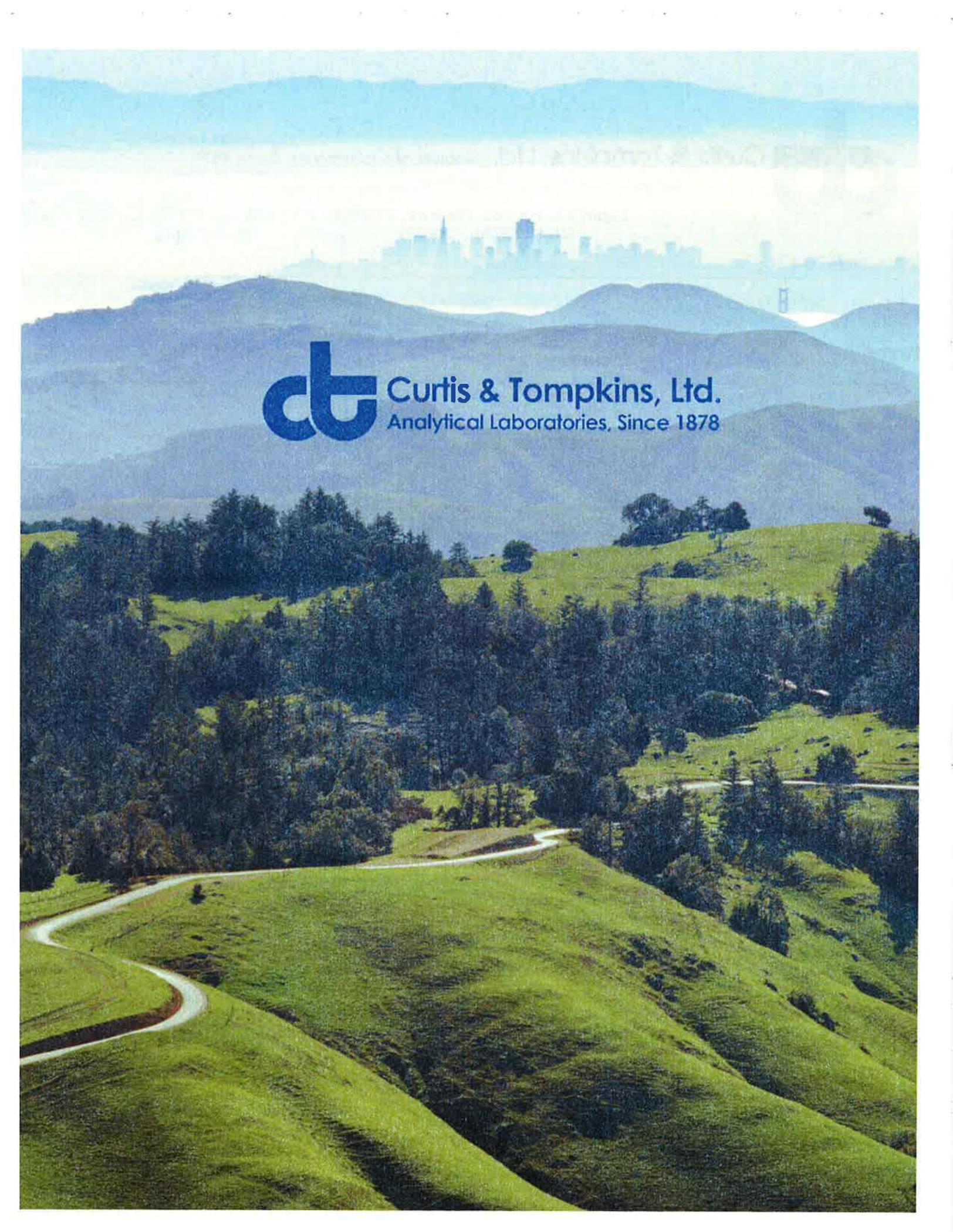
Batch QC Report

Volatile Organics			
Lab #:	269696	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC803131	Batch#:	227045
Matrix:	Water	Analyzed:	09/10/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	98	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	111	80-120

ND= Not Detected
 RL= Reporting Limit



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 271048
ANALYTICAL REPORT

Locus Technologies
299 Fairchild Dr.
Mountain View, CA 94043

Project : 98007-99-2200
Location : NEC
Level : II

Table with 2 columns: Sample ID and Lab ID. Rows include FIELD BLANK, FIELD DUPLICATE, NEC-PZ-1A, NEC-PZ-2A, NEC10A, NEC-11A, NEC12A, NEC1A, NEC20A, NEC21A, NEC22AE, NEC23A, NEC24A, NEC25A, NEC26A, NEC27AE, NEC28AE, NEC7A, NEC8A, NEC9A, and TRAVEL BLANK.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Dina Ali
Project Manager
dina.ali@ctberk.com

Date: 11/03/2015

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 271048
Client: Locus Technologies
Project: 98007-99-2200
Location: NEC
Request Date: 10/27/15
Samples Received: 10/27/15

This data package contains sample and QC results for twenty one water samples, requested for the above referenced project on 10/27/15. The samples were received on ice and intact.

Volatile Organics by GC/MS (EPA 8260B):

High surrogate recovery was observed for bromofluorobenzene in the method blank for batch 228903; no target analytes were detected in the sample. No other analytical problems were encountered.

21048

CTBERK
2323 Fifth Street
Berkeley CA
(510) 486-0900

Chain of Custody/Analysis Request

COC #: 2015-49
Page 1 of 2

Lab Use Only
Project No:
Job No:

Site Name: NEC
Location of Site: Mountain View CA

Samplers: Henry Castro
Project Number: 98007-99-2200

Analysis Turnaround Time:
24 Hour - 28 Days -
7 Days - 72 Hour -
14 Days - 10 Day -
21 Days - Other -

Sample ID	Sample Identification		Sample Date	Sample Time	Sample Type	Sample Matrix	# of Cont.	Preservation Used	Use for MS/MSD	Filtered Sample	Unfiltered Sample	8010 MS	Lab Sample Numbers
	Field Sample ID												
1	FIELD BLANK		10-24-15	N/A	BW	WATER	3	X		X			
2	FIELD DUPLICATE		10-24-15	N/A	GW	WATER	3	X		X			
3	NEC-PZ-1A		10-23-15	1300	GW	WATER	3	X		X			
4	NEC-PZ-2A		10-23-15	1205	GW	WATER	3	X		X			
5	NEC-PZ-3A				GW	WATER	3	X		X			
6	NEC10A		10-23-15	940	GW	WATER	3	X		X			
7	NEC11A		10-23-15	1015	GW	WATER	3	X		X			
8	NEC12A		10-24-15	1105	GW	WATER	3	X		X			
9	NEC1A		10-23-15	1040	GW	WATER	3	X		X			
10	NEC1AE				GW	WATER	3	X		X			
11	NEC20A		10-24-15	1005	GW	WATER	3	X		X			
12	NEC21A		10-24-15	1030	GW	WATER	3	X		X			
13	NEC22AE			1155	GW	WATER	3	X		X			
14	NEC23A			1440	GW	WATER	3	X		X			
15	NEC24A			1310	GW	WATER	3	X		X			
16	NEC25A			1230	GW	WATER	3	X		X			
17	NEC26A			1400	GW	WATER	3	X		X			

Special Instructions: Send Lab Results to Wes Hawthorne (hawthorne@locustec.com), Linda Ocampo (ocampo@locustec.com) and Nancy-Jeanne LeFevre (lefevre@locustec.com).

