



## **2013 Annual Performance Evaluation Report Volume 2**

**Baldwin Park Operable Unit of the  
San Gabriel Valley Superfund Sites  
Los Angeles County, California**

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# **APPENDIX A**

GROUNDWATER PLUME MAPS AND CHEMICAL CROSS SECTIONS

## APPENDIX A GROUNDWATER PLUME MAPS AND CHEMICAL CROSS SECTIONS

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## **2013 ANNUAL PERFORMANCE EVALUATION REPORT APPENDIX A**

### **Baldwin Park Operable Unit San Gabriel Valley, California**

#### **1.0 INTRODUCTION**

Plume maps and chemical cross sections were prepared to present the approximate distribution of seven chemicals of concern (COCs) in groundwater in the Baldwin Park Operable Unit (BPOU) in 2013 in accordance with the requirements of Section 5.4 of the Performance Standards Evaluation Plan (PSEP) (AMEC Environment & Infrastructure, [AMEC], 2013) and the recommendations made in the technical memorandum, Response to Requested Modification #3 to the Revised Final Performance Standards Evaluation Plan, dated February 17, 2004 (Geomatrix, 2004). The technical memorandum recommended that future interpretations of the spatial distribution and temporal trends of COCs in groundwater focus on seven selected COCs: 1,2-dichloroethane (1,2-DCA); 1,4-dioxane; carbon tetrachloride; N-nitrosodimethylamine (NDMA); perchlorate; tetrachloroethene (PCE); and trichloroethene (TCE). These seven COCs were selected because they meet one or more of the following criteria:

- Observed levels of the compounds meet or exceed either California Maximum Contaminant Levels (MCLs) or, if no MCL has been established, the California Drinking Water Notification Level (NLs), as applicable.
- They occur relatively frequently in the BPOU.
- They may be a controlling compound relative to effectiveness of treatment processes used in BPOU Treatment Plants.

The plume maps and chemical cross sections presented herein were created by developing a three-dimensional (3D) representation of chemical distribution using a grid-based interpolation technique and then slicing the 3D grids at specific elevation intervals and along specific transects. The water-quality monitoring data, gridding technique, limitations, and results are discussed in the following sections.

As discussed in Section 4.0 below, while every effort has been made to achieve an accurate depiction of the distribution of these COCs at various elevation intervals, there are substantial limitations in depicting multi-dimensional images of a dynamic and complex plume. The plume maps and chemical cross sections should be viewed as best approximations based upon existing data, not exact or completely accurate expressions of a very complicated data set.

#### **2.0 WATER-QUALITY DATA**

Plume maps and chemical cross sections for each COC were generated using water-quality data primarily collected for the PSEP water-quality monitoring program and supplemented with additional data collected for California Department of Public Health (DPH) and Regional Water Quality Control Board –

Los Angeles Region (RWQCB) monitoring requirements. Water-quality monitoring data used for these interpretations consist of sample results from 65 wells and 153 discrete sample locations, including 18 multiport wells with 3 to 13 depth-discrete sampling ports and two discrete sample depths in three inactive production wells sampled using dedicated low-flow pumps. Results from all sample locations in the PSEP water-quality monitoring program were included in the dataset. Water-quality monitoring data used to generate the plume maps and chemical cross sections are summarized in Table A-1. Sample locations are shown on Figure A-1.

Water-quality monitoring data were selected from a limited time period that was targeted around the annual sampling event in the multiport monitoring wells that was conducted in May and June 2013. Several multiport monitoring wells are on a semi-annual sampling frequency and these wells were sampled a second time in October or November 2013. Although the second set of results for those multiport monitoring wells that are sampled semi-annually were not included in the plume modeling, a review of the data (included in Table 5-3 of Volume 1) indicates that the second set of results would not materially affect the plume depictions for any of the compounds. Ninety-seven percent of the data used for the plume maps and chemical cross sections are from water-quality samples that were collected within the months of May and June 2013. If data from various wells were not available within this date range, then data from the next closest date were selected to create the most contemporaneous data set possible. Data utilized from outside the one-month period are limited to data from twelve monitoring wells.

Data validation and data-quality assessment for data used in the plume modeling are discussed in Section 5.2.2 of Volume 1.

### **3.0 THREE-DIMENSIONAL INTERPRETATION**

Water-quality monitoring data for each COC were interpolated on a 3D grid using the geospatial software program, EarthVision®. The 3D grid developed for the plume maps is 8,400 meters wide, 19,100 meters long, and 570 meters thick. The grid was divided into cells that are 100 meters wide, 250 meters long, and 10 meters thick. The grid was rotated 38 degrees to orient it parallel to the primary groundwater flow direction (northeast-southwest) across the BPOU. The model used a vertical influence factor of 0.1 (dimensionless).

#### **3.1 Earthvision® Gridding Technique**

The 3D Grid Calculations program in EarthVision® was used to interpolate chemical concentrations that varied continuously in 3D space using the 3D minimum tension gridding technique. The minimum tension gridding algorithm calculates a smooth surface that closely fits the input data values using biharmonic cubic spline techniques. This procedure produces a 3D grid depicting the interpolated distribution of chemical concentrations throughout the defined volume. The technique is designed to match data where they exist, to smoothly interpolate between known data points, and to extrapolate where there are no data using a splining technique to develop a smooth surface with minimum curvature.

The 3D Grid Calculations program creates a 3D grid from X, Y, Z, and property (P) input data where X, Y, and Z define the location of each point and P is the concentration value of the chemical at that point.

Water-quality monitoring data are input at the exact geographic coordinates (X, Y) of the respective well and either at the mid-screen elevation of the respective well screened interval (Z) or at the exact elevation of a discrete water-quality sample collected using low-flow sampling methods. The mid-screen elevations for production wells having multiple screened intervals are represented using the mid-screen elevation of the composite screened interval.

The interpolated results are rectangular grids containing nodes at regularly spaced intervals in each dimension. The chemical concentrations being interpolated are stored for each grid node location and used for subsequent display and analysis. Once a 3D grid is calculated, it is used to create a faces file representing 3D isoconcentration shells, equivalent to two-dimensional (2D) contour lines.

The main goals of the gridding technique are to represent the input data as closely as possible and to calculate a reasonable interpolated value at grid nodes that are not on or adjacent to input data points. The two-stage minimum tension gridding technique permits gridding computation times suitable to a working environment and modeling accuracy appropriate to almost every type of input data. Estimation of interpolated values at grid nodes uses a finite-difference solution approach.

The two stages of minimum tension gridding include the initial estimate and cubic function iterations with scattered data feedback. The initial grid estimation process calculates a P-value for every grid node in an extremely coarse 3D grid that is used in the initial stages of gridding. This coarse grid contains four X-columns, four Y-rows, and four Z-levels regardless of the number of columns, rows, and levels specified by the user. This coarse grid covers the exact range specified by the user. All of the scattered data points are used as input to an inverse-distance weighted average function that calculates a P-value at each of the 64 initial node positions.

Once the starting P-values are estimated for the initial coarse grid, iterations begin. Each iteration consists of calculation of a new P-value for each grid node (one by one) with neighboring grid nodes providing input values to a cubic function that determines the new value. Once the new value is calculated for any one node, the scattered data are used for the feedback process described in the next section. Minimum tension is the distribution of tension (the second derivative or curvature of the property variation) among the nodes such that the sum of the squares of the second derivatives is minimized. The cubic function is fitted to the grid nodes in these iterations rather than to the input scattered data points. Since the input points are not used in this tension relaxation, it is possible that the property distributions represented by these grid nodes may move away from the scattered data P-values, thus not honoring the data as well. To prevent this, a scattered data feedback step follows each re-evaluation of each grid node. If no scattered data points exist within a grid cell spacing in each direction, the grid node is left with the P-value established by the just-completed function. All of the scattered data points falling within the one cell zone around the grid node in question are evaluated. The P-value(s) are determined at the X, Y, Z location(s) of the scattered data point(s) within the zone based on the current grid node values and these P-value(s) are compared to the input P-value(s) in the scattered data. The difference between these two values should decrease between iterations as the gridding progresses. As long as this difference (deviation) is decreasing, the program accepts the new, function-derived grid node value, and proceeds to recalculate the next grid node. If the deviation increases, the node is reset to a value that more closely agrees with the scattered data point. When a neighboring point is re-evaluated, this

corrected node is one of the points input to the cubic function for the next node. The iterative re-evaluation cycle distributes the correction away from the corrected node to surrounding nodes that do not have scattered data in their immediate vicinity. Through this process, the scattered data feedback keeps grid nodes tied to neighboring scattered data while allowing the cubic function to distribute tension in a reasonable fashion.

### **3.2 Non-Detect Values Gridding**

The gridding of non-detect values requires special treatment for scattered data containing P-values equal to a user-specified non-detect value. A non-detect value is a flag in the input data set that signifies that the COC being measured was not detected above the Method Detection Limit (DL) or Reporting Limit (RL) for the respective analytical method. Non-detect flags are used as input for the plume interpretations at locations where groundwater samples were collected but chemical concentrations were below the sample quantitation limit. Non-detect flags were set to -999. An example of the non-detect application in 3D can occur with spot or random data that contain scattered data points with X, Y, Z, and P information measuring a contaminant throughout the area of interest. In this case, the edge of the contaminant plume should not necessarily pass through every scattered data point that has a non-detect P-value. If the data are randomly located, most if not all of the scattered data points with non-detect P-values should simply fall outside of the plume, and not define the exact edge of the plume. In the first gridding pass, scattered data points with the non-detect P-value are ignored. This first calculation is done using the standard minimum tension gridding technique. Using the grid from the first pass, a back-interpolated value is calculated at all unclipped non-detect points; the P-values at those points are then reset to the negative of the absolute of that calculated value. The second gridding pass uses these reset values along with the original data points used in the first pass to generate the final output grid.

