



**Date:** February 20, 2009  
**To:** Eric Sunada, Executive Director, San Gabriel Valley Oversight Group  
**From:** Dr. Julie Blue, Senior Hydrologist, The Cadmus Group, Inc.  
**Re:** Draft Remedial Investigation Review

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The questions below were addressed to the Cadmus Group, Inc. (Cadmus) by the San Gabriel Valley Oversight Group (SGVOG). Cadmus, as part of our review of the Draft Remedial Investigation Report for San Gabriel Valley Area 3 Superfund Site, prepared answers to these questions, summarized below. In addition, Cadmus prepared a brief summary of the Draft Remedial Investigation, attached, as well as questions for EPA, submitted previously.

**1. What are the holes or gaps in the report? Are there any conclusions or theories contained in the report which are not justified?**

Yes, there are holes and gaps in the report. The list of comments provided to SGVOG for feedback to EPA describes these. The attached summary of the Remedial Investigation (RI) report has statements in bold that are holes and gaps in the RI identified first by EPA, and which Cadmus wants to emphasize. Also, Cadmus recommends that EPA continue to provide justification for how they developed their decision-making process shown in the flow chart in Exhibit 4-1 and that EPA document changes as they go along, if they deviate from the plan. Finally, it is important to find out the timeframe and extent of future data collection efforts for data gaps Table 4-7 and Table 8-1. If future data show significant changes, the Risk Assessment should be re-calculated.

**2. Please explain the method by which the health risk assessment is made. Are the conclusions drawn consistent with industry-standard practices and accepted principles?**

The Human Health Risk Assessment is a part of the RI where the contaminant data and conceptual modeling of the contaminant migration are compared to human health criteria or standards. This RI analysis was consistent with EPA's Risk Assessment Guidance for Superfund (1989), and was performed using EPA's current health effects criteria and EPA risk assessment policy. This systematic analysis was reviewed by Cadmus and found to be very thorough including presentation of all available data, and explanation of the process used for hazard identification of chemicals, calculations of exposure assessment, and selection of the most conservative human health criteria to assess risk.

The basic approach for the risk assessment was to use the most conservative available site data and human health criteria (i.e., representing the worst-case scenario) and the most conservative contaminant occurrence data (i.e., highest concentrations of contaminants monitored at the site).

These values were then used in standard calculations for risk. Uncertainty in groundwater assessments comes either from data- or model assumption-related errors which are unavoidable, even with the best scientific research. To produce scientifically defensible groundwater vulnerability assessments, scientists attempt to reduce uncertainty by following quality assurance and quality control plans, and by overestimating risks by using the most conservative health criteria to compare to the most contaminated sample data, as long as they meet the data quality assurance/control requirements. The RI explained in detail, the five main areas where uncertainty plays a role including data collection and analysis, fate/transport assumptions, exposure estimates, toxicological data (risks such as health status that affect an individual’s reaction to a contaminant) and uncertainty in the risk characterization assumptions. **If significant new data become available on Contaminants of Potential Concern (COPCs) or on the transport model, then the Human Health Risk Assessment will be updated.**

A reasonable maximum exposure to contaminants by adults and children when they drink water, shower, or water lawns using untreated groundwater was calculated. Risks for both cancer and non-cancer effects were calculated. The level considered to be unacceptable is 1 case in 1 million for cancer. For non-cancer effects, a hazard index of greater than 1 is considered unacceptable, and this defined as the likelihood of an effect being greater than a reference dose of the contaminant that causes effects in a general population. At Area 3, the highest cancer risk was calculated to be 1 in 1000 for TCE in groundwater, but cancer risks for each of the cancer-causing contaminants at this site (carbon tetrachloride, 1,2,3-TCP, TCE and PCE) were all above the acceptable level of 1 in a million. Only PCE exceeded hazard criteria for non-cancer effects of COPCs. Future re-calculation of the risk may include other COPCs, such as arsenic, if data show they meet the criteria.

The risk assessment concluded that actions should be taken to protect human health due to significant contamination by the contaminants mentioned above, and that groundwater is unsuitable for use as tap water. Fortunately, groundwater from Area 3 that is currently used at residences is already being either mixed or treated to ensure that it meets acceptable levels.