Relinquished by: <i>[Signature]</i>	Company: Locusts	Date/Time: 10-27-15 1555	Received by: <i>[Signature]</i>	Company: CAT
Relinquished by: <i>[Signature]</i>	Company: CAT	Date/Time: 10/27/15 1755	Received by: <i>[Signature]</i>	Company: CAT
Relinquished by:	Company:	Date/Time:	Received by:	Company:

noted see 10-27-15

CTBERK

2323 Fifth Street
Berkeley CA
(510) 486-0900

271098

Chain of Custody/Analysis Request

COC #: 2015-49

Page 2 of 2

Client Contact: (name, co., address)

Wes Hawthorne
Locus Technologies
299 Fairchild Drive
Mountain View CA 94043
415-663-4702

Samplers: Henry Castro

Project Number: 98007-99-2200

Analysis Turnaround Time:
24 Hour - 28 Days -
7 Days - 72 Hour -
14 Days - 10 Day -
21 Days - Other -

Site Name: NEC

Location of Site: Mountain View CA

Sample Identification

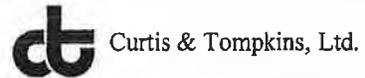
Lab Sample ID	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	# of Cont.	Preservation Used	Use for MS/MSD	Filtered Sample	Unfiltered Sample	8010 MS	Temperature *	Lab Sample Numbers
1	NEC2AE	10-24-15	925	GW	WATER	3	X	X	X	X	X		
2	NEC2BAE	10-24-15	935	GW	WATER	3	X	X	X	X	X		
3	NEC7A	10-23-15	1110	GW	WATER	3	X	X	X	X	X		
4	NEC8A		1230	GW	WATER	3	X	X	X	X	X		
5	NEC9A		1145	GW	WATER	3	X	X	X	X	X		
6	TRAVEL BLANK		N/A	BW	WATER	3	X	X	X	X	X		
	Temp Blank		N/A	BW	W	1						X	

* NOTE!
Temperature to be measured and recorded upon receipt of samples at lab. 13.05

Special Instructions: Send Lab Results to Wes Hawthorne (hawthornej@locustec.com), Linda Ocampo (ocampol@locustec.com) and Nancy-Jeanne Lefevre (lefevre@locustec.com).

Relinquished by: <i>[Signature]</i>	Company: Locus	Date/Time: 10-27-15/1755	Received by: <i>[Signature]</i>	Company: C&T
Relinquished by: <i>[Signature]</i>	Company: C&T	Date/Time: 10/27/15 1755	Received by: <i>[Signature]</i>	Company: C&T
Relinquished by:	Company:	Date/Time:	Received by:	Company:

COOLER RECEIPT CHECKLIST



Login # 271048 Date Received 10/27/15 Number of coolers 2
 Client Locus Tech Project NEC
 Date Opened 10/27 By (print) CN (sign) [Signature]
 Date Logged in 10/28 By (print) BL (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
 Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
- Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 1.3°, 0.5°

Temperature blank(s) included? Thermometer IR Gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO

If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? YES NO

12. Are sample labels present, in good condition and complete? YES NO

13. Do the sample labels agree with custody papers? YES NO

14. Was sufficient amount of sample sent for tests requested? YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO

If YES, Who was called? _____ By _____ Date: _____

COMMENTS

received 6 VOAs for 'NEC20A'

Detections Summary for 271048

Results for any subcontracted analyses are not included in this summary.

Client : Locus Technologies
 Project : 98007-99-2200
 Location : NEC

Client Sample ID : FIELD BLANK Laboratory Sample ID : 271048-001

No Detections

Client Sample ID : FIELD DUPLICATE Laboratory Sample ID : 271048-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	1.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,1-Dichloroethane	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	38		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	92		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC-PZ-1A Laboratory Sample ID : 271048-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	1.1		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	11		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	95		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC-PZ-2A Laboratory Sample ID : 271048-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	1.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	10		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	83		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC10A Laboratory Sample ID : 271048-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
cis-1,2-Dichloroethene	9.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	21		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC-11A Laboratory Sample ID : 271048-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
cis-1,2-Dichloroethene	4.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	29		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B



Client Sample ID : NEC12A Laboratory Sample ID : 271048-007

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
cis-1,2-Dichloroethene	18		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	2.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC1A Laboratory Sample ID : 271048-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	9.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	37		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	78		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Tetrachloroethene	1.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC20A Laboratory Sample ID : 271048-009

No Detections

Client Sample ID : NEC21A Laboratory Sample ID : 271048-010

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
cis-1,2-Dichloroethene	4.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	2.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC22AE Laboratory Sample ID : 271048-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	37		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	24		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC23A Laboratory Sample ID : 271048-012

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	1.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,1-Dichloroethane	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	38		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	93		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B



Client Sample ID : NEC24A

Laboratory Sample ID :

271048-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	3.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	48		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	34		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC25A

Laboratory Sample ID :

271048-014

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	1.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	5.4		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	33		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC26A

Laboratory Sample ID :

271048-015

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	0.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	71		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	3.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC27AE

Laboratory Sample ID :

271048-016

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	8.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	69		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC28AE

Laboratory Sample ID :

271048-017

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	12		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	32		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	72		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC7A

Laboratory Sample ID :

271048-018

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	13		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	60		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B



Client Sample ID : NEC8A

Laboratory Sample ID :

271048-019

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	0.8		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	4.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	78		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : NEC9A

Laboratory Sample ID :

271048-020

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
cis-1,2-Dichloroethene	40		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	2.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : TRAVEL BLANK

Laboratory Sample ID :

271048-021

No Detections

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	FIELD BLANK	Batch#:	228827
Lab ID:	271048-001	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	105	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected
 RL= Reporting Limit

Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	FIELD DUPLICATE	Batch#:	228885
Lab ID:	271048-002	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/30/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	1.3	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	0.6	0.5
1,1-Dichloroethane	0.7	0.5
cis-1,2-Dichloroethene	38	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	92	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-128
1,2-Dichloroethane-d4	122	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	105	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC-PZ-1A	Batch#:	228827
Lab ID:	271048-003	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	1.1	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	11	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	95	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-128
1,2-Dichloroethane-d4	112	75-139
Toluene-d8	81	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC-PZ-2A	Units:	ug/L
Lab ID:	271048-004	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Chloromethane	ND	1.0	1.000	228827	10/29/15
Vinyl Chloride	ND	0.5	1.000	228827	10/29/15
Bromomethane	ND	1.0	1.000	228827	10/29/15
Chloroethane	ND	1.0	1.000	228827	10/29/15
Trichlorofluoromethane	ND	1.0	1.000	228827	10/29/15
Freon 113	ND	2.0	1.000	228827	10/29/15
1,1-Dichloroethene	ND	0.5	1.000	228827	10/29/15
Methylene Chloride	ND	20	1.000	228827	10/29/15
trans-1,2-Dichloroethene	1,2	0.5	1.000	228827	10/29/15
1,1-Dichloroethane	ND	0.5	1.000	228827	10/29/15
cis-1,2-Dichloroethene	10	0.5	1.000	228827	10/29/15
Chloroform	ND	0.5	1.000	228827	10/29/15
1,1,1-Trichloroethane	ND	0.5	1.000	228827	10/29/15
Carbon Tetrachloride	ND	0.5	1.000	228827	10/29/15
1,2-Dichloroethane	ND	0.5	1.000	228827	10/29/15
Trichloroethene	83	1.0	2.000	228903	10/30/15
1,2-Dichloropropane	ND	0.5	1.000	228827	10/29/15
Bromodichloromethane	ND	0.5	1.000	228827	10/29/15
cis-1,3-Dichloropropene	ND	0.5	1.000	228827	10/29/15
trans-1,3-Dichloropropene	ND	0.5	1.000	228827	10/29/15
1,1,2-Trichloroethane	ND	0.5	1.000	228827	10/29/15
Tetrachloroethene	ND	0.5	1.000	228827	10/29/15
Dibromochloromethane	ND	0.5	1.000	228827	10/29/15
Chlorobenzene	ND	0.5	1.000	228827	10/29/15
Bromoform	ND	0.5	1.000	228827	10/29/15
1,1,2,2-Tetrachloroethane	ND	0.5	1.000	228827	10/29/15
1,3-Dichlorobenzene	ND	0.5	1.000	228827	10/29/15
1,4-Dichlorobenzene	ND	0.5	1.000	228827	10/29/15
1,2-Dichlorobenzene	ND	0.5	1.000	228827	10/29/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	110	80-128	1.000	228827	10/29/15
1,2-Dichloroethane-d4	107	75-139	1.000	228827	10/29/15
Toluene-d8	83	80-120	1.000	228827	10/29/15
Bromofluorobenzene	94	80-120	1.000	228827	10/29/15