### **4.0 LIMITATIONS**

The depictions of plume geometry presented in Figures A-2 through A-50 represent the current estimate of the distribution of the COCs in the BPOU in 2013. However, as with any approach used to interpolate data between known data points, there are uncertainties and limitations to the approach that may result in alternative interpretations of the distribution of COCs in groundwater. These uncertainties and limitations are as follows:

- For clarity, and as requested by EPA, we have depicted the seven principal COCs in separate plume maps at three elevations as described in Section 5.2.3 of Volume 1. Plumes for the various COCs overlap (and/or diverge) at various depths throughout the impacted areas.
- The plume maps and chemical cross sections attempt to depict the dynamic and temporally changing 3D distribution of COCs in groundwater with static 2D images. While these maps and cross sections show 2D isoconcentration contours of the COC plumes in plan view and in profile, they represent interpolated approximations of the distribution of COCs in groundwater based on available data. The exact subsurface distribution of the COCs cannot be completely ascertained given temporal changes in groundwater flow directions and COC concentrations, as well as the data gaps and other limitations described herein. The spatial and temporal spread of the chemical data may not encompass the entire distribution of chemicals in the groundwater (i.e.,

additional assumptions are necessary as to chemical concentrations in areas that may not be completely represented by monitoring wells). As such, control data were used to refine the shape of the isoconcentration contours using professional judgment. Control data were added to the input dataset for each COC to ensure that the position of the discrete and composite isoconcentration contours shown on the plume maps and chemical cross sections is consistent with the posted chemical data. In particular, results of the interpolation should be carefully evaluated in areas where available data are limited or concentrations change significantly over short distances.

- Alternative interpretations of the distribution of the COC plumes are possible and may differ from the plume depicted here by utilizing plumes drawn manually using professional judgment. For example, plume maps and chemical cross sections for certain COCs portray discontinuous plumes in areas where the plumes may in fact be continuous.
- As described in Section 2.0 above, the plume interpretations generally incorporate water-quality data for the period from March through May 2013. However, where data were not available for that time period, data from the next closest date during the January through December 2013 time period were utilized. While using such an expanded data set is helpful to some degree in the contouring exercise, it introduces additional uncertainties in comparing data taken from different time periods and assuming that the ultimate projection is a consistent one. Moreover, even using this temporally diverse data set, there are inevitable gaps in the existing data that limit our ability to define the distribution of COCs in groundwater completely. In addition, the EarthVision<sup>®</sup> software used to create the plume maps and chemical cross sections utilizes certain algorithms to interpolate or “fill in” data gaps in order to provide a more comprehensive picture of the distribution of COCs. Although the EarthVision<sup>®</sup> software objectively applies the selected interpolation scheme, other software and other interpolation schemes may be applied that may generate reasonable, yet differing, results, each appropriately honoring the available monitoring data. This is not a unique limitation of the EarthVision<sup>®</sup> software, but simply a limitation of any methodology with limited data. Consequently, the interpretation may result in differences between actual and interpreted concentrations at any given point in the Project area.
- The Duarte Fault is represented as a diffuse zone of faulting on the plume maps and chemical cross sections. However, no faulting was explicitly represented in any way in the 3D grid used to interpolate the plumes. The diffuse fault zone is considered to be a reasonable representation of the uncertainty in the fault’s location as it has several fault splays concealed beneath alluvial deposits.
- The northern-most limits of some COCs depicted on the plume maps are uncertain due to the limited amount of data available to the CR group from other EPA-named PRPs, including the Mobil/Lockheed/Valspar group, as well as other entities that may be PRPs in the northern portions of the BPOU. In consideration of the lack of recent available groundwater data from several PRP facilities and historical detections of several COCs such as TCE and PCE in the area north of the Duarte Fault zone, isoconcentration contours for TCE and PCE are truncated at the downgradient (southern) extent of the Duarte Fault zone.

Various contours created by the EarthVision<sup>®</sup> software differ from contours that individual Cooperating Respondents (CRs) might have depicted based upon their own professional analyses and judgments. These maps reflect our operation of the EarthVision<sup>®</sup> software and should not be taken as an admission by any CR for any purpose, and specifically they should not be taken as an admission by any CR that they accurately reflect such CR's views as to actual conditions in the BPOU area. Even with these limitations, the plume maps, chemical cross sections, and isoconcentration shells provide useful information on general chemical distributions, if one appreciates the inherent limitations.

## **5.0 RESULTS**

Final grid values were contoured at the respective applicable regulatory contaminant level, either the MCL or, if no MCL has been established, the NL, and were visualized as 3D isoconcentration shells that can be rotated and viewed from any perspective.

The lateral distribution of the selected COCs is shown in plan view at three specific elevation intervals. The three elevation intervals are as follows:

- Elevations between the water table (or potentiometric surface) and -200 feet msl;
- Elevations between -200 feet and -500 feet msl; and
- Elevations below -500 feet msl.

The plume maps for the three elevation intervals shown include two sets of isoconcentration contours on each map. Isoconcentration contours at "discrete" elevations are shown for thin slices through the plumes at -50, -350 and -550 feet msl. Isoconcentration contours for "composite" elevation intervals are also shown for thick wedges of the plume between the water table and -200 feet msl, between -200 and -500 feet msl, and below -500 feet msl. On some of the plume maps, the isoconcentration contour lines at discrete elevations (dashed contour line) and the isoconcentration contour line for the composite elevation interval (solid contour line) overlap so that the discrete contour is not separately visible.

Chemical cross sections showing the vertical distribution of selected COCs along four discrete transects are also presented. The locations of these cross sections are shown on Figure A-1. Cross section A-A' represents a north-south transect that is aligned generally with the longitudinal axis of the COC plumes. Cross Sections B-B', C-C', and D-D' represent west-east or northwest-southeast transects that are aligned generally perpendicular to the dominant groundwater flow direction in the BPOU. Cross sections B-B', C-C', and D-D' show the distribution of the COC plumes in the upgradient, mid-plume, and downgradient areas of the BPOU, respectively, and include various production wells that are vulnerable to lateral migration of the COC plumes toward the west or east.

Given the 3D nature of the plume, the reader is encouraged to consider the 3D visualization that is inset in the corner of each figure when reviewing the 2D plume maps and chemical cross sections. This will provide the appropriate context within which to review the isoconcentration contours in each elevation interval and along each transect. It should be noted that the water-quality data used to create the 3D plume interpretations are posted on the plume maps according to the composite elevation intervals

described above. Therefore, in many instances the discrete contours may not appear to correspond to water-quality data that are within the composite elevation interval but that are either above or below the elevation of the discrete contours.

Isoconcentration shells, plume maps, and chemical cross sections for seven COCs are shown in Figures A-2 through A-50. The isoconcentration shells visualized in 3D perspective represent views of the COC plumes looking toward the north and represent the interpreted 3D extent of each COC at concentrations meeting or exceeding the respective applicable MCL or NL. The bottom of the isoconcentration shells is bounded by the underlying bedrock surface at the base of the aquifer. The bedrock surface was obtained in a Geographic Information System (GIS) layer from the EPA/CH2M-Hill San Gabriel Basin Database website. The top of the isoconcentration shells is bounded by a generalized potentiometric surface developed using the BPOU groundwater flow model.

Generalized distributions of each chemical are also shown on Figures 5-8 through 5-14, included in Volume 1. The isoconcentration contours shown on these figures represent the composite lateral extent of each chemical for every elevation within the 3D grid. General observations and apparent changes in the spatial distribution of COCs in the BPOU compared to the previous year are discussed in Section 5.2.3 of Volume 1.

When reviewing the discussion in Section 5.2.3 of Volume 1, apparent changes in the interpreted spatial distribution of a particular COC plume from year to year should be considered with due caution. Historical variations in chemical concentrations have been observed seasonally and from year to year as basin water levels vary. In some instances, observed COC concentrations have fluctuated above and below MCLs (or NLs) and RLs (or DLs) during the span of one or two years or even from one sampling event to the next. Therefore, very slight changes in water-quality results from one sampling event to the next may significantly alter the interpreted spatial extents of the COC plumes that are depicted on the plume maps and chemical cross sections. Therefore, while the apparent short-term changes in the interpreted plume extents may be representative of seasonal or annual changes, the apparent short-term changes should not be considered as representative of longer-term (multi-year) trends until such observations can be confirmed over several years. This is particularly important for wells located along the perimeter of the plumes.

Subject to the foregoing limitations, the plume maps and chemical cross sections provide a reasonable approximation of the distribution of chemical concentrations across most of the BPOU within the time frame analyzed, although the precise extent of the COC plumes in certain areas may be subject to additional interpretation.

We have attempted to use a comprehensive and approximately contemporaneous dataset for the development of 3D interpretations of plume maps and chemical cross sections for individual COCs. The use of any water-quality data from a particular well or series of wells, however, does not necessarily indicate that such well is impacted by contaminants originating from a source identified by EPA as a PRP in the BPOU.

## **6.0 REFERENCES**

AMEC Environment & Infrastructure, Inc. (AMEC), 2013, Performance Standards Evaluation Plan, Rev.4, 18 April 2013.

Geomatrix, 2004, Technical Memorandum – Response to Requested Modification #3 to the Revised Final Performance Standards Evaluation Plan, 17 February 2004.