- 3. MCLs vary from state to state. This would seem to render a health risk assessment to be somewhat subjective. Could you please compile a list of MCLs on a state-by-state basis for the contaminants found in Area 3? We are interested in those states where MCLs are lower than ours. e.g., I understand that the MCL for perchlorate in MA is 2 ppb.**

Most states and territories have directly adopted the federal MCLs for drinking water contaminants. The following table lists state MCL values for Area 3 contaminants that are not equal to federal MCLs. Values in bold type are cases in which state MCLs (or other designated contaminant levels) are stricter than the federal MCL for that contaminant. Values in normal type are cases in which state MCLs are identical to the federal MCL for that contaminant.

State	Maximum Contaminant Levels (MCLs)	Data Source
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Name	<i>Tetra-chloro-ethene (PCE)</i>	<i>Trichloroethene (TCE)</i>	<i>cis-1,2-Dichloro-ethene (cis-1,2-DCE)</i>	<i>1,2,3-Trichloro-propane (1,2,3-TCP)</i>	<i>Carbon Tetra-chloride</i>	<i>Per-chlorate</i>	<i>Nitrate (as N)</i>	Source	Internet URL
USEPA-federal	5 ppb	5 ppb	70 ppb	n/a	5 ppb	n/a	10 ppm	National Primary Drinking Water Regulations	<a href="http://www.epa.gov/safewater/contaminants/index.html#listmcl">http://www.epa.gov/safewater/contaminants/index.html#listmcl</a>
California	5 ppb	5 ppb	<b>6 ppb (state MCL)</b>	n/a	<b>0.5 ppb (state MCL)</b>	<b>6 ppb (state MCL)</b>	10 ppm	State Code of Regulations (Chapter 15, Title 22, Articles 4 and 5.5)	<a href="http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/dwregulations-01-01-2009.pdf">http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/dwregulations-01-01-2009.pdf</a>
Florida	<b>3 ppb (state MCL)</b>	<b>3 ppb (state MCL)</b>	70 ppb	n/a	<b>3 ppb (state MCL)</b>	n/a	10 ppm	State Code of Regulations (Chapter 62-550)	<a href="http://www.dep.state.fl.us/legal/Rules/drinkingwater/62-550.pdf">http://www.dep.state.fl.us/legal/Rules/drinkingwater/62-550.pdf</a>
Maine	5 ppb	5 ppb	70 ppb	<b>0.05 ppb (interim state MEG)<sup>1</sup></b>	<b>3 ppb (final state MEG)</b>	<b>1 ppb (interim state MEG)</b>	10 ppm	Maine CDC Maximum Exposure Guidelines (MEGs) for drinking water	<a href="http://www.maine.gov/dhhs/eohp/wells/documents/megtable.pdf">http://www.maine.gov/dhhs/eohp/wells/documents/megtable.pdf</a>
Massachusetts	5 ppb	5 ppb	70 ppb	n/a	5 ppb	<b>2 ppb (MMCL)<sup>2</sup></b>	10 ppm	2008 Standards & Guidelines for Contaminants in Massachusetts Drinking	<a href="http://www.mass.gov/dep/water/drinking/standards/dwstandard.htm">http://www.mass.gov/dep/water/drinking/standards/dwstandard.htm</a>

<sup>1</sup> Maximum Exposure Guideline (MEG) status definitions are as follows: Final MEG Status: MEG is based on USEPA Integrated Risk Information System (IRIS) toxicity data and derived following standard USEPA protocols. Interim MEG Status MEG is not based on USEPA IRIS toxicity data and the Bureau of Health has lower confidence in toxicity data.

<sup>2</sup> The Massachusetts MCL (MMCL) is directed at the sensitive subgroups of pregnant women, infants, children up to the age of 12, and individuals with hypothyroidism. They should not consume drinking water containing concentrations of perchlorate exceeding 0.002 mg/L. It is recommended that no one consume water containing perchlorate concentration greater than 18 mg/L.