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC10A	Batch#:	228827
Lab ID:	271048-005	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	9.7	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	21	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-128
1,2-Dichloroethane-d4	103	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC-11A	Batch#:	228827
Lab ID:	271048-006	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	4.5	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	29	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	110	75-139
Toluene-d8	85	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC12A	Batch#:	228827
Lab ID:	271048-007	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	18	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	2.9	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	104	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC1A	Units:	ug/L
Lab ID:	271048-008	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Chloromethane	ND	1.0	1.000	228827	10/29/15
Vinyl Chloride	ND	0.5	1.000	228827	10/29/15
Bromomethane	ND	1.0	1.000	228827	10/29/15
Chloroethane	ND	1.0	1.000	228827	10/29/15
Trichlorofluoromethane	ND	1.0	1.000	228827	10/29/15
Freon 113	ND	2.0	1.000	228827	10/29/15
1,1-Dichloroethene	0.6	0.5	1.000	228827	10/29/15
Methylene Chloride	ND	20	1.000	228827	10/29/15
trans-1,2-Dichloroethene	9.2	0.5	1.000	228827	10/29/15
1,1-Dichloroethane	ND	0.5	1.000	228827	10/29/15
cis-1,2-Dichloroethene	37	0.5	1.000	228827	10/29/15
Chloroform	ND	0.5	1.000	228827	10/29/15
1,1,1-Trichloroethane	ND	0.5	1.000	228827	10/29/15
Carbon Tetrachloride	ND	0.5	1.000	228827	10/29/15
1,2-Dichloroethane	ND	0.5	1.000	228827	10/29/15
Trichloroethene	78	1.0	2.000	228903	10/30/15
1,2-Dichloropropane	ND	0.5	1.000	228827	10/29/15
Bromodichloromethane	ND	0.5	1.000	228827	10/29/15
cis-1,3-Dichloropropene	ND	0.5	1.000	228827	10/29/15
trans-1,3-Dichloropropene	ND	0.5	1.000	228827	10/29/15
1,1,2-Trichloroethane	ND	0.5	1.000	228827	10/29/15
Tetrachloroethene	1.5	0.5	1.000	228827	10/29/15
Dibromochloromethane	ND	0.5	1.000	228827	10/29/15
Chlorobenzene	ND	0.5	1.000	228827	10/29/15
Bromoform	ND	0.5	1.000	228827	10/29/15
1,1,2,2-Tetrachloroethane	ND	0.5	1.000	228827	10/29/15
1,3-Dichlorobenzene	ND	0.5	1.000	228827	10/29/15
1,4-Dichlorobenzene	ND	0.5	1.000	228827	10/29/15
1,2-Dichlorobenzene	0.6	0.5	1.000	228827	10/29/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	108	80-128	1.000	228827	10/29/15
1,2-Dichloroethane-d4	107	75-139	1.000	228827	10/29/15
Toluene-d8	81	80-120	1.000	228827	10/29/15
Bromofluorobenzene	91	80-120	1.000	228827	10/29/15

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC20A	Batch#:	228826
Lab ID:	271048-009	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	118	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC21A	Batch#:	228826
Lab ID:	271048-010	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	4.5	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	2.9	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-128
1,2-Dichloroethane-d4	118	75-139
Toluene-d8	101	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC22AE	Batch#:	228826
Lab ID:	271048-011	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	1.0	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	37	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	24	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.7	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-128
1,2-Dichloroethane-d4	118	75-139
Toluene-d8	101	80-120
Bromofluorobenzene	98	80-120

ND= Not Detected
 RL= Reporting Limit

Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC23A	Batch#:	228885
Lab ID:	271048-012	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/30/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	1.2	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	0.6	0.5
1,1-Dichloroethane	0.7	0.5
cis-1,2-Dichloroethene	38	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	93	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	122	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	105	80-120

ND= Not Detected
 RL= Reporting Limit

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC24A	Batch#:	228826
Lab ID:	271048-013	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	3.0	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	48	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	34	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-128
1,2-Dichloroethane-d4	120	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC25A	Batch#:	228826
Lab ID:	271048-014	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	1.9	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	5.4	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	33	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.6	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-128
1,2-Dichloroethane-d4	120	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC26A	Batch#:	228826
Lab ID:	271048-015	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	0.9	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	71	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	3.0	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	113	80-128
1,2-Dichloroethane-d4	118	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected
 RL= Reporting Limit

Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC27AE	Batch#:	228826
Lab ID:	271048-016	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	1.0	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	8.3	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	69	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-128
1,2-Dichloroethane-d4	120	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC28AE	Batch#:	228826
Lab ID:	271048-017	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	12	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	32	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	72	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.5	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-128
1,2-Dichloroethane-d4	119	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected
 RL= Reporting Limit
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Volatile Organics

Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC7A	Batch#:	228826
Lab ID:	271048-018	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	0.5	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	13	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	60	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-128
1,2-Dichloroethane-d4	119	75-139
Toluene-d8	101	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
 RL= Reporting Limit

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC8A	Batch#:	228885
Lab ID:	271048-019	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/30/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	0.8	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	4.6	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	78	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-128
1,2-Dichloroethane-d4	122	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	103	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC9A	Batch#:	228885
Lab ID:	271048-020	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/30/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	40	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	2.5	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	121	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	TRAVEL BLANK	Batch#:	228827
Lab ID:	271048-021	Sampled:	10/23/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	106	75-139
Toluene-d8	82	80-120
Bromofluorobenzene	109	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	228826
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Type: BS Lab ID: QC810322

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	23.34	93	66-135
Trichloroethene	25.00	24.04	96	80-123
Chlorobenzene	25.00	24.33	97	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	119	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	94	80-120

Type: BSD Lab ID: QC810323

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.30	97	66-135	4	24
Trichloroethene	25.00	25.07	100	80-123	4	20
Chlorobenzene	25.00	25.42	102	80-123	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-128
1,2-Dichloroethane-d4	118	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC810324	Batch#:	228826
Matrix:	Water	Analyzed:	10/29/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	119	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	228827
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Type: BS Lab ID: QC810325

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.94	100	66-135
Trichloroethene	25.00	26.16	105	80-123
Chlorobenzene	25.00	25.73	103	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-128
1,2-Dichloroethane-d4	100	75-139
Toluene-d8	83	80-120
Bromofluorobenzene	89	80-120

Type: BSD Lab ID: QC810326

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.01	92	66-135	8	24
Trichloroethene	25.00	25.01	100	80-123	5	20
Chlorobenzene	25.00	25.56	102	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-128
1,2-Dichloroethane-d4	95	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC810327	Batch#:	228827
Matrix:	Water	Analyzed:	10/29/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-128
1,2-Dichloroethane-d4	105	75-139
Toluene-d8	81	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	NEC20A	Batch#:	228826
MSS Lab ID:	271048-009	Sampled:	10/24/15
Matrix:	Water	Received:	10/27/15
Units:	ug/L	Analyzed:	10/29/15
Diln Fac:	1.000		

Type: MS Lab ID: QC810480

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.1117	25.00	23.45	94	73-129
Trichloroethene	0.1134	25.00	25.73	102	73-123
Chlorobenzene	<0.1000	25.00	24.75	99	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	123	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	93	80-120

Type: MSD Lab ID: QC810481

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.46	98	73-129	4	25
Trichloroethene	25.00	25.85	103	73-123	0	20
Chlorobenzene	25.00	25.24	101	80-120	2	24

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	122	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	94	80-120

RPD= Relative Percent Difference

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	228885
Units:	ug/L	Analyzed:	10/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC810548

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	12.83	103	66-135
Trichloroethene	12.50	13.42	107	80-123
Chlorobenzene	12.50	13.88	111	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-128
1,2-Dichloroethane-d4	121	75-139
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-120

Type: BSD Lab ID: QC810549

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	12.05	96	66-135	6	24
Trichloroethene	12.50	13.09	105	80-123	2	20
Chlorobenzene	12.50	13.75	110	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-128
1,2-Dichloroethane-d4	122	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC810550	Batch#:	228885
Matrix:	Water	Analyzed:	10/30/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-128
1,2-Dichloroethane-d4	123	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Volatile Organics			
Lab #:	271048	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC810624	Batch#:	228903
Matrix:	Water	Analyzed:	10/30/15
Units:	ug/L		