## **TABLES**

**TABLE A-1**  
**WATER QUALITY MONITORING DATA FOR PLUME MODELING**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Well Name	Site ID	Port <sup>a</sup>	Date	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Carbon Tetrachloride (µg/L)	N-Nitrodimethylamine (ug/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
<b>Federal or California State MCL (NL) [SMCL]<sup>b</sup></b>				<b>0.5</b>	<b>(1)</b>	<b>0.5</b>	<b>(0.01)</b>	<b>6</b>	<b>5</b>	<b>5</b>
AJ MW-2R	W11AJMW2R		05/23/13	<b>0.74</b>	<b>2.4</b>	<b>1.8</b>	<b>0.049</b>	<b>270</b>	<b>62</b>	<b>160</b>
AJ MW-4	W11AJMW4		05/23/13	0.5 U	1.0 U	<b>1.3</b>	0.002 U	<b>200</b>	<b>23</b>	<b>140</b>
AJ MW-6	W11AJMW6		05/23/13	<b>0.55</b>	1.0 U	<b>0.51</b>	0.002 U	<b>230</b>	4.3	<b>65</b>
ALR MW-1R	W11AZW1R		06/24/13	<b>0.75</b>	<b>12</b>	0.5 U	0.0032	2 U	<b>5.1</b>	<b>55</b>
ALR MW-8	W11AZW08		06/24/13	0.5 U	0.49	0.5 U	0.00077	1.9	1.7	<b>7.6</b>
ALR MW-9	W11AZW09		06/24/13	0.5 U	<b>1.1</b>	0.5 U	<b>0.44</b>	5.1	<b>150</b>	<b>26</b>
CC E DURBIN	01902920		05/24/13	0.5 U	--	0.5 U	0.00096 J	2.3	<b>36</b>	<b>22</b>
CDWC 14	08000174		06/03/13	0.5 U	--	0.5 U	0.002 U	<b>15</b>	<b>6.5</b>	<b>7.5</b>
CDWC 2	01901181		06/03/13	--	--	0.5 U	0.002 U	2.6	1.2	0.86
CDWC 3	01903057		06/03/13	0.5 U	--	<b>1.9</b>	<b>0.013</b>	<b>11</b>	<b>26</b>	<b>36</b>
CDWC 5A	08000100		06/03/13	--	--	0.5 U	0.002 U	0.52	<b>5.3</b>	<b>6.1</b>
CDWC 6	01902967		06/03/13	--	--	0.5 U	0.002 U	4.9	<b>20</b>	<b>21</b>
CDWC 8	01903081		07/01/13	--	--	0.5 U	0.002 U	2.6	1.6	0.5 U
CIC BALDWIN 1	01900885		05/21/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
COI 5	08000097		06/04/13	0.5 U	0.5 U	0.5 U	0.002 U	4.9	<b>5.8</b>	2.8
EPA MW 5-01	EPAW501	Port 13	05/17/13	0.5 U	0.5 U	0.5 U	0.002 U	5.3	1 U	1 U
EPA MW 5-01		Port 12	05/17/13	0.5 U	0.5 U	0.5 U	0.0010 J	1.2 J	1 U	1 U
EPA MW 5-01		Port 11	05/17/13	0.5 U	0.5 U	0.5 U	0.0011 J	1.2 J	1 U	1 U
EPA MW 5-01		Port 10	05/17/13	0.5 U	0.5 U	0.5 U	0.00087 J	1.3 J	1 U	1 U
EPA MW 5-01		Port 9	05/17/13	0.5 U	0.5 U	0.5 U	0.0013 J	3.8	1 U	1 U
EPA MW 5-01		Port 8	05/17/13	0.5 U	--	0.5 U	0.0014 J	<b>13</b>	0.51 J	0.77 J
EPA MW 5-01		Port 7	05/17/13	0.5 U	--	0.5 U	0.0015 J	4.7	1 U	1.7 J
EPA MW 5-01		Port 6	05/17/13	0.5 U	--	0.5 U	0.0011 J	<b>8.9</b>	1 U	1 U
EPA MW 5-01		Port 5	05/17/13	0.5 U	--	0.5 U	0.002 U	<b>14</b>	1 U	1.4
EPA MW 5-01		Port 4	05/17/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
EPA MW 5-01		Port 3	05/17/13	0.5 U	--	0.5 U	0.00060 J	2 U	1 U	1 U
EPA MW 5-01		Port 2	05/17/13	0.5 U	--	0.5 U	0.0037	2 U	1 U	1 U
EPA MW 5-01		Port 1	05/17/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
HARTWELL MW-1	V10ACMW1		05/08/13	0.5 U	--	--	--	--	1 U	1 U
HUFFY MW-1	W10BDMW1		--	--	--	--	--	--	--	--
HUFFY MW-2	W10BDMW2		05/29/13	0.5 U	--	0.5 U	--	--	<b>24.2</b>	<b>157</b>
LACO KEY	Z1000006		05/22/13	0.5 U	<b>12</b>	0.5 U	0.00071 J	<b>21</b>	<b>18</b>	<b>27</b>
LACO SANTA FE	08000070		05/21/13	0.5 U	0.5 U	0.5 U	0.00052 J	2 U	1 U	1 U
LPVCWD 2	01901460		06/14/13	<b>2.3</b>	<b>1.5</b>	<b>2.8</b>	<b>0.16</b>	<b>54</b>	2.7	<b>76</b>
LPVCWD 3	01902859		06/14/13	0.5 U	0.5 U	0.5 U	0.002 U	<b>9.7</b>	0.5 U	1.4
LPVCWD 5	08000209		06/03/13	0.5 U	0.5 U	0.5 U	<b>0.019</b>	<b>17</b>	0.90	<b>10</b>

**TABLE A-1**  
**WATER QUALITY MONITORING DATA FOR PLUME MODELING**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Well Name	Site ID	Port <sup>a</sup>	Date	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Carbon Tetrachloride (µg/L)	N-Nitrodimethylamine (ug/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
<b>Federal or California State MCL (NL) [SMCL]<sup>b</sup></b>				<b>0.5</b>	<b>(1)</b>	<b>0.5</b>	<b>(0.01)</b>	<b>6</b>	<b>5</b>	<b>5</b>
MW 5-03	BPW503	Port 10	DRY	--	--	--	--	--	--	--
MW 5-03		Port 9	05/10/13	0.5 U	<b>6.8</b>	0.5 U	0.0024	2 U	1.7	<b>11</b>
MW 5-03		Port 8	05/10/13	0.5 U	0.5 U	0.5 U	0.002 U	1.9 J	1.6	<b>11</b>
MW 5-03		Port 7	05/10/13	0.5 U	0.5 U	0.5 U	0.002 U	1.8 J	1.8	2.0
MW 5-03		Port 6	05/10/13	0.5 U	0.5 U	0.5 U	0.002 U	3.7	2.4	1.0
MW 5-03		Port 5	05/10/13	0.5 U	--	0.5 U	0.002 U	<b>9.8</b>	1.0	0.52 J
MW 5-03		Port 4	05/10/13	0.5 U	--	0.5 U	0.00075 J	<b>7.7</b>	0.50 J	1 U
MW 5-03		Port 3	05/10/13	0.5 U	--	0.5 U	0.002 U	<b>7.8</b>	1 U	1 U
MW 5-03		Port 2	05/10/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-03		Port 1	05/10/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1.3
MW 5-05	BPW505	Port 4	05/08/13	0.5 U	<b>1.2</b>	0.5 U	0.002 U	<b>12</b>	<b>8.8</b>	<b>28</b>
MW 5-05		Port 3	05/08/13	<b>2.0</b>	<b>15</b>	<b>0.69</b>	<b>0.083</b>	<b>59</b>	<b>140</b>	<b>200</b>
MW 5-05		Port 2	05/08/13	<b>3.2</b>	<b>14</b>	<b>1.5</b>	<b>0.16</b>	<b>74</b>	<b>250</b>	<b>230</b>
MW 5-05		Port 1	05/08/13	<b>4.9</b>	<b>6.7</b>	<b>5.4</b>	<b>0.38</b>	<b>230</b>	<b>38</b>	<b>170</b>
MW 5-08	BPW508	Port 4	05/08/13	<b>0.71</b>	<b>4.3</b>	0.5 U	0.0039	<b>12</b>	<b>79</b>	<b>120</b>
MW 5-08		Port 3	05/08/13	0.5 U	0.5 U	<b>0.84</b>	0.002 U	2 U	3.5 U	4.3 U
MW 5-08		Port 2	05/08/13	0.5 U	0.5 U	<b>0.50</b>	0.002 U	2 U	4.5 U	4.8
MW 5-08		Port 1	05/08/13	0.5 U	--	0.5 U	0.002 U	2 U	1.0 U	1.0 U
MW 5-11	BPW511	Port 3	05/13/13	0.5 U	<b>3.7</b>	0.5 U	0.002 U	<b>33</b>	<b>14</b>	<b>8.9</b>
MW 5-11		Port 2	05/13/13	0.5 U	0.14 J	0.5 U	0.0014 J	1.4 J	<b>63</b>	<b>54</b>
MW 5-11		Port 1	05/13/13	0.5 U	0.21 J	0.5 U	0.002 U	1.5 J	<b>12</b>	2.9
MW 5-13	BPW513	Port 3	05/14/13	0.5 U	<b>3.6</b>	0.5 U	0.00066 J	<b>22</b>	<b>5.0</b>	3.7
MW 5-13		Port 2	05/14/13	0.5 U	0.51	0.5 U	0.0011 J	2 U	<b>29</b>	<b>51</b>
MW 5-13		Port 1	05/14/13	0.5 U	0.5 U	0.5 U	0.0011 J	1.1 J	1.8	0.76 J
MW 5-15	BPW515	Port 3	05/15/13	0.5 U	0.92	0.5 U	0.002 U	<b>12</b>	3.6	<b>10</b>
MW 5-15		Port 2	05/15/13	0.5 U	<b>9.6</b>	0.5 U	<b>0.016</b>	<b>16</b>	<b>27</b>	<b>38</b>
MW 5-15		Port 1	05/15/13	<b>2.8</b>	<b>2.2</b>	<b>2.0 J</b>	<b>0.11</b>	<b>54</b>	<b>13</b>	<b>120</b>
MW 5-17	BPW517	Port 3	05/30/13	0.5 U	<b>3.4</b>	0.5 U	0.002 U	<b>8.4</b>	<b>30</b>	<b>9.1</b>
MW 5-17		Port 2	05/30/13	0.5 U	0.5 U	0.5 U	0.002 U	2 U	<b>14</b>	<b>20</b>
MW 5-17		Port 1	05/30/13	0.5 U	0.5 U	0.5 U	0.002 U	2.5	2.1	0.68 J
MW 5-18	BPW518	Port 3	05/09/13	0.5 U	0.5 U	0.5 U	0.002 U	2 U	0.99 J	1.7
MW 5-18		Port 2	05/09/13	0.5 U	0.5 U	0.5 U	0.002 U	2.9	0.97 J	1 U
MW 5-18		Port 1	05/09/13	0.5 U	--	0.5 U	0.002 U	3.5	1 UJ	1 U
MW 5-19	BPW519	Port 6	05/16/13	0.5 U	0.14 J	0.5 U	0.002 U	2.0	1 U	1 U
MW 5-19		Port 5	05/16/13	0.5 U	0.29 J	<b>0.98 J</b>	0.0012 J	<b>15</b>	<b>6.4</b>	<b>13</b>
MW 5-19		Port 4	05/16/13	<b>0.93</b>	0.98	<b>1.9 J</b>	<b>0.11</b>	<b>23</b>	<b>7.4</b>	<b>28</b>