State Name	Maximum Contaminant Levels (MCLs)							Data Source	
	<i>Tetra-chloro-ethene (PCE)</i>	<i>Trichloroethene (TCE)</i>	<i>cis-1,2-Dichloro-ethene (cis-1,2-DCE)</i>	<i>1,2,3-Trichloro-propane (1,2,3-TCP)</i>	<i>Carbon Tetra-chloride</i>	<i>Per-chlorate</i>	<i>Nitrate (as N)</i>	Source	Internet URL
								Water	
New Jersey	<b>1 ppb (state MCL)</b>	<b>1 ppb (state MCL)</b>	70 ppb	n/a	<b>2 ppb (state MCL)</b>	n/a	10 ppm	State Code of Regulations (N.J.A.C. 7:10)	<a href="http://www.state.nj.us/dep/watersupply/sdwarule.pdf">http://www.state.nj.us/dep/watersupply/sdwarule.pdf</a>
New York	5 ppb	5 ppb	<b>5 ppb (state MCL)</b>	<b>5 ppb (state MCL)</b>	5 ppb	n/a	10 ppm	State Code of Regulations (Part 5, Subpart 5-1)	<a href="http://www.health.state.ny.us/environmental/water/drinking/part5/tables.htm">http://www.health.state.ny.us/environmental/water/drinking/part5/tables.htm</a>
Texas	5 ppb	5 ppb	70 ppb	n/a	5 ppb	<b>4 ppb (state IAL)<sup>3</sup></b>	10 ppm	State Code of Regulations (RULE §290.104)	<a href="http://info.sos.state.tx.us/pls/pub/readtac\$ext.TacPage?sl=R&amp;app=9&amp;p_dir=&amp;p_rloc=&amp;p_tloc=&amp;p_ploc=&amp;pg=1&amp;p_tac=&amp;ti=30&amp;pt=1&amp;ch=290&amp;rl=104">http://info.sos.state.tx.us/pls/pub/readtac\$ext.TacPage?sl=R&amp;app=9&amp;p_dir=&amp;p_rloc=&amp;p_tloc=&amp;p_ploc=&amp;pg=1&amp;p_tac=&amp;ti=30&amp;pt=1&amp;ch=290&amp;rl=104</a>
Vermont	<b>0.7 ppb (VAL)<sup>4</sup></b>	5 ppb	70 ppb	<b>5 ppb (VHA)<sup>5</sup></b>	<b>0.5 (VAL)</b>	n/a	10 ppm	Vermont Department of Health Drinking Water	<a href="http://health.vermont.gov/enviro/water/documents/drinkwaterguidance02.p">http://health.vermont.gov/enviro/water/documents/drinkwaterguidance02.p</a>

<sup>3</sup> State Interim Action Level (IAL) for perchlorate is 4 ppb. We are making the general recommendation that pregnant women and children less than 3 years of age whose source water exceeds the Texas Commission on Environmental Quality's Interim Action Level (IAL) of 4 parts per billion (ppb) perchlorate use bottled water for cooking and drinking.

<sup>4</sup> Vermont Action Levels (VAL) are used with eight chemicals of specific public health concern in public water systems. Action Levels as established by the Department of Health are the concentrations at or above which a specific (priority) procedure will be followed to provide public health protection.

<sup>5</sup> Vermont Health Advisories (VHA) are researched and calculated concentrations of chemicals in drinking water in cases where the chemicals do not have an MCL.

State Name	Maximum Contaminant Levels (MCLs)							Data Source	
	Tetra-chloro-ethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloro-ethene (cis-1,2-DCE)	1,2,3-Trichloro-propane (1,2,3-TCP)	Carbon Tetra-chloride	Per-chlorate	Nitrate (as N)	Source	Internet URL
								Guidance	df

The following states or territories have directly adopted federal MCLs for these drinking water contaminants as specified by EPA's National Primary Drinking Water Regulations: Kansas, Mississippi, Puerto Rico, Virginia, and Wyoming. The following states or territories have MCLs identical to federal MCLs for these drinking water contaminants as specified in their State Codes of Regulations: Alabama, Alaska, Arizona, Arkansas, Colorado, Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Missouri, Montana, Nebraska, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Texas, U.S. Virgin Islands, Utah, Washington, West Virginia, Wisconsin.

Other states or territories have MCLs identical to federal MCLs for these drinking water contaminants as specified in State Compliance Reports (Connecticut, Idaho, Iowa, Maryland, Rhode Island, Washington D.C.), state Web sites (Massachusetts, Pennsylvania, South Dakota, Virginia), and other government documents, including fact sheets (Arizona, Maine, Michigan, Minnesota, Vermont).

As shown in the table, Massachusetts is the only state with a perchlorate MCL stricter than California's. Maine and Texas have official recommendations with regard to perchlorate in drinking water; however, these recommendations are not official MCLs.