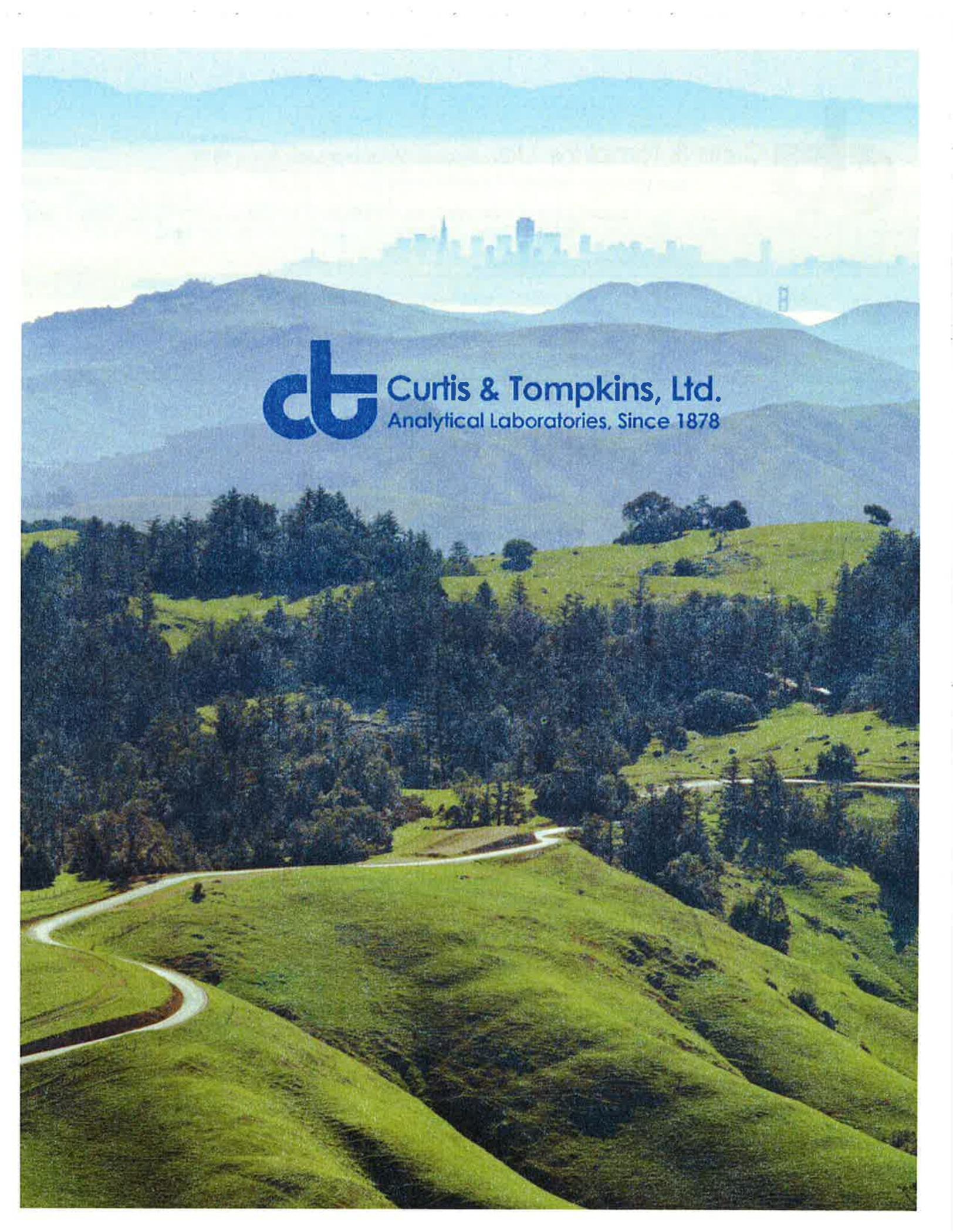
Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	82	75-139
Toluene-d8	94	80-120
Bromofluorobenzene	135 *	80-120

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 272449
ANALYTICAL REPORT

Locus Technologies
299 Fairchild Dr.
Mountain View, CA 94043

Project : 98007-99-2200
Location : NEC
Level : II

Sample ID
256 NEC-01AE

Lab ID
272449-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Dina Ali
Dina Ali
Project Manager
dina.ali@ctberk.com

Date: 12/21/2015

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 272449
Client: Locus Technologies
Project: 98007-99-2200
Location: NEC
Request Date: 12/14/15
Samples Received: 12/14/15

This data package contains sample and QC results for one water sample, requested for the above referenced project on 12/14/15. The sample was received on ice and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 272449 Date Received 12/14/15 Number of coolers 2
 Client Locus Tech Project NEC

Date Opened 12/14 By (print) CJN (sign) [Signature]
 Date Logged in ↓ By (print) SL (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? _____ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO

6. Indicate the packing in cooler: (if other, describe) _____
 Bubble Wrap Foam blocks Bags None
 Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C
 Type of ice used: Wet Blue/Gel None Temp(°C) 0.3° 0.9°

Temperature blank(s) included? Thermometer# 5 IR Gun# _____

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
 If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? (pH strip lot# _____) YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO
 If YES, Who was called? _____ By _____ Date: _____

COMMENTS



Detections Summary for 272449

Results for any subcontracted analyses are not included in this summary.

Client : Locus Technologies
Project : 98007-99-2200
Location : NEC

Client Sample ID : 256 NEC-01AE Laboratory Sample ID : 272449-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
trans-1,2-Dichloroethene	7.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	33		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	36		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichlorobenzene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Volatile Organics			
Lab #:	272449	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Field ID:	256 NEC-01AE	Batch#:	230397
Lab ID:	272449-001	Sampled:	12/14/15
Matrix:	Water	Received:	12/14/15
Units:	ug/L	Analyzed:	12/15/15
Diln Fac:	1.000		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	7.2	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	33	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	36	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.6	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	89	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	113	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Volatile Organics			
Lab #:	272449	Location:	NEC
Client:	Locus Technologies	Prep:	EPA 5030B
Project#:	98007-99-2200	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC816742	Batch#:	230397
Matrix:	Water	Analyzed:	12/15/15
Units:	ug/L		

Analyte	Result	RL
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-128
1,2-Dichloroethane-d4	93	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	117	80-120

ND= Not Detected
 RL= Reporting Limit

APPENDIX D

Annual Quality Assurance Report

Table D-1
Comparison of Analytical Laboratory Quality Control Results
2015 Annual Progress Report
501 Ellis Street, Mountain View, California

Method	Date Analyzed	Laboratory Batch Number	Analyte	Accuracy Spike % REC ⁽¹⁾	Accuracy Duplicate % REC ⁽¹⁾	Precision RPD ⁽²⁾
EPA 8260B Batch Spike	3/30/2015	221789	1,1-Dichloroethene	94	90	5
			Trichloroethene	100	95	5
			Chlorobenzene	107	102	5
EPA 8260B Batch Spike	6/25/2015	224509	1,1-Dichloroethene	80	78	3
			Trichloroethene	99	96	3
			Chlorobenzene	99	96	3
EPA 8260B Batch Spike	9/10/2015	227045	1,1-Dichloroethene	110	111	1
			Trichloroethene	107	111	3
			Chlorobenzene	115	119	4
EPA 8260B Batch Spike	10/29/2015	228826	1,1-Dichloroethene	93	97	4
			Trichloroethene	96	100	4
			Chlorobenzene	97	102	4
EPA 8260B Batch Spike	10/29/2015	228827	1,1-Dichloroethene	100	92	8
			Trichloroethene	105	100	5
			Chlorobenzene	103	102	1
EPA 8260B Matrix Spike	10/29/2015	228826	1,1-Dichloroethene	94	98	4
			Trichloroethene	102	103	0
			Chlorobenzene	99	101	2
EPA 8260B Batch Spike	10/30/2015	228885	1,1-Dichloroethene	103	96	6
			Trichloroethene	107	105	2
			Chlorobenzene	111	110	1
EPA 8260B Batch Spike	10/30/2015	228903	1,1-Dichloroethene	116	101	14
			Trichloroethene	108	99	9
			Chlorobenzene	119	107	10
EPA 8260B Batch Spike	12/15/2015	230397	1,1-Dichloroethene	111	100	10
			Trichloroethene	102	95	7
			Chlorobenzene	106	98	8
Project Average				103	100	4.9
Project Goals				40-150	40-150	<35

Notes:

(1) % REC = Percent recovery

(2) RPD = Relative percent difference between the batch spike and batch spike duplicate.