**TABLE A-1**  
**WATER QUALITY MONITORING DATA FOR PLUME MODELING**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Well Name	Site ID	Port <sup>a</sup>	Date	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Carbon Tetrachloride (µg/L)	N-Nitrodimethylamine (ug/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
<b>Federal or California State MCL (NL) [SMCL]<sup>b</sup></b>				<b>0.5</b>	<b>(1)</b>	<b>0.5</b>	<b>(0.01)</b>	<b>6</b>	<b>5</b>	<b>5</b>
MW 5-19		Port 3	11/05/13	0.36 J	--	4.2	0.010 U	12	4.9	17
MW 5-19		Port 2	05/16/13	0.5 U	--	0.5 U	0.00068 J	2 U	1 U	1 U
MW 5-19		Port 1	05/16/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-20	BPW520	Port 7	05/31/13	0.5 U	--	0.5 U	0.002 U	6.5	1.6	3.5
MW 5-20		Port 6	05/31/13	0.5 U	--	0.5 U	0.002 UJ	19	1 U	0.90 J
MW 5-20		Port 5	05/31/13	0.89	0.21 J	0.76	0.099 J	15	0.89 J	13
MW 5-20		Port 4	05/31/13	5.1	2.9	2.8	0.39	100	6.2	91
MW 5-20		Port 3	05/31/13	6.0	4.2	6.4	0.37	160	15	180
MW 5-20		Port 2	05/31/13	0.5 U	0.23 J	2.6	0.021 J	11	1.5	10
MW 5-20		Port 1	05/31/13	0.76	--	5.3	0.013 J	31	1 U	22
MW 5-22	BPW522	Port 6	05/20/13	0.5 U	--	0.5 U	0.002 U	3.6	5.0	2.2
MW 5-22		Port 5	05/20/13	0.5 U	--	0.5 U	0.00066 J	5.9	0.77 J	0.49 J
MW 5-22		Port 4	05/20/13	0.5 UJ	--	0.5 UJ	0.0018 J	2.5	1 UJ	1.3 J
MW 5-22		Port 3	05/20/13	0.5 U	--	9.3	0.55	110	11	100
MW 5-22		Port 2	05/20/13	0.5 U	--	4.5	0.0010 J	4.0	1 U	2.3
MW 5-22		Port 1	05/29/13	0.5 UJ	--	1.3 J	0.0019 J	2 U	1 UJ	1 UJ
MW 5-23	BPW523	Port 6	05/15/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-23		Port 5	05/15/13	0.5 U	0.10 J	0.5 U	0.002 U	16	2.2	2.5
MW 5-23		Port 4	05/15/13	0.5 U	2.0	1.8 J	0.97	59	1.6	32
MW 5-23		Port 3	05/15/13	3.7	4.6	2.1 J	0.51	120	14	110
MW 5-23		Port 2	05/15/13	0.5 U	0.5 U	6.6 J	0.0034 U	3.6	0.86 J	3.8
MW 5-23		Port 1	05/15/13	0.5 U	--	6.6 J	0.002 U	1.9 J	1.1	3.6
MW 5-24	BPW524	Port 7	05/13/13	0.5 U	3.2	0.5 U	0.002 U	8.0	51	26
MW 5-24		Port 6	05/13/13	0.82	1.3	1.8 J	0.030	22	260	160
MW 5-24		Port 5	05/13/13	0.88	0.64	0.79 J	0.0051	9.0	260	180
MW 5-24		Port 4	05/13/13	0.5 U	0.58	0.71 J	0.002 U	1.9 J	94	150
MW 5-24		Port 3	05/13/13	0.5 U	0.13 J	0.5 U	0.0038	2 U	5.0	11
MW 5-24		Port 2	05/13/13	0.5 U	9.6	0.5 U	0.0049	2 U	1 U	1 U
MW 5-24		Port 1	05/13/13	0.5 U	10	0.5 U	0.0026	2 U	1 U	1 U
MW 5-25	BPW525	Port 7	05/14/13	0.5 U	--	0.5 U	0.002 U	1.6 J	1 U	1 U
MW 5-25		Port 6	05/14/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-25		Port 5	05/14/13	0.5 U	0.5 U	0.5 U	0.002 U	16	0.87 J	1 U
MW 5-25		Port 4	05/14/13	0.5 U	0.5 U	0.5 U	0.002 U	20	0.87 J	0.46 J
MW 5-25		Port 3	05/14/13	0.5 U	0.5 U	0.5 U	0.002 U	19	0.95 J	1 U
MW 5-25		Port 2	05/14/13	0.5 U	0.5 U	0.5 U	0.002 U	4.3	1 U	1 U
MW 5-25		Port 1	05/14/13	0.5 U	0.5 U	2.6 J	0.0018 J	1.2 J	1 U	1 U

**TABLE A-1**  
**WATER QUALITY MONITORING DATA FOR PLUME MODELING**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Well Name	Site ID	Port <sup>a</sup>	Date	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Carbon Tetrachloride (µg/L)	N-Nitrodimethylamine (ug/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
<b>Federal or California State MCL (NL) [SMCL]<sup>b</sup></b>				<b>0.5</b>	<b>(1)</b>	<b>0.5</b>	<b>(0.01)</b>	<b>6</b>	<b>5</b>	<b>5</b>
MW 5-26	BPW526	Port 7	05/16/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-26		Port 6	05/16/13	0.5 UJ	--	0.5 UJ	0.0025	2 U	1 UJ	1 UJ
MW 5-26		Port 5	05/16/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-26		Port 4	05/16/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-26		Port 3	05/16/13	0.5 U	--	0.5 U	0.00056 J	2 U	1 U	1 U
MW 5-26		Port 2	05/16/13	0.5 UJ	--	0.5 UJ	0.002 U	2 U	1 UJ	1 UJ
MW 5-26		Port 1	05/16/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-27	BPW527	Port 7	05/09/13	0.5 U	--	0.5 U	0.002 U	2 U	1 UJ	1 U
MW 5-27		Port 6	05/09/13	0.5 U	--	0.5 U	0.002 U	2 U	1 UJ	1 U
MW 5-27		Port 5	05/09/13	0.5 U	--	0.5 U	0.0017 J	2 U	1 UJ	1 U
MW 5-27		Port 4	05/09/13	0.5 U	--	0.5 U	0.002 U	2 U	1 UJ	1 U
MW 5-27		Port 3	05/09/13	0.5 U	--	0.5 U	0.002 U	2 U	1 UJ	1 U
MW 5-27		Port 2	05/09/13	0.5 U	--	0.5 U	0.00052 J	2 U	1 UJ	1 U
MW 5-27		Port 1	05/09/13	0.5 U	--	0.5 U	0.002 U	2 U	1 UJ	1 U
MW 5-28D	BPW528D		05/24/13	0.5 U	0.5 U	0.5 U	0.002 U	2 U	1 U	1 U
MW 5-28I	BPW528I		05/24/13	0.5 U	0.5 U	0.5 U	0.002 U	3.1	1 U	1 U
MW 5-28S	BPW528S		05/24/13	0.5 U	0.5 U	0.5 U	0.002 U	<b>10</b>	1 U	1 U
SA1-1	08000185		05/22/13	0.5 UJ	0.60	0.5 UJ	0.0096	<b>7.7</b>	1.7 J	1.4 J
SA1-2 <sup>c</sup>	08000186		--	--	--	--	--	--	--	--
SA1-3 (LANTE)	08000060		06/18/13	0.5 U	<b>2.1</b>	0.5 U	0.0056	<b>10</b>	<b>65</b>	<b>35</b>
SGVWC B25A	08000187		03/04/13	0.5 U	<b>1.0</b>	<b>0.72</b>	0.0055	<b>19</b>	<b>19</b>	<b>26</b>
SGVWC B25B	08000188		03/04/13	0.5 U	0.64	<b>5.7</b>	0.0020 U	2.5	0.50	2.8
SGVWC B26A	08000189		03/04/13	<b>2.4</b>	<b>1.8</b>	<b>2.1</b>	<b>0.23</b>	<b>53</b>	4.8	<b>44</b>
SGVWC B26B	08000190		03/04/13	<b>2.1</b>	<b>2.0</b>	<b>15</b>	<b>0.075</b>	<b>48</b>	1.7	<b>58</b>
SGVWC B5B	61900719		06/04/13	0.5 U	0.55	0.29 J	<b>0.013</b>	<b>10</b>	2.0	2.9
SGVWC B5D	08000160		06/04/13	0.5 U	0.5 U	<b>0.82</b>	0.0020 U	2 U	0.5 U	0.5 U
SGVWC B5E	08000205		06/04/13	0.5 U	0.52	<b>2.6</b>	<b>0.11</b>	<b>17</b>	2.4	<b>14</b>
SGVWC B6C	71903093		05/16/13	0.5 U	--	0.5 U	<b>0.021</b>	<b>19</b>	0.5 U	2.9
SGVWC B6D	78000098		05/21/13	<b>1.8</b>	<b>1.5</b>	<b>2.0</b>	<b>0.10</b>	<b>49</b>	4.9	<b>61</b>
SWS 121W1	08000181		06/07/13	0.5 U	--	0.5 U	0.0020 U	4.0	0.5 U	0.5 U
SWS 139W2	01901599	93.2	05/23/13	0.5 U	--	0.5 U	0.0029	<b>26</b>	1 U	1 U
SWS 139W2		-1.8	--	--	--	--	--	--	--	--
SWS 139W6	08000152		05/23/13	0.5 U	--	0.5 U	0.002 U	<b>7.9</b>	1 U	1 U
SWS 140W5	08000145		05/21/13	0.5 U	--	<b>0.57</b>	<b>0.015</b>	<b>11</b>	1 U	<b>10</b>
SWS 142W2	08000183		06/07/13	0.5 U	--	0.5 U	0.002 U	3.2	0.5 U	0.5 U
SWS 151W2	08000207		06/07/13	0.5 U	--	0.5 U	0.002 U	2.1	0.5 U	0.63