**4. Are the test methods used to collect and evaluate samples consistent with the latest state-of-the-art techniques? Were tests comprehensive for the different contaminants or were some tests only targeting certain contaminants? Please assess the accuracy and error bars associated with the data.**

The following EPA methods were used for the key COPCs. This information was retrieved from Appendix D (Groundwater Data Set).

Compound	Method Number	Method Name	Detection Limit
Perchlorate	EPA 314.0	Perchlorate in drinking water by ion chromatography	2 ug/L
Trichloroethylene	EPA 524.2	VOCs in water by GC/MS	1 ug/L
Tetrachloroethylene	EPA 524.2	VOCs in water by GC/MS	1 ug/L
1,2-Dichloroethene	EPA 524.2	VOCs in water by GC/MS	1 ug/L

Compound	Method Number	Method Name	Detection Limit
Carbon Tetrachloride	EPA 524.2	VOCs in water by GC/MS	0.5 ug/L
1,2,3-Trichloropropane	EPA 524.2	VOCs in water by GC/MS	1 ug/L
Nitrate	EPA 300.0	Inorganic ions by ion chromatography	0.1 mg/L

Abbreviations: VOCs: volatile organic compounds

GC/MS: Gas chromatography/mass spectrometry

Method 314.0 (ion chromatography) is specifically for the analysis of perchlorate and can be used for samples of surface water, groundwater, and finished drinking water. Ion chromatography can also be used for the analysis of a number of other anions, often simultaneously. EPA Method 300.0 provides procedures for the analysis of nitrate and 10 other anions, including chloride and sulfate.

EPA Method 524.2 is for the analysis of volatile organic compounds in water and is appropriate for surface water, groundwater, and drinking water. Gas chromatography/mass spectrometry allows for the separation and quantification of many compounds, and this method can analyze for 89 analytes.

The procedures for these methods are EPA-approved and were last revised in the 1990's. They are well-established, sensitive, and routinely used.

With respect to errors, one measure of variability is the reproducibility from duplicate samples taken in the field. Field duplicates capture variability due both to the field sampling procedures and laboratory analysis. The tables below show a few examples of results from field duplicates for four of the key COPCs sampled at EPA monitoring wells. These data were taken from Appendix C and show the values for the duplicates and the RPD (relative percent difference) between the two. The RPDs can vary even when using standard and consistent field and laboratory procedures. Sometimes the RPD can be large when concentrations are small because the differences between samples represent a large percentage of the total concentration.

The examples provided below are for samples with concentrations above the laboratory reporting limits. According to the quality assurance criteria presented in Appendix C, duplicates with an RPD of less than 30% are considered in agreement. There are slightly different criteria for assessing duplicates where one or both of the samples are below the reporting limits. Appendix C notes that out of 3,117 pairs of field duplicates, only 54 pairs exceeded the evaluation criteria. It is stated that "Overall, 98 percent of the field duplicate results satisfied the evaluation criteria, indicating acceptable overall sampling and analysis precision."

#### Field Duplicates for Samples from EPA Monitoring Wells for Trichloroethene

Date	Well	Sample 1 (ug/L)	Sample 2 (ug/L)	RPD (%)
3/5/03	EPAMW11	240	260	8
7/16/03	EPAMW14_03	44	54	20
11/4/03	EPAMW11	220	230	4
11/10/03	EPAMW14_03	52	62	18
2/3/04	EPAMW11	260	250	4

Date	Well	Sample 1 (ug/L)	Sample 2 (ug/L)	RPD (%)
2/9/04	EPAMW14_03	35	53	41
5/21/04	EPAMW11	220	220	0
5/21/04	EPAMW14_03	42	46	9
8/4/04	EPAMW12A	68	75	10
8/4/04	EPAMW15_05	0.89	1.5	51

#### Field Duplicates for Samples from EPA Monitoring Wells for Tetrachloroethene

Date	Well	Sample 1 (ug/L)	Sample 2 (ug/L)	RPD (%)
3/5/03	EPAMW11	4	4	0
7/16/03	EPAMW14_03	0.6	1	50
11/4/03	EPAMW11	5.7	6.4	12
11/10/03	EPAMW14_03	0.9	1	11
2/3/04	EPAMW11	7.8	7.7	1
5/21/04	EPAMW11	7.2	7.1	1
5/21/04	EPAMW14_03	0.8	1	22
8/4/04	EPAMW12A	2.4	2.3	4
8/4/04	EPAMW15_05	14	22	44
11/9/04	EPAMW11	9.3	9.2	1