Table D-2
Summary of Blank Sample Results
2015 Annual Progress Report
501 Ellis Street, Mountain View, California

Blank Type	Date Sampled	Method	Laboratory Batch Number	Blank ID	Contaminant	Concentration	Reporting Limit (µg/L)
Trip	3/30/2015	EPA 624	221789	265691-002	--	ND	0.5 - 10
	6/23/2015	EPA 624	224509	267711-002	--	ND	0.5 - 10
	12/14/2015	EPA 624	230397	272447-002	--	ND	0.5 - 10
Field	10/24/2015	EPA 8260B	228827	271048-001	--	ND	0.5 - 20
Travel	10/23/2015	EPA 8260B	228827	271048-021	--	ND	0.5 - 20
Lab Blank	3/30/2015	EPA 8260B	221789	QC782473	--	ND	0.5 - 20
	6/23/2015	EPA 8260B	224509	QC793342	--	ND	0.5 - 20
		EPA 624					0.5 - 10
	9/10/2015	EPA 8260B	227045	QC803131	--	ND	0.5 - 20
		EPA 624					0.5 - 10
	10/29/2015	EPA 8260B	228826	QC810324	--	ND	0.5 - 20
	10/29/2015	EPA 8260B	228827	QC810327	--	ND	0.5 - 20
	10/30/2015	EPA 8260B	228885	QC810550	--	ND	0.5 - 20
	10/30/2015	EPA 8260B	228903	QC810624	--	ND	0.5 - 20
12/15/2015	EPA 8260B	2302397	QC816742	--	ND	0.5 - 20	
	EPA 624					0.5 - 10	

Notes:

ND = Non detect

µg/L = micrograms per liter

Table D-3
Duplicate Quality Control Results
2015 Annual Progress Report
501 Ellis Street, Mountain View, California

Groundwater Monitoring Wells

Sample Date	Contaminant	NEC23A (271048-012) (µg/L)	DUPLICATE (271048-002) (µg/L)	RPD¹ %
10/24/2015	<i>cis</i> -1,2-Dichloroethene	38	38	0.0
	<i>trans</i> -1,2-Dichloroethene	0.6	0.6	0.0
	1,1-dichloroethane	0.7	0.7	0.0
	1,1-dichloroethene	1.2	1.3	8.0
	Trichloroethene	93	92	1.1
Project Average		--	--	1.8
Project Goals		--	--	<35

Notes:

¹ RPD = relative percent difference = $|X_1 - X_2| / X_3 \times 100$

where:

X_1 = concentration of the sample

X_2 = concentration of the duplicate

X_3 = average of X_1 and X_2

- Project average RPD is below project goals (RPD = 30.8%)

µg/L - micrograms per liter

APPENDIX E
VOC Concentration
Mann-Kendall Trend Analysis

Table E-1
Mann Kendall Statistical Test Summary Table
501 Ellis Street, Mountain View, CA

Well	2015 VOC Data			Trend through 2015 (90% CL)		
	TCE	cDCE	VC	TCE	cDCE	VC
NEC-1A	78	37	< 0.5	Decreasing	Increasing	<RL
NEC-1AE	36	33	< 0.5	Decreasing	Increasing	<RL
NEC-7A	60	13	< 0.5	No Trend	No Trend	<RL
NEC-8A	78	4.6	< 0.5	Decreasing	No Trend	<RL
NEC-9A	2.5	40	< 0.5	Decreasing	Decreasing	<RL
NEC-10A	21	9.7	< 0.5	Decreasing	Increasing	<RL
NEC-11A	29	4.5	< 0.5	Decreasing	Increasing	<RL
NEC-12A	2.9	18	< 0.5	No Trend	No Trend	<RL
NEC-20A	< 0.5	< 0.5	< 0.5	No Trend	No Trend	<RL
NEC-21A	2.9	4.5	< 0.5	Decreasing	Decreasing	<RL
NEC-22A	24	37	< 0.5	Decreasing	Decreasing	<RL
NEC-23A	93	38	< 0.5	No Trend	No Trend	<RL
NEC-24A	34	48	< 0.5	Decreasing	Increasing	<RL
NEC-25A	33	5.4	< 0.5	Decreasing	Decreasing	<RL
NEC-26A	3.0	71	< 0.5	No Trend	Increasing	<RL
NEC-27AE	69	8.3	< 0.5	Decreasing	Decreasing	<RL
NEC-28AE	72	32	< 0.5	Decreasing	Increasing	<RL
NEC-PZ-1A	95	11	< 0.5	Increasing	No Trend	<RL
NEC-PZ-2A	83	10	< 0.5	Increasing	Increasing	<RL
NEC-PZ-3A	NS	NS	NS	Decreasing	No Trend	NS

Notes:

VOC = volatile organic compound

CL = confidence limit

TCE = trichloroethene

cDCE = cis-1,2-dichloroethene

VC = vinyl chloride

<RL = concentrations below reporting limits

NS = not sampled

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
<p>Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.</p> <p>Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.</p>							
Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC1A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	28-Nov-06	260	6.2				
2	29-Nov-07	64	9.9				
3	4-Dec-08	150	8.9				
4	18-Dec-09	79	14				
5	21-Dec-10	83	23				
6	11-Oct-11	74	28				
7	9-Oct-12	58	37				
8	15-Oct-13	64	41				
9	24-Oct-14	55	36				
10	24-Oct-15	78	37				
Mann Kendall Statistic (S) =		-22.0	36.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		96.50	24.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		63.463	13.464	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.658	0.559	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
<p>Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.</p> <p>Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.</p>							
Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC1AE		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	27-Nov-06	200	17				
2	12-Nov-07	190	18				
3	4-Dec-08	160	20				
4	16-Dec-09	38	22				
5	13-Dec-10	49	27				
6	12-Dec-11	43	35				
7	17-Dec-12	40	38				
8	16-Dec-13	56	47				
9	18-Dec-14	96	54				
10	14-Dec-15	36	33				
Mann Kendall Statistic (S) =		-21.0	37.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		90.80	31.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		66.829	12.635	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.736	0.406	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC7A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	21-Nov-06	73	12				
2	27-Nov-07	72	11				
3	2-Dec-08	66	10				
4	21-Dec-09	61	10				
5	21-Dec-10	75	14				
6	11-Oct-11	92	15				
7	9-Oct-12	77	15				
8	15-Oct-13	96	17				
9	24-Oct-14	79	11				
10	23-Oct-15	60	13				
Mann Kendall Statistic (S) =		9.0	14.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		75.10	12.80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		11.855	2.394	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.158	0.187	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		CV ≤ 1 STABLE	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin			Mann-Kendall Statistical Test				
Department of Natural Resources			Form 4400-215 (2/2001)				
Remediation and Redevelopment Program							
<p>Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.</p> <p>Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.</p>							
Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC8A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)					
1	21-Nov-06	130	9.2				
2	27-Nov-07	120	10				
3	2-Dec-08	120	11				
4	21-Dec-09	120	9.9				
5	20-Dec-10	85	6.9				
6	11-Oct-11	97	10				
7	9-Oct-12	110	11				
8	15-Oct-13	110	12				
9	24-Oct-14	100	9.3				
10	23-Oct-15	78	4.6				
Mann Kendall Statistic (S) =		-27.0	-1.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		107.00	9.39	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		16.760	2.165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.157	0.231	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	No Trend	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	CV ≤ 1 STABLE	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC9A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	21-Nov-06	31	64				
2	27-Nov-07	22	52				
3	2-Dec-08	15	55				
4	21-Dec-09	9.3	54				
5	21-Dec-10	2.7	45				
6	11-Oct-11	3.6	39				
7	9-Oct-12	3.7	43				
8	15-Oct-13	3	40				
9	25-Oct-14	2.2	31				
10	23-Oct-15	2.5	40				
Mann Kendall Statistic (S) =		-35.0	-32.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		9.50	46.30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		10.044	9.776	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		1.057	0.211	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC10A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	21-Nov-06	27	6.2				
2	27-Nov-07	27	6.2				
3	2-Dec-08	28	8.2				
4	18-Dec-09	25	8.9				
5	21-Dec-10	23	8.6				
6	11-Oct-11	22	5.1				
7	9-Oct-12	19	7.1				
8	15-Oct-13	20	9.2				
9	24-Oct-14	20	6.7				
10	23-Oct-15	21	9.7				
Mann Kendall Statistic (S) =		-29.0	16.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		23.20	7.59	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		3.327	1.537	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.143	0.202	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16		Checked By = DK		