**TABLE A-1**  
**WATER QUALITY MONITORING DATA FOR PLUME MODELING**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Well Name	Site ID	Port <sup>a</sup>	Date	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Carbon Tetrachloride (µg/L)	N-Nitrodimethylamine (ug/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
<b>Federal or California State MCL (NL) [SMCL]<sup>b</sup></b>				<b>0.5</b>	<b>(1)</b>	<b>0.5</b>	<b>(0.01)</b>	<b>6</b>	<b>5</b>	<b>5</b>
VCWD BIG DALTON	01900035	92.7	05/23/13	0.5 U	0.5 U	0.5 U	0.0017 J	14	1 U	1 U
VCWD BIG DALTON		-42.3	05/23/13	0.5 U	0.5 U	0.5 U	0.00096 J	11	1 U	1 U
VCWD E MAINE	01900027		05/21/13	0.5 U	--	0.5 U	0.002 U	2 U	1 U	1 U
VCWD MORADA	01900029	54.4	05/22/13	0.5 U	0.14 J	0.5 U	0.002 U	6.1	0.97 J	0.47 J
VCWD MORADA		-25.6	05/22/13	0.5 U	0.14 J	0.5 U	0.002 U	6.1	1.1	0.49 J
VCWD PADDY LN	01900031	7.2	05/22/13	1.8	2.1	0.69	0.13	44	2.3	23
VCWD PADDY LN		-112.8	05/22/13	1.8	1.7	0.48 J	0.14	36	1.5	14
VCWD W MAINE	01900028		05/23/13	0.5 U	--	0.5 U	0.002 U	2 U	1.0	0.63 J
WHICO MP-1	W10WHMP1	Port 6	--	--	--	--	--	--	--	--
WHICO MP-1		Port 5	05/30/13	0.5 U	0.58	0.5 U	0.002 U	16	23	14
WHICO MP-1		Port 4	05/30/13	0.5 U	1.6	0.5 U	0.013	2.5	200	130
WHICO MP-1		Port 3	05/30/13	0.5 U	0.5 U	0.5 U	0.002 U	2 U	55	46
WHICO MP-1		Port 2	05/30/13	0.5 U	0.5 U	0.5 U	0.002 U	1.4 J	5.8	13
WHICO MP-1		Port 1	05/30/13	0.5 U	0.070 J	0.5 U	0.002 U	2 U	5.9	1.9

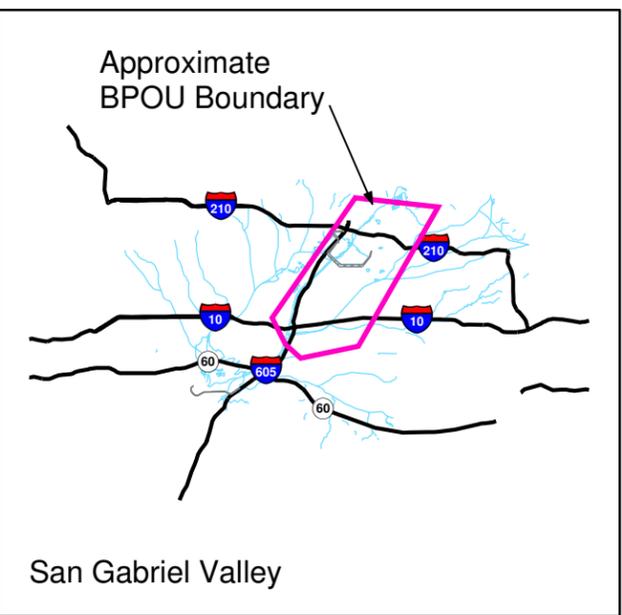
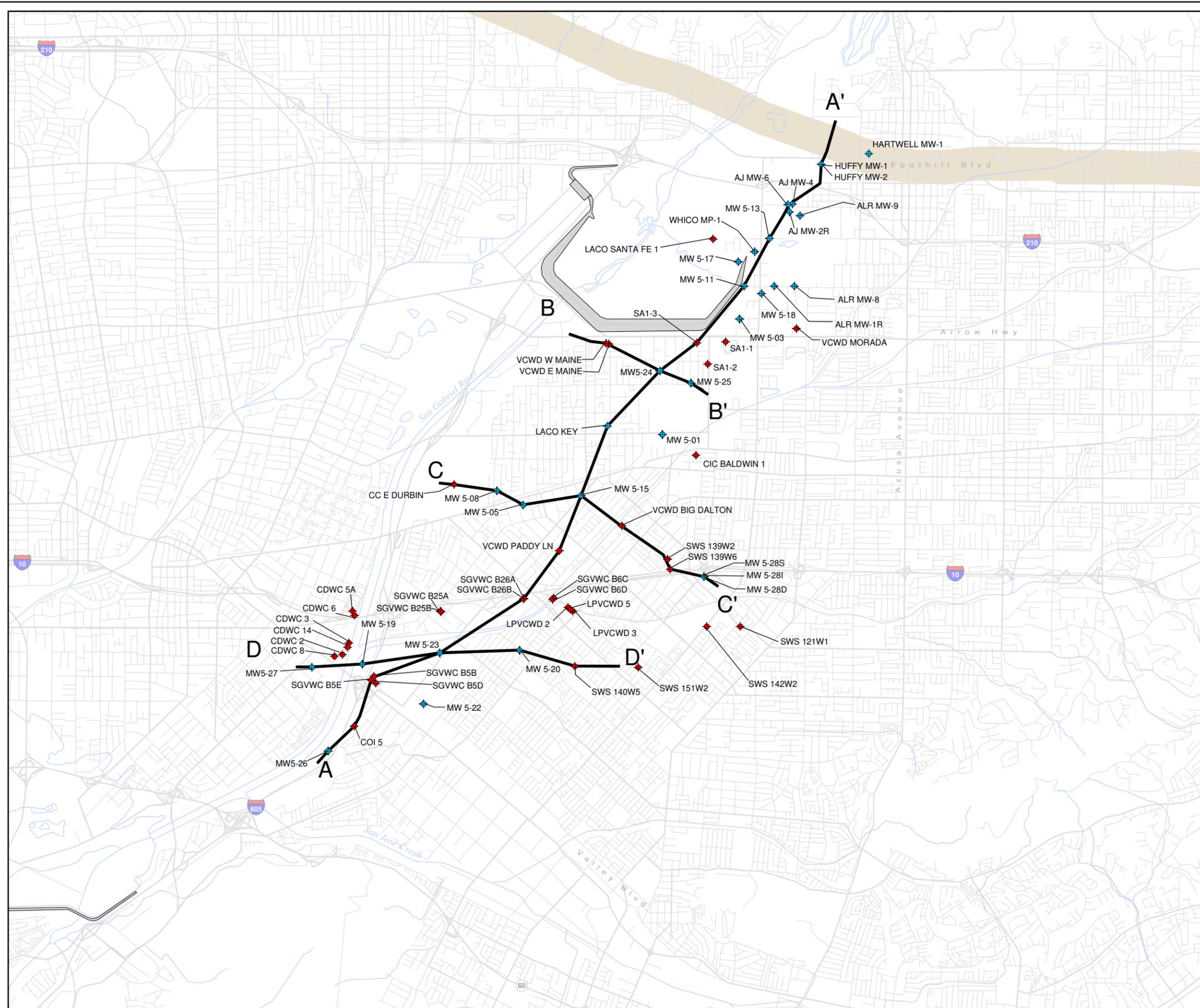
**Notes:**

- a. For inactive production wells, elevation in feet above mean sea level of discrete low-flow samples. -- Sample result unavailable.  
 b. Federal or California State Maximum Contaminant Level (MCL). U - Analyte not detected at the reported quantitation limit shown in the result.  
 c. Well inoperable in 2013.

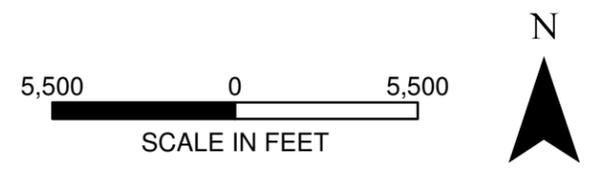
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.  
 UJ - Analyte not detected at the reported quantitation limit shown in the result; the reported quantitation limit is estimated.  
 Results in bold indicate MCL, NL, or SMCL exceeded.