#### Field Duplicates for Samples from EPA Monitoring Wells for Perchlorate

Date	Well	Sample 1 (ug/L)	Sample 2 (ug/L)	RPD (%)
11/4/03	EPAMW11	4.7	5	6
2/9/04	EPAMW14_03	3.5	3	15
8/23/05	EPAMW11	4.9	4.9	0
9/7/05	EPAMW15_06	4.4	3.4	26
3/1/06	EPAMW16_07	3.3	2.4	32
11/13/06	EPAMW11	4.9	4.7	4
8/21/07	EPAMW16_07	2.2	2.3	4
8/22/07	EPAMW14_03	3.3	3.8	14



### Field Duplicates for Samples from EPA Monitoring Wells for Carbon Tetrachloride

Date	Well	Sample 1 (ug/L)	Sample 2 (ug/L)	RPD (%)
3/5/03	EPAMW11	0.9	0.8	12
11/4/03	EPAMW11	0.9	0.9	0
2/3/04	EPAMW11	1	1	0
5/21/04	EPAMW11	0.7	0.7	0
11/9/04	EPAMW11	1.4	1.4	0
8/23/05	EPAMW11	1.1	1.1	0
11/13/06	EPAMW11	1.3	1.3	0

#### 5. Could you please comment on the lack of migration data? Do we truly lack the data to make an assessment of plume migration?

Chapter 8 of the RI (and Table 8-1 in particular) lists areas that EPA has found should be focused on next. These include finding new potential sources of key contaminants of concern, gaining information and data on the hydrogeology (water movement and interaction with rocks and soil), groundwater flow directions, and the extent of contamination. These are the basis for refining the hydrogeologic conceptual site model and for defining migration plumes. EPA appears aware of these data limitations, and has prepared the RI, Cadmus believes, as well as would be expected with the data available, and in spite of uncertainty in many areas. Summarized below is the information on plumes and contaminant migration in the RI.

Of five areas where groundwater occurs at Area 3, the most severe contamination is in the southwest and northeast. Representations of the spatial relationships between surface structures, groundwater, contaminants, and hydrogeological features at Area 3 are found throughout the RI. See Figure ES-2 in the RI for a simplified conceptual hydrogeology drawing. However, **contaminant plumes have not been delineated in Area 3 because the transport mechanism (downward flow as compared to spreading horizontally) is not well-defined, and this significant data limitation produces uncertainty in the RI EPA reported it hopes to improve (Section 8).**

EPA investigated over 500 potentially responsible parties or known sources of contamination and, so far, 12 have found volatile organic chemicals in groundwater at their properties, and **future investigation continues to identify more contaminants.** EPA identified key contaminants of potential concern (COPCs) by testing for over 300 chemicals in groundwater across Area 3. Seven COPCs include nitrates, perchlorate, 1,2,3-trichloropropane (1,2,3-TCP), cis-1,2-dichloroethylene (cis-1,2-DCE), trichloroethene (TCE), and tetrachloroethene (PCE). TCE occurs up to 460 times the maximum contaminant level (5 ug/l), and PCE occurs up to 160 times the MCL of 5 ug/l. It is not clear to what extent these chemicals are biodegrading in the environment (this is related to oxygen conditions below the ground surface), so **additional data are needed to determine whether biodegradation affects the COPCs.**



6. Why is perchlorate found at relatively high concentrations (>6 ppb) in one area but not in an adjacent well? For example, why does EPAMW11 show detect levels but not EPAMW18? Same for wells 01901679 and 01900934? Why is it that perchlorate levels have since gone down?

Table 4-9 in the RI shows that wells EPAMW11 and EPAMW18 sample different aquifers. EPAMW11 is described as being screened in the Western Alluvial aquifer, and EPAMW18 is screened in the bedrock aquifer. It is reasonable for them to have different perchlorate levels and different numbers of samples with concentrations above the detection limit.