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC11A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	22-Nov-05	31	2.4				
2	27-Nov-06	26	2.4				
3	28-Nov-07	27	2.5				
4	3-Dec-08	26	2.8				
5	22-Dec-10	22	2.8				
6	11-Oct-11	22	2.8				
7	9-Oct-12	22	3.5				
8	15-Oct-13	22	3.7				
9	24-Oct-14	21	2.5				
10	23-Oct-15	29	4.5				
Mann Kendall Statistic (S) =		-20.0	30.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		24.80	2.99	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		3.490	0.694	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.141	0.232	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC12A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	22-Nov-05	13	5.2				
2	27-Nov-06	12	5.4				
3	28-Nov-07	0.8	2.7				
4	3-Dec-08	34.36	5.2				
5	22-Dec-10	0.6	2				
6	11-Oct-11	1.2	2.5				
7	15-Oct-12	1.2	4.9				
8	14-Oct-13	1.6	9.1				
9	24-Oct-14	1.6	7.5				
10	24-Oct-15	2.9	18				
Mann Kendall Statistic (S) =		-1.0	14.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		6.93	6.25	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		10.705	4.681	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		1.546	0.749	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		CV > 1 NON-STABLE	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC20A		
Compound ->		TCE					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	22-Nov-05	0.8					
2	27-Nov-06	0.8					
3	28-Nov-07	1.2					
4	3-Dec-08	0.6					
5	22-Dec-10	1.6					
6	11-Oct-11	1.3					
7	15-Oct-12	1.1					
8	14-Oct-13	0.5					
9	24-Oct-14	0.6					
10	24-Oct-15	0.5					
Mann Kendall Statistic (S) =		-14.0	0.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	0	0	0	0	0
Average =		0.90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		0.380	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.422	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected			n<4	n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	n<4	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	n<4	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	n<4	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16		Checked By = DK		

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin			Mann-Kendall Statistical Test				
Department of Natural Resources			Form 4400-215 (2/2001)				
Remediation and Redevelopment Program							
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC21A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)					
1	27-Nov-06	29	50				
2	28-Nov-07	24	43				
3	3-Dec-08	4.7	21				
4	22-Dec-09	5.8	29				
5	22-Dec-10	5.6	18				
6	11-Oct-11	4	15				
7	15-Oct-12	4.4	13				
8	14-Oct-13	3.1	6.1				
9	24-Oct-14	3	3.5				
10	24-Oct-15	2.9	4.5				
Mann Kendall Statistic (S) =		-39.0	-41.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		8.65	20.31	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		9.535	15.964	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		1.102	0.786	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC22A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	27-Nov-06	94	40				
2	28-Nov-07	75	39				
3	3-Dec-08	74	39				
4	22-Dec-09	41	48				
5	22-Dec-10	63	42				
6	11-Oct-11	22	24				
7	15-Oct-12	26	28				
8	14-Oct-13	25	28				
9	24-Oct-14	17	20				
10	24-Oct-15	24	37				
Mann Kendall Statistic (S) =		-35.0	-19.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		46.10	34.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		27.859	8.947	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.604	0.259	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD		Date = 17-Mar-16		Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC23A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	27-Nov-06	84	36				
2	28-Nov-07	82	34				
3	3-Dec-08	92	27				
4	22-Dec-09	84	34				
5	22-Dec-10	82	24				
6	11-Oct-11	83	30				
7	15-Oct-12	81	28				
8	14-Oct-13	87	37				
9	24-Oct-14	91	29				
10	24-Oct-15	93	38				
Mann Kendall Statistic (S) =		11.0	4.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		85.90	31.70	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		4.533	4.739	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.053	0.149	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		INCREASING	No Trend	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	CV ≤ 1 STABLE	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC24A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	22-Nov-05	91	35				
2	27-Nov-06	71	36				
3	28-Nov-07	64	29				
4	3-Dec-08	52	35				
5	22-Dec-10	53	35				
6	11-Oct-11	35	38				
7	15-Oct-12	45	49				
8	14-Oct-13	39	51				
9	24-Oct-14	38	44				
10	24-Oct-15	34	48				
Mann Kendall Statistic (S) =		-37.0	26.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		52.20	40.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		18.420	7.439	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.353	0.186	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16		Checked By = DK		

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin			Mann-Kendall Statistical Test				
Department of Natural Resources			Form 4400-215 (2/2001)				
Remediation and Redevelopment Program							
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC25A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)					
1	27-Nov-06	48	13				
2	28-Nov-07	43	13				
3	3-Dec-08	39	7.4				
4	22-Dec-09	35	9.9				
5	22-Dec-10	40	5.7				
6	11-Oct-11	31	6.2				
7	15-Oct-12	34	5.8				
8	14-Oct-13	33	8.4				
9	24-Oct-14	34	4.6				
10	24-Oct-15	33	5.4				
Mann Kendall Statistic (S) =		-29.0	-28.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		37.00	7.94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		5.375	3.087	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.145	0.389	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD		Date = 17-Mar-16		Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin			Mann-Kendall Statistical Test			
Department of Natural Resources			Form 4400-215 (2/2001)			
Remediation and Redevelopment Program						
<p>Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.</p> <p>Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.</p>						
Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC26A	
Compound ->		TCE	c,1,2, DCE			
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)				
1	27-Nov-06	99	3.6			
2	28-Nov-07	99	3.4			
3	3-Dec-08	94	3.4			
4	22-Dec-09	180	5.6			
5	22-Dec-10	130	3			
6	11-Oct-11	140	5.6			
7	15-Oct-12	120	4.9			
8	14-Oct-13	160	7.5			
9	24-Oct-14	91	3.8			
10	24-Oct-15	3	71			
Mann Kendall Statistic (S) =		-6.0	19.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0
Average =		111.60	11.18	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		48.399	21.065	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.434	1.884	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	INCREASING	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	INCREASING	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		CV ≤ 1 STABLE	NA	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16		Checked By = DK	

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC27AE		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	27-Nov-06	120	10				
2	12-Nov-07	100	12				
3	4-Dec-08	100	12				
4	18-Dec-09	94	10				
5	22-Dec-10	88	10				
6	11-Oct-11	88	8.8				
7	9-Oct-12	96	11				
8	15-Oct-13	90	11				
9	24-Oct-14	89	7.7				
10	24-Oct-15	69	8.3				
Mann Kendall Statistic (S) =		-29.0	-18.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		93.40	10.08	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		12.851	1.474	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.138	0.146	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	DECREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16		Checked By = DK		

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NEC28AE		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	27-Nov-06	94	23				
2	12-Nov-07	85	23				
3	4-Dec-08	95	26				
4	18-Dec-09	99	29				
5	22-Dec-10	80	23				
6	11-Oct-11	91	27				
7	9-Oct-12	72	30				
8	15-Oct-13	80	28				
9	24-Oct-14	70	44				
10	24-Oct-15	72	32				
Mann Kendall Statistic (S) =		-25.0	30.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		83.80	28.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		10.602	6.276	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.127	0.220	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin			Mann-Kendall Statistical Test				
Department of Natural Resources			Form 4400-215 (2/2001)				
Remediation and Redevelopment Program							
<p>Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.</p> <p>Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.</p>							
Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NECPZ1A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)					
1	21-Nov-06	20	6.7				
2	27-Nov-07	34	7.1				
3	2-Dec-08	50	7.1				
4	21-Dec-09	48	5.8				
5	22-Dec-10	51	5				
6	24-Oct-11	54	3.5				
7	9-Oct-12	64	8.1				
8	14-Oct-13	86	9.1				
9	24-Oct-14	60	3.3				
10	23-Oct-15	95	11				
Mann Kendall Statistic (S) =		39.0	4.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		56.20	6.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		22.135	2.404	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.394	0.360	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		INCREASING	No Trend	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		INCREASING	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	CV ≤ 1 STABLE	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NECP22A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	21-Nov-06	22	6.9				
2	27-Nov-07	20	7.5				
3	2-Dec-08	20	9.3				
4	21-Dec-09	24	12				
5	20-Dec-10	34	13				
6	24-Oct-11	31	12				
7	9-Oct-12	34	19				
8	14-Oct-13	36	18				
9	25-Oct-14	83	8.9				
10	23-Oct-15	83	10				
Mann Kendall Statistic (S) =		36.0	18.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		10	10	0	0	0	0
Average =		38.70	11.66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		24.106	4.110	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.623	0.352	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		INCREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		INCREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