## **FIGURES**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-01\_Well\_Loc.mxd



- EXPLANATION**
- A - A'** Cross section
  - ◆ Production well
  - ◆ Monitoring or multipoint well
  - Duarte Fault Zone



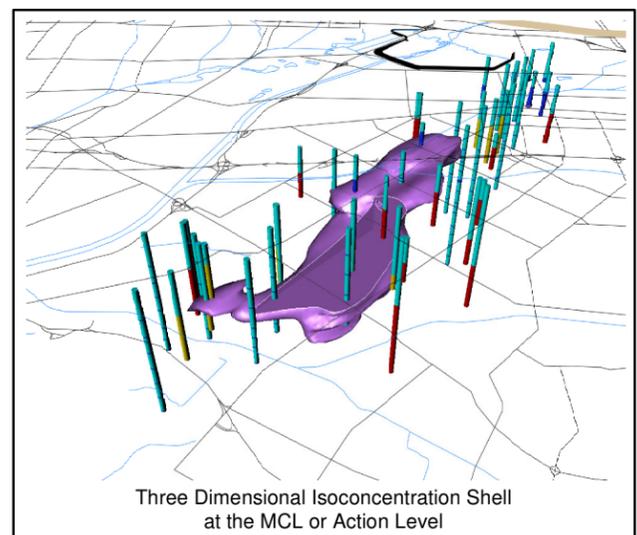
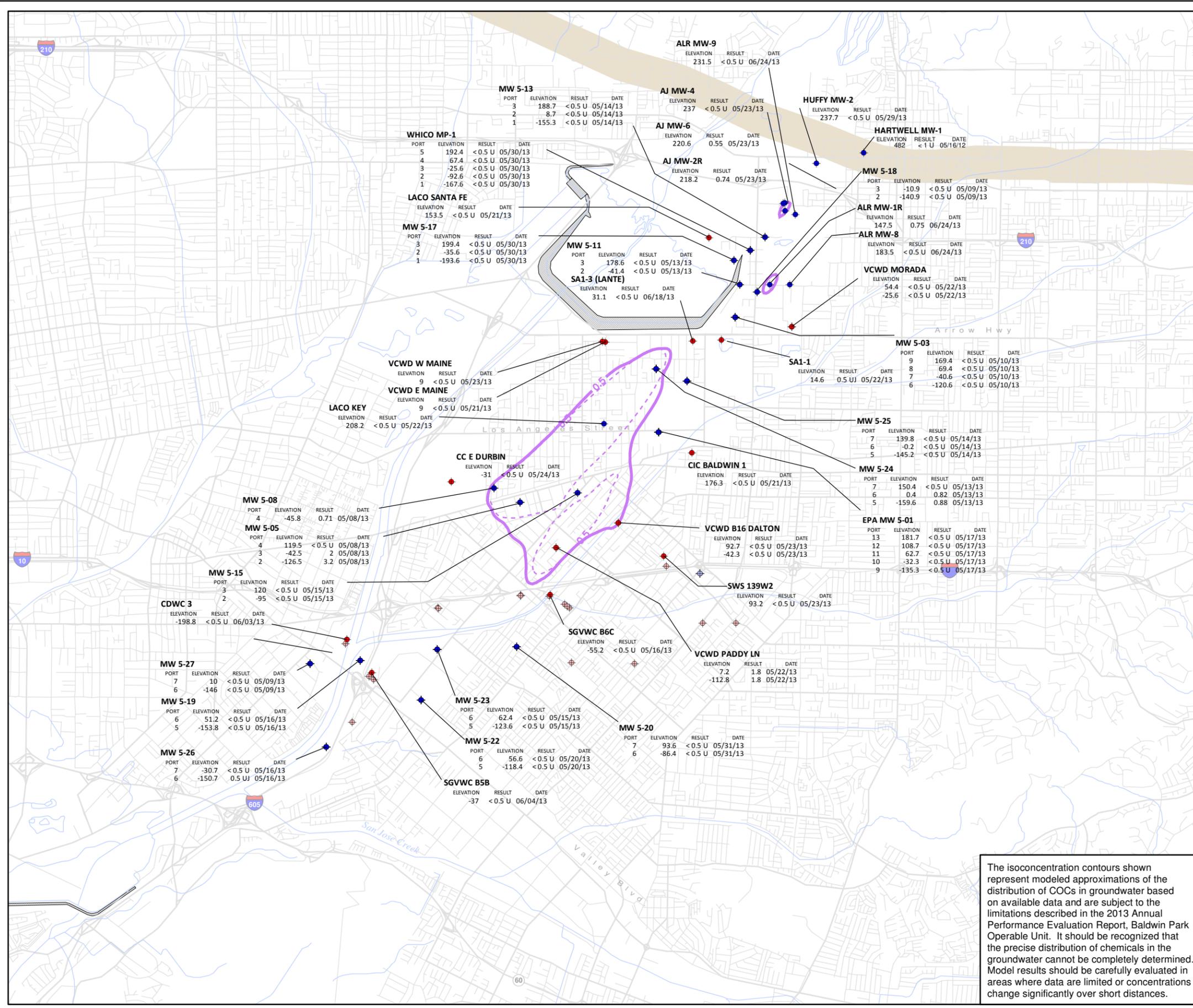
**WELL LOCATION MAP**  
Baldwin Park Operable Unit  
San Gabriel Valley, California



Project No. 475.0092.001

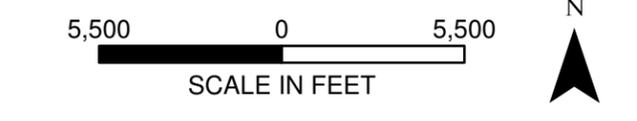
Figure **A-1**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A-02\_PlumeMap13\_12DCA\_sh.mxd



- EXPLANATION**
- ◆ Production well
  - ⊕ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ⊕ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,2-Dichloroethane isoconcentration contour at -50 feet (0.5 ug/L)
  - 1,2-Dichloroethane composite isoconcentration contour for the elevation interval above -200 feet (0.5 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.

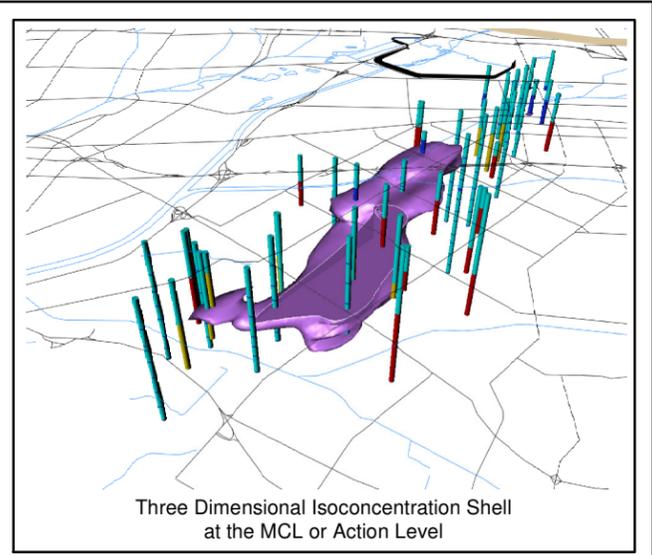
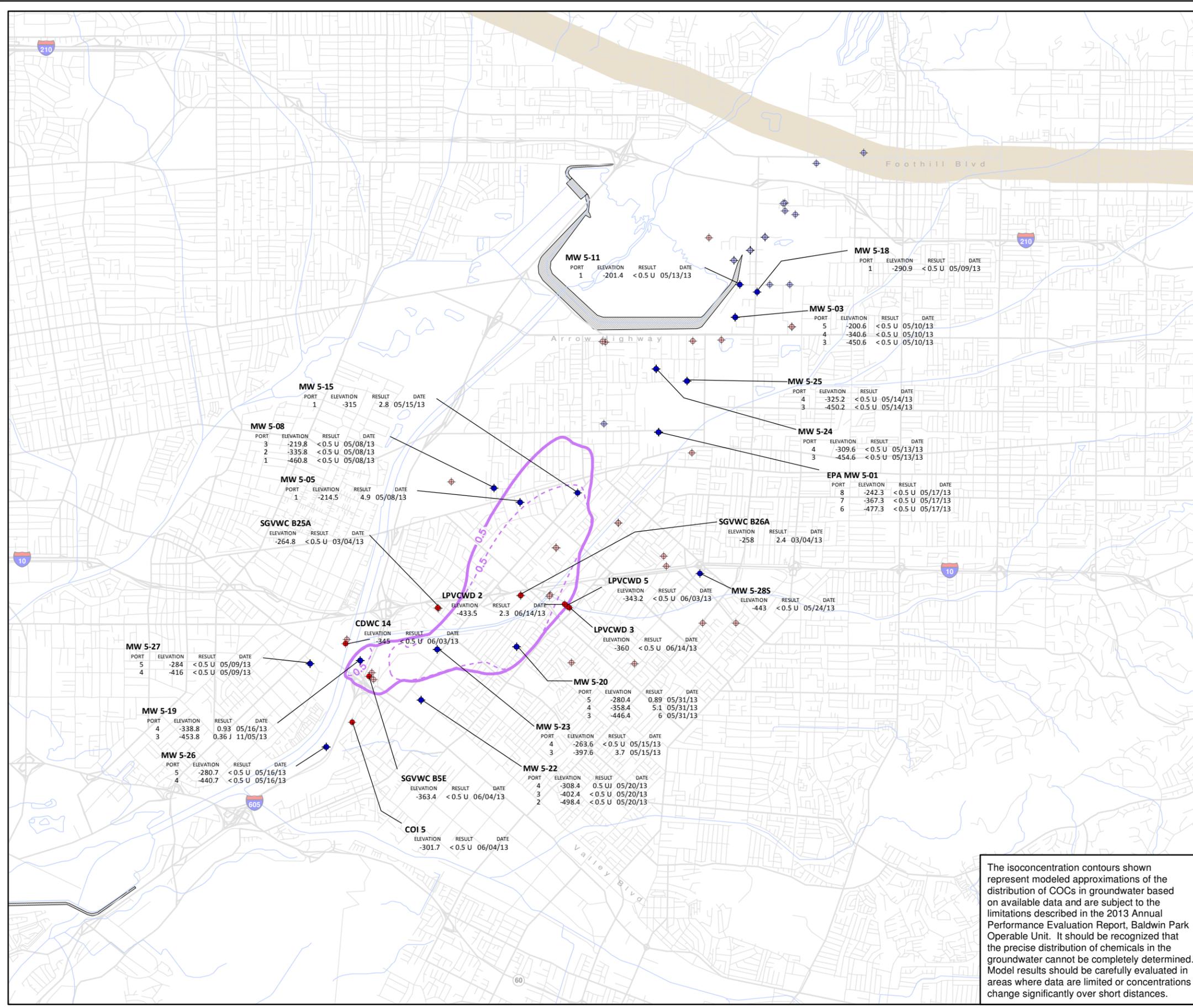


The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,2-DICHLOROETHANE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