#### Perchlorate in Wells EPAMW11 and EPAMW18

Well	EPAMW11	EPAMW18
<b>Aquifer</b>	Western Alluvial	Bedrock
<b>Samples</b>	9	7
<b>Sample Date Range</b>	11/4/03 – 11/16/07	9/9/05 – 11/16/07
<b>Detects</b>	9	1
<b>Exceedances</b>	1	0
<b>Maximum Detected Concentration</b>	6.4 ug/L	3.1 ug/L
<b>Date of Maximum Detected Concentration</b>	12/2/05	8/24/06
<b>Most Recent Concentration</b>	5 ug/L	2 ug/L (not detected above detection limit)

The use of symbols on the maps to present contaminants in different concentration ranges provides a useful visual snapshot, but it does obscure the data to some degree. Values that happen to lie on either side of the cutoff for a given concentration range will be represented with different symbols and may appear more different than they actually are. Perchlorate provides a good example. Wells 01901679 and 01900934 have maximum perchlorate concentrations of 6.8 and 5.6 ug/L. This is a relative percent different of 20%. However, when looking at Figure 4-11, one cannot tell if the perchlorate concentration at well 01901679 is closer to 6 ug/L or to 60 ug/L. When in doubt, checking the original data tables will indicate what the true values are.

**Perchlorate in Wells 01901679 and 01900934**

Well	01901679	01900934
<b>Aquifer</b>	Intermediate, Deep	Intermediate, Deep
<b>Samples</b>	5	4
<b>Sample Date Range</b>	7/16/97 – 2/27/01	6/10/97 – 8/14/97
<b>Detects</b>	4	2
<b>Exceedances</b>	1	n/a
<b>Maximum Detected Concentration</b>	6.8 ug/L	5.6 ug/L
<b>Date of Maximum Detected Concentration</b>	2/27/01	6/25/97
<b>Most Recent Concentration</b>	6.8 ug/L	4 ug/L

With respect to changes over time, perchlorate concentrations at EPAMW11 have remained relatively constant from 2003 to 2007 (see table below); there does not appear to be a consistent trend up or down. However, the use of different symbols in Figures 4-11 vs. 4-12 makes it appear as if concentrations have decreased by comparing the highest value with the most recent.

**History of Perchlorate Concentrations at Well EPAMW11**

Date	Perchlorate Concentration (ug/L) <sup>a</sup>
11/4/03	4.7
11/4/03 (duplicate)	5.0
8/23/95	4.9
8/23/05 (duplicate)	4.9
12/2/05	6.4
8/24/06	5.5
11/13/06	4.9
11/13/06 (duplicate)	4.7
11/16/07	5.0

<sup>a</sup> Analytical method detection limit is 2 ug/L.

**History of Perchlorate Concentrations at Well EPAMW18**

Date	Perchlorate Concentration (ug/L) <sup>a</sup>
9/9/05	2 (considered not detected)
5/24/06	2

5/24/06 (duplicate)	2
8/24/06	2
8/24/06 (duplicate)	3.1
11/14/06	2
11/16/07	2

<sup>a</sup> Analytical method detection limit is 2 ug/L. Values of 2 ug/L are considered not detected.

The tables below show the concentrations of perchlorate at wells 01901679 and 01900934. The detection limit given for 01900934 is 4 ug/L; concentrations of 4 ug/L are considered non-detects. It is unclear, therefore, if the true concentrations at that well may actually be lower. Factors that might affect concentrations would include whether or not there is a source of contamination close to one of the wells and whether they are screened at different depths. Although both 01901679 and 01900934 are both screened over several large intervals, 01900934 is screened at both shallower and deeper intervals than 01901679, potentially accessing groundwater with different contaminant concentrations. Furthermore, these two wells are from different water systems, and may have been analyzed in different laboratories. Given uncertainties in the data, further analysis would be needed to determine if differences between concentrations in these wells are statistically significant.

#### History of Perchlorate in Well 01901679

Date	Perchlorate Concentration (ug/L) <sup>a</sup>
7/16/97	5.7
12/10/97	6
9/12/00	5
11/21/00	5.7
2/27/01	6.8

<sup>a</sup> Analytical method not listed. Detection limit is likely 5 ug/L; sample with reported concentration of 5 ug/L is listed as a non-detect.

#### History of Perchlorate in Well 01900934

Date	Perchlorate Concentration (ug/L) <sup>a</sup>
6/10/97	4.2
6/25/97	5.6
7/10/97	4
8/14/97	4

<sup>a</sup> Analytical method detection limit is 4 ug/L. Samples with reported concentrations of 4 ug/L are considered non-detects.