VOC Concentration Trend Analysis
501 Ellis Street, Mountain View, California

Geosyntec Consultants

State of Wisconsin Department of Natural Resources Remediation and Redevelopment Program			Mann-Kendall Statistical Test Form 4400-215 (2/2001)				
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Site Name = NEC - 501 Ellis Street			BRRTS No. =		Well Number = NECPZ3A		
Compound ->		TCE	c,1,2, DCE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	21-Nov-06	98	12				
2	27-Nov-07	87	12				
3	2-Dec-08	77	12				
4	21-Dec-09	66	11				
5	20-Dec-10	58	11				
6	24-Oct-11	49	22				
7	9-Oct-12	52	15				
8	14-Oct-13	50	21				
9	24-Oct-14	47	9.9				
10	23-Oct-15						
Mann Kendall Statistic (S) =		-32.0	0.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =		9	9	0	0	0	0
Average =		64.89	13.99	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =		18.510	4.483	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=		0.285	0.320	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		DECREASING	No Trend	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		DECREASING	No Trend	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	CV ≤ 1 STABLE	n<4	n<4	n<4	n<4
Data Entry By = LD			Date = 17-Mar-16	Checked By = DK			

APPENDIX F

Wastewater Discharge Permit

WASTEWATER DISCHARGE PERMIT

THE FIRM OR CORPORATION NAMED HEREIN IS AUTHORIZED TO DISCHARGE REGULATED WASTEWATER INTO THE SANITARY SEWER IN ACCORDANCE WITH ALL CONDITIONS IN THIS PERMIT AND CHAPTER 35 OF THE MOUNTAIN VIEW CITY CODE.

Permitted **501 Ellis Street Groundwater Extraction System**
 Facility **501 Ellis Street**

501 Ellis Street Groundwater Extraction System
 595 Market Street, Suite 610
 San Francisco, CA 94105
 Attn: Eric Suchomel-Geosyntec Consultants

Date Issued: **4/15/2015**
 Effective Date: **4/22/2015**
 Date Revised:
 Date Expires: **5/1/2018**
 Permit ID: **925**

Jaymae Wentker
 Jaymae Wentker, Fire Marshal

EPA Category/Subcategory:
 Reference:

POST IN A CONSPICUOUS PLACE AT THE "PERMITTED FACILITY" SITE

I. Discharge Limitations:

Process Discharge (industrial waste) shall not exceed 9,560 Gallons Per Day (GPD).
 (Location A1: 9560 GPD)
 Total Discharge (industrial and domestic waste) shall not exceed 9,560 Gallons Per Day (GPD).

II. Special Conditions/Requirements:

- 1 Discharge quantity shall not exceed 9,560 gpd.
- 2 STO/TTO samples shall be analyzed using EPA method 601/602 or 624 (see section XIII).
- 3 Sample results shall be submitted to the City upon receipt.

III. Self-Monitoring Sampling Analysis:

Pollutant	Sampling Frequency	Sample Type	Sampling Location(s)*	Federal Maximum for any 1 day (mg/L)	Federal Avg. of daily values for 30 consec.days (mg/L)	Local Limit (mg/L)
Single Toxic Organic	Quarterly	Grab	A1	NA	NA	.75
Total Dissolved Solids	Quarterly	Grab	A1	No Limit	No Limit	10000
Total Toxic Organics	Quarterly	Grab	A1	NA	NA	1

*Sampling Location A1 is in the northwest corner of the treatment pad.

IV. Wastewater Discharge Limits: (MVCC 35.32.12 & CFR 40)

Your industrial wastewater effluent shall not exceed the following limits:

Discharge Parameter	Federal Max. for any 1 day	Federal Avg. of daily values for 30 consecutive days	Local ³	Discharge Parameter	Federal Max. for any 1 day	Federal Avg. of daily values for 30 consecutive days	Local ³
Arsenic	No Limit	No Limit	0.1 mg/L ¹	Manganese	No Limit	No Limit	1.0 mg/L ¹
Barium	No Limit	No Limit	5.0 mg/L ¹	Mercury ²	No Limit	No Limit	0.01 mg/L ²
Beryllium	No Limit	No Limit	0.75 mg/L ¹	Nickel	No Limit	No Limit	0.5 mg/L
Boron	No Limit	No Limit	1.0 mg/L ¹	Oil & Grease	No Limit	No Limit	200 mg/L
Cadmium	No Limit	No Limit	0.1 mg/L ¹	Phenols	No Limit	No Limit	1.0 mg/L
Chromium Hex.	No Limit	No Limit	1.0 mg/L ¹	pH	No Limit	No Limit	5.0-11
Chromium, Total	No Limit	No Limit	2.0 mg/L ¹	Selenium	No Limit	No Limit	1.0 mg/L ¹
Cobalt	No Limit	No Limit	1.0 mg/L ¹	Silver, Photo	No Limit	No Limit	0.50 mg/L
Copper ⁴	No Limit	No Limit	2.0 mg/L ¹	Silver, Non-Photo	No Limit	No Limit	0.25 mg/L
Copper	No Limit	No Limit	0.25 mg/L	Single Toxic Organic	No Limit	No Limit	0.75 mg/L
Cyanide	No Limit	No Limit	0.5 mg/L ¹	Suspended Solids	No Limit	No Limit	6000 mg/L
Fluoride	No Limit	No Limit	65 mg/L	Total Dissolved Solid	No Limit	No Limit	10000 mg/L
Formaldehyde	No Limit	No Limit	5.0 mg/L ¹	Total Toxic Organics ⁵	No Limit	No Limit	1.0 mg/L
Lead	No Limit	No Limit	0.5 mg/L ¹	Zinc ⁶	No Limit	No Limit	2.0 mg/L ¹

¹If the daily discharge (averaged over a one year period) at any single sampling location exceeds 50,000 gpd, the local discharge limit for that location shall not exceed ONE-HALF (1/2) of the local limit listed above.

²Dental facilities using mercury-containing amalgam shall not exceed a local discharge limit of 0.05 mg/L for mercury.

³These limits refer to either grab or 24-hour composite samples.

⁴This limit applies only to the following EPA categories: Non-EPA Non-SIUs, Metal Finishing (Copper), and Electroplating. This limit also applies to cooling towers discharging < 2,000 gpd at any facility.

⁵See Section XIII of this permit for a list of components of Total Toxic Organics.

⁶Vehicle service facilities shall not exceed a local discharge limit of 4.0 mg/L for zinc.

V. Quality Assurance/Quality Control: (MVCC 35.32.13 & 40 CFR 136)

All metals samples must be collected in duplicate and stored and preserved until the next sampling event for that parameter. The duplicate sample must be labeled as a duplicate and made available to any City inspector.

VI. Sample Collection and Analysis: (MVCC 35.32.13.3, 40 CFR 403.12(g)&(h), 40 CFR 136)

All metals shall be collected as specified in the individual permit requirements. Cyanide and Total Toxic Organics (TTO) shall always be collected as grab samples. Samples shall be analyzed by an analytical laboratory approved by the State of Cal. Dept. of Health Services. Sample collection, preservation, and analysis shall be in accordance with EPA regulations (40 CFR 136) and the City of Mountain View's "Sample Collection, Analysis and Reporting Instructions".

VII. Violation Reporting & Follow-Up: (MVCC 35.32.6.2 & 40 CFR 403.12(f) & (g))

If the results of sampling or pH analysis exceed applicable limit(s), or any discharges meet the definition of hazardous waste, you shall:

- 1) VERBALLY NOTIFY THE CITY OF MOUNTAIN VIEW AT 650-903-6378 AND THE PALO ALTO WATER QUALITY CONTROL PLANT AT 650-329-2598 WITHIN 24 HOURS of knowledge of the violation. If an accidental discharge, slug discharge, or upset or failure of the pretreatment system occurs, verbal notification shall be made within 15 minutes of knowledge of the condition;
- 2) SUBMIT A WRITTEN REPORT WITHIN 15 WORKING DAYS of knowledge of the violation explaining: the cause, nature volume and duration of the violation, and mitigation measures taken to correct it and prevent reoccurrence;
- 3) INITIATE A SAMPLING/ANALYSIS PROGRAM demonstrating up to 21 consecutive days of compliance. The first sample result shall be submitted within 30 days of becoming aware of the violation.

VIII. Penalty Provisions: (MVCC 35.32.15)

Any person who violates any provision of this permit, "Notice of Violation", or Chapter 35 MVCC, may be subject to criminal, civil, or administrative penalties. Civil penalties shall not exceed \$25,000/day per violation. Administrative penalties shall not exceed the following: (1) \$2,000/day for failing or refusing to furnish technical or monitoring reports; (2) \$3,000/day for failing or refusing to comply with a compliance schedule; (3) \$5,000/day/violation for discharges in violation of any waste discharge limitation, permit condition, or requirement; and (4) \$10/gallon for discharges in violation of any suspension, cease and desist order, or any prohibition issued by the City.