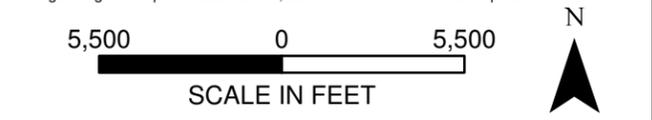
Project No. 475.0092.001  
Figure **A-2**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A-03 PlumMap13\_12DCA\_intl.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,2-Dichloroethane isoconcentration contour at -350 feet (0.5 ug/L)
  - 1,2-Dichloroethane composite isoconcentration contour for the elevation interval between -200 and -500 feet (0.5 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



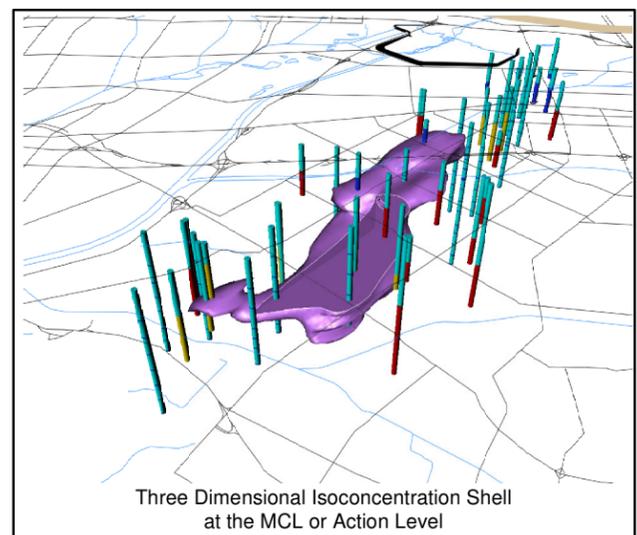
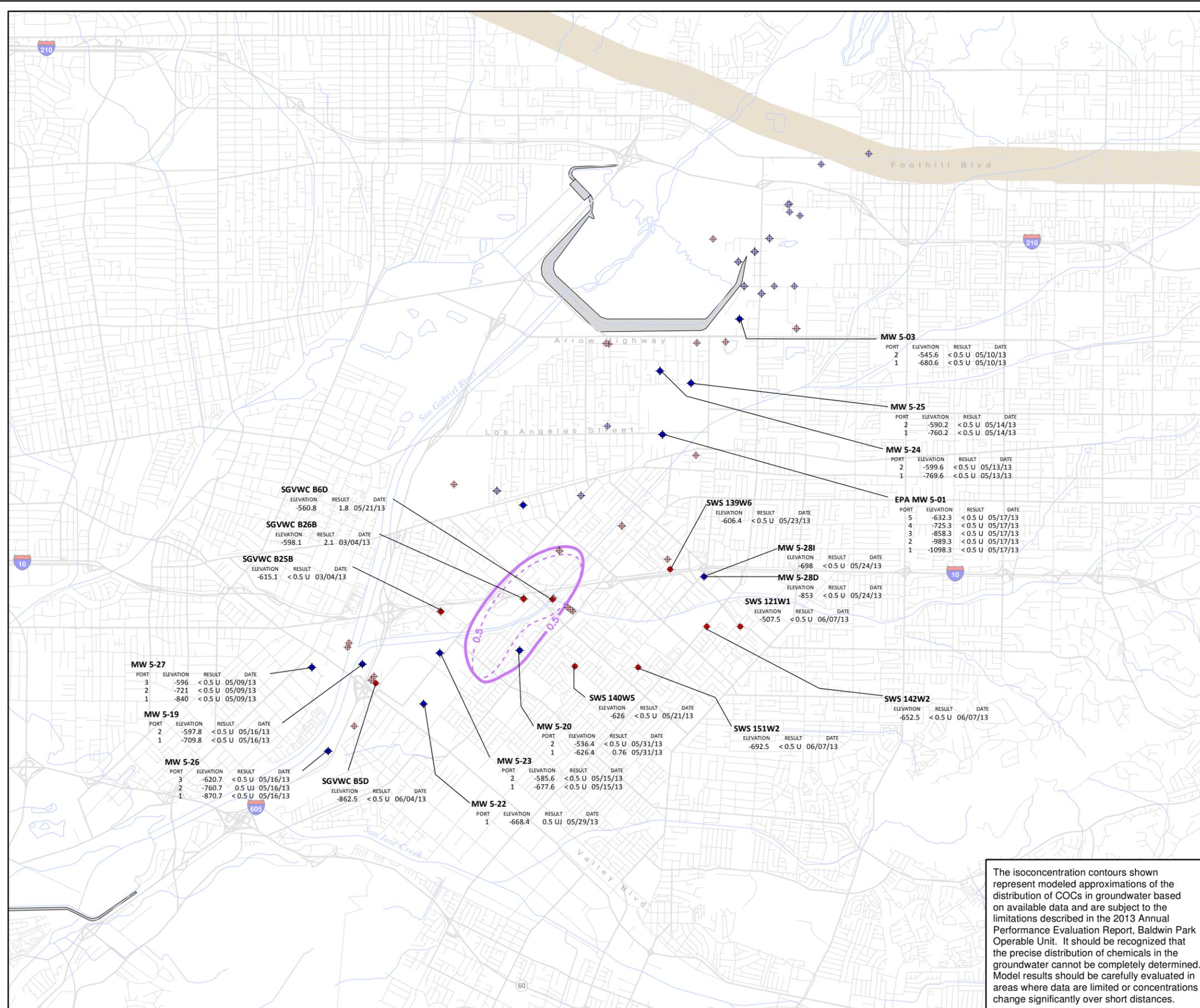
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,2-DICHLOROETHANE BETWEEN -200 AND -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

**NewFields**

Project No. 475.0092.001  
Figure **A-3**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-04\_PlumeMap13\_12DCA\_dp.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multiport well
  - ◆ Monitoring and multiport well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,2-Dichloroethane isoconcentration contour at -550 feet (0.5 ug/L)
  - 1,2-Dichloroethane composite isoconcentration contour for the elevation interval below -500 feet (0.5 ug/L)
  - Duarte Fault Zone

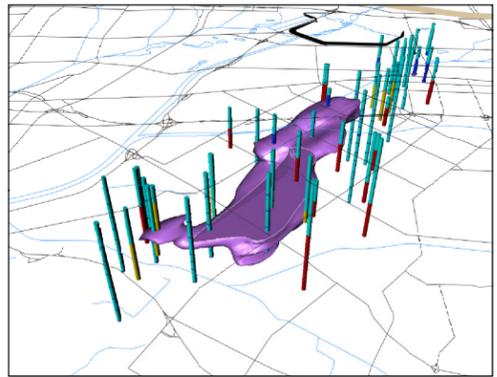
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,2-DICHLOROETHANE  
BELOW -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

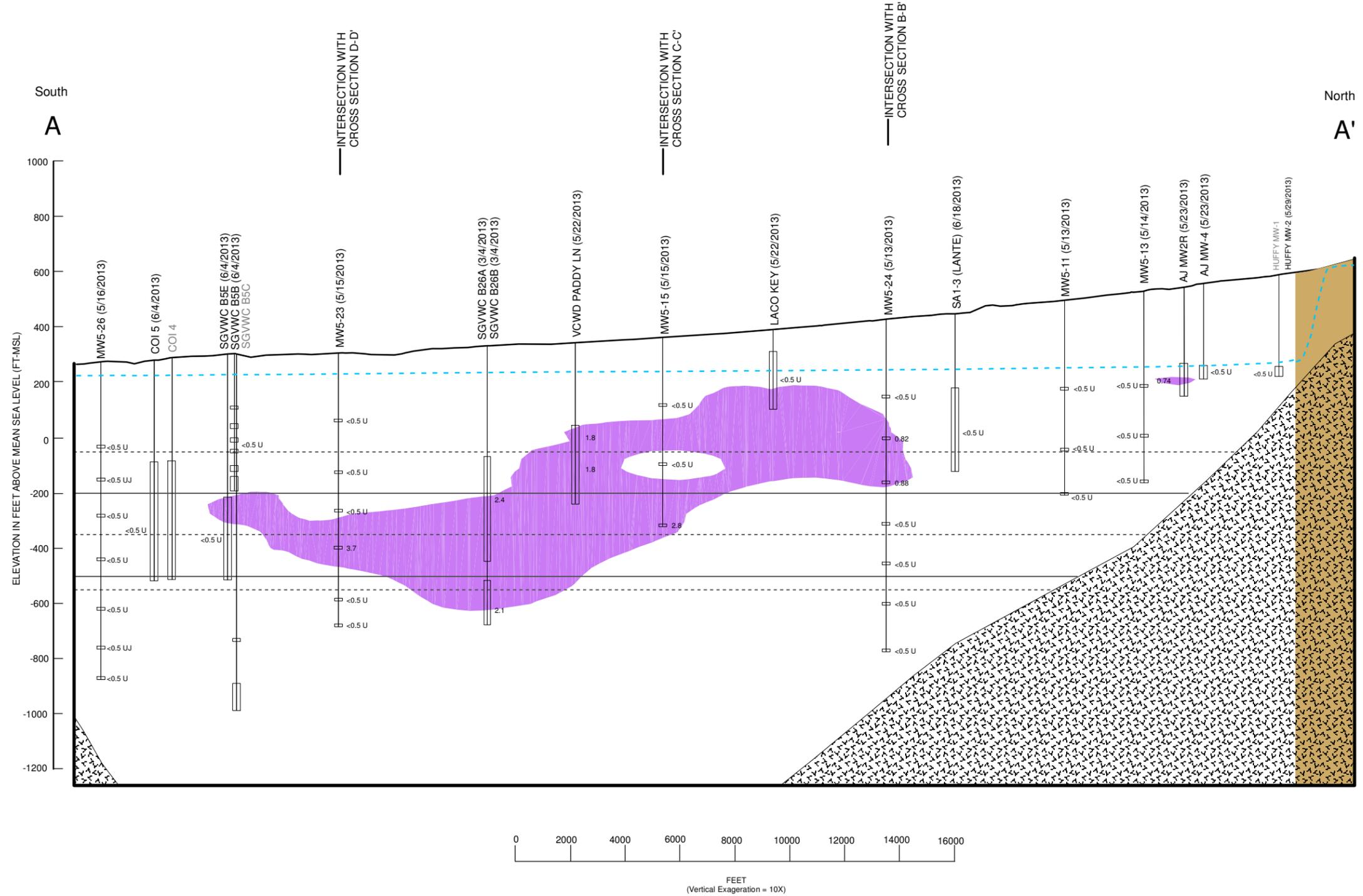
**NewFields** Project No. 475.0092.001  
Figure **A-4**