IX. Record-Keeping Requirements: (40 CFR 403.12(o))

All Industrial Users shall maintain records for all information resulting from any monitoring activities conducted. Such records shall include for all samples:

- 1) The date, exact place, method, and time of sampling and the names of the person or persons taking the samples;
- 2) The dates analyses were performed;
- 3) Who performed the analyses;
- 4) The analytical techniques/methods used; and
- 5) The results of such analysis.

All Industrial Users shall maintain for a minimum of 3 years any records of monitoring activities and results, and shall make such records available for inspection and copying by the City of Mountain View and Palo Alto Water Quality Control Plant. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Industrial User or the operation of the POTW Pretreatment Program or when requested by the Director or the Regional Administrator.

X. Notification of Changed Discharge: (40 CFR 403.12(j))

All Industrial Users shall promptly notify the City of Mountain View at 650-903-6378 and the Palo Alto Water Quality Control Plant at 650-329-2598 in advance of any substantial change in the volume or character of pollutants in their discharge, including the characteristic hazardous wastes for which the Industrial User has submitted initial notification under 40 CFR 403.12(p).

XI. Notification of Bypass: (40 CFR 403.17(c)(2))

All Industrial Users shall verbally notify the City of Mountain View at 650-903-6378 and Palo Alto Water Quality Control Plant at 650-329-2598 of an unanticipated bypass (intentional diversion of its wastestream from the treatment facility) within 24 hours from the time the Industrial User becomes aware of the bypass. A written submission shall also be provided within 5 days of the time the Industrial User becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

XII. Transferability of Permit: (MVCC 35.32.2.4)

This permit is not transferable without prior written notification to and approval by the City and the assumption of all permit conditions by the new owner/operator.

XIII. Definition of Total Toxic Organics: (40 CFR 469.12)

The term "total toxic organics" (TTO) means the sum of the concentrations for each of the following toxic organic components found in the discharge at a concentration greater than ten (10) micrograms per liter. The facility's local TTO and STO limits apply to all of the compounds listed below. Those compounds analyzed using EPA Method 601/602 or 624 are identified by a "☑".

<input type="checkbox"/> Acenaphthene	<input type="checkbox"/> 2-Chlorophenol	<input type="checkbox"/> Methyl bromide	<input type="checkbox"/> Diethyl phthalate	<input type="checkbox"/> 4,4-DDT
<input type="checkbox"/> Acrolein	<input type="checkbox"/> 1,2-Dichlorobenzene	<input type="checkbox"/> Bromoform	<input type="checkbox"/> Dimethyl phthalate	<input type="checkbox"/> 4,4-DDE
<input type="checkbox"/> Acrylonitrile	<input type="checkbox"/> 1,3-Dichlorobenzene	<input type="checkbox"/> Dichlorobromomethane	<input type="checkbox"/> 1,2-Benzanthracene	<input type="checkbox"/> 4,4-DDD
<input type="checkbox"/> Benzene	<input type="checkbox"/> 1,4-Dichlorobenzene	<input type="checkbox"/> Chlorodibromomethane	<input type="checkbox"/> Benzo(a)pyrene	<input type="checkbox"/> Alpha-endosulfan
<input type="checkbox"/> Benzidine	<input type="checkbox"/> 3,3-Dichlorobenzidine	<input type="checkbox"/> Hexachlorobutadiene	<input type="checkbox"/> 3,4-Benzofluoranthene	<input type="checkbox"/> Beta-endosulfan
<input type="checkbox"/> Carbon tetrachloride	<input type="checkbox"/> 1,1-Dichloroethylene	<input type="checkbox"/> Hexachlorocyclopentadiene	<input type="checkbox"/> 1,1,12-Benzofluoranthene	<input type="checkbox"/> Endosulfan sulfate
<input type="checkbox"/> Chlorobenzene	<input type="checkbox"/> 1,2-Trans-dichloroethylene	<input type="checkbox"/> Isophorone	<input type="checkbox"/> Chrysene	<input type="checkbox"/> Endrin
<input type="checkbox"/> 1,2,4-Trichlorobenzene	<input type="checkbox"/> 2,4-Dichlorophenol	<input type="checkbox"/> Naphthalene	<input type="checkbox"/> Acenaphthylene	<input type="checkbox"/> Endrin aldehyde
<input type="checkbox"/> Hexachlorobenzene	<input type="checkbox"/> 1,2-Dichloropropane	<input type="checkbox"/> Nitrobenzene	<input type="checkbox"/> Anthracene	<input type="checkbox"/> Heptachlor
<input type="checkbox"/> 1,2-Dichloroethane	<input type="checkbox"/> 1,3-Dichloropropylene	<input type="checkbox"/> 2-Nitrophenol	<input type="checkbox"/> 1,12-Benzoperylene	<input type="checkbox"/> Heptachlor epoxide
<input type="checkbox"/> 1,1,1-Trichloroethane	<input type="checkbox"/> 2,4-Dimethylphenol	<input type="checkbox"/> 4-Nitrophenol	<input type="checkbox"/> Fluorene	<input type="checkbox"/> Alpha-BHC
<input type="checkbox"/> Hexachloroethane	<input type="checkbox"/> 2,4-Dinitrotoluene	<input type="checkbox"/> 2,4-Dinitrophenol	<input type="checkbox"/> Phenanthrene	<input type="checkbox"/> Beta-BHC
<input type="checkbox"/> 1,1-Dichloroethane	<input type="checkbox"/> 2,6-Dinitrotoluene	<input type="checkbox"/> 4,6-Dinitro-o-cresol	<input type="checkbox"/> 1,2,5,6-Dibenzanthracene	<input type="checkbox"/> Gamma-BHC
<input type="checkbox"/> 1,1,2-Trichloroethane	<input type="checkbox"/> 1,2-Diphenylhydrazine	<input type="checkbox"/> N-nitrosodimethylamine	<input type="checkbox"/> Indeno(1,2,3-cd) pyrene	<input type="checkbox"/> Delta-BHC
<input type="checkbox"/> 1,1,2,2-Tetrachloroethane	<input type="checkbox"/> Ethylbenzene	<input type="checkbox"/> N-nitrosodiphenylamine	<input type="checkbox"/> Pyrene	<input type="checkbox"/> PCB-1242
<input type="checkbox"/> Chloroethane	<input type="checkbox"/> Fluoranthene	<input type="checkbox"/> N-nitrosodi-n-propylamine	<input type="checkbox"/> Tetrachloroethylene	<input type="checkbox"/> PCB-1254
<input type="checkbox"/> Bis(2-chloroethyl) ether	<input type="checkbox"/> 4-Chlorophenyl phenyl ether	<input type="checkbox"/> Pentachlorophenol	<input type="checkbox"/> Toluene	<input type="checkbox"/> PCB-1221
<input type="checkbox"/> 2-Chloroethyl vinyl ether	<input type="checkbox"/> 4-Bromophenyl phenyl ether	<input type="checkbox"/> Phenol	<input type="checkbox"/> Trichloroethylene	<input type="checkbox"/> PCB-1232
<input type="checkbox"/> 2-Chloronaphthalene	<input type="checkbox"/> Bis(2-chloroisopropyl)ether	<input type="checkbox"/> Bis(2-ethylhexyl)phthalate	<input type="checkbox"/> Vinyl chloride	<input type="checkbox"/> PCB-1248
<input type="checkbox"/> 2,4,6-Trichlorophenol	<input type="checkbox"/> Bis(2-chloroethoxy)methane	<input type="checkbox"/> Butyl benzyl phthalate	<input type="checkbox"/> Aldrin	<input type="checkbox"/> PCB-1260
<input type="checkbox"/> Parachlormeta cresol	<input type="checkbox"/> Methylene chloride	<input type="checkbox"/> Di-n-butyl phthalate	<input type="checkbox"/> Dieldrin	<input type="checkbox"/> Toxaphene
<input type="checkbox"/> Chloroform	<input type="checkbox"/> Methyl chloride	<input type="checkbox"/> Di-n-octyl phthalate	<input type="checkbox"/> Chlordane	<input type="checkbox"/> TCDD