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >0.5 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- Discrete elevation (-50, -350 and -550 ft amsl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone



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The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

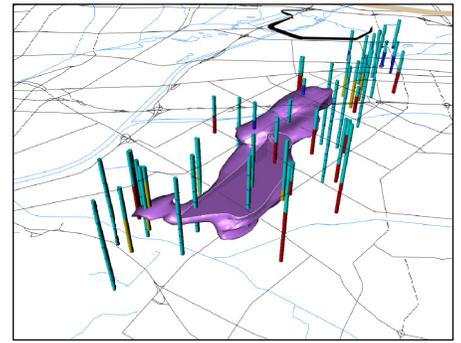
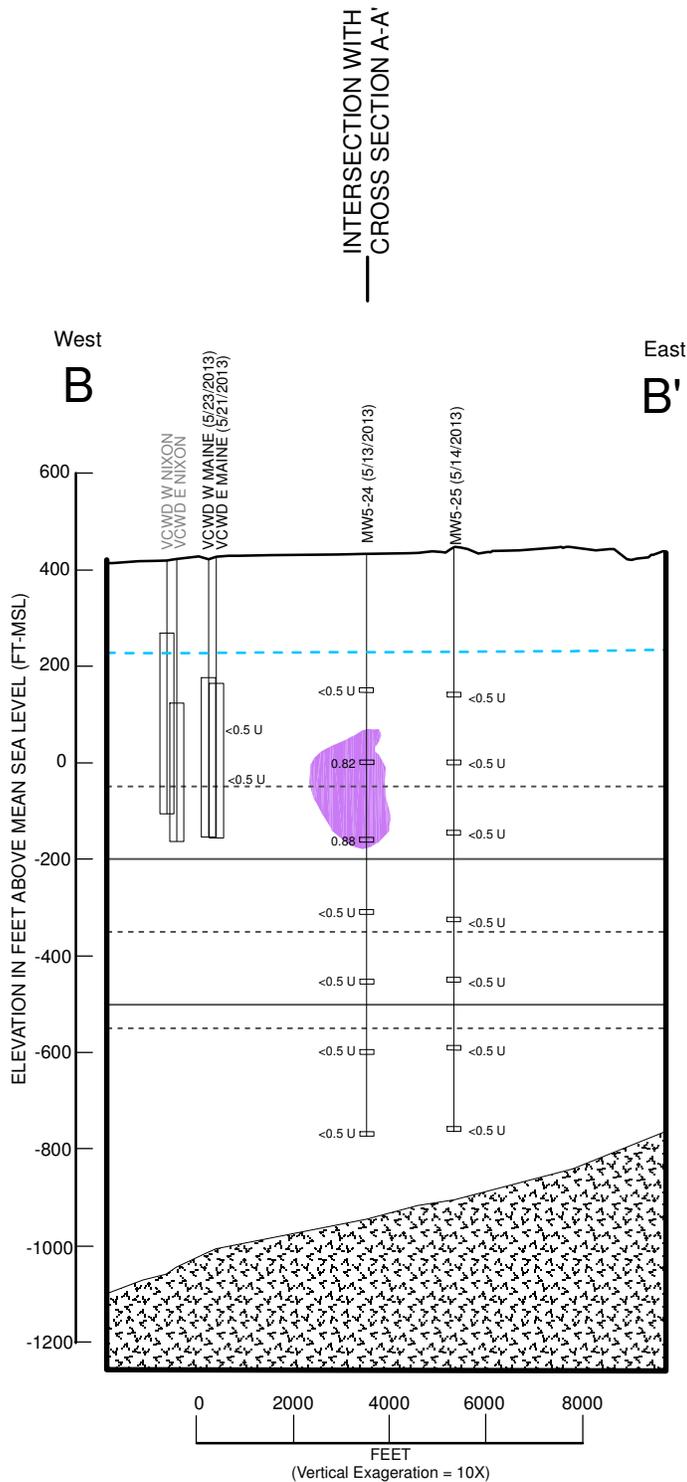
**VERTICAL DISTRIBUTION OF  
 1,2-DICHLOROETHANE, 2013  
 CROSS SECTION A-A'**

Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No. 475.0092.001

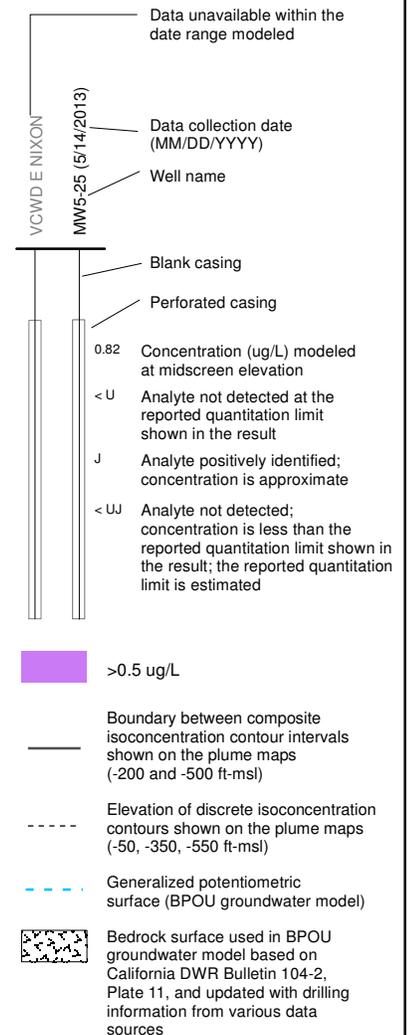
Figure **A-5**

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-06\_B\_CrossSection13\_12DCA.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

### EXPLANATION



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

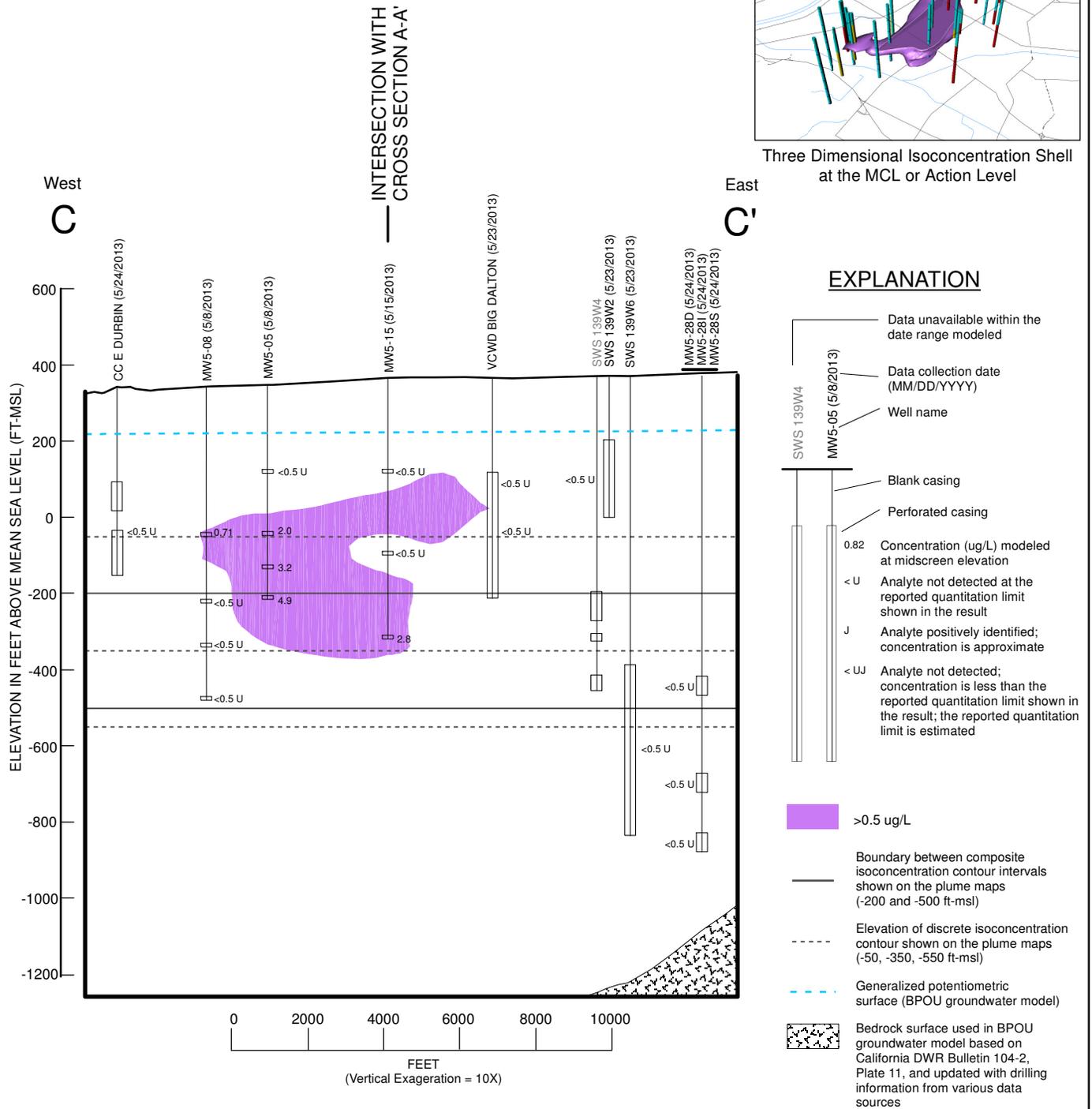
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
1,2-DICHLOROETHANE, 2013  
CROSS SECTION B-B'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-6**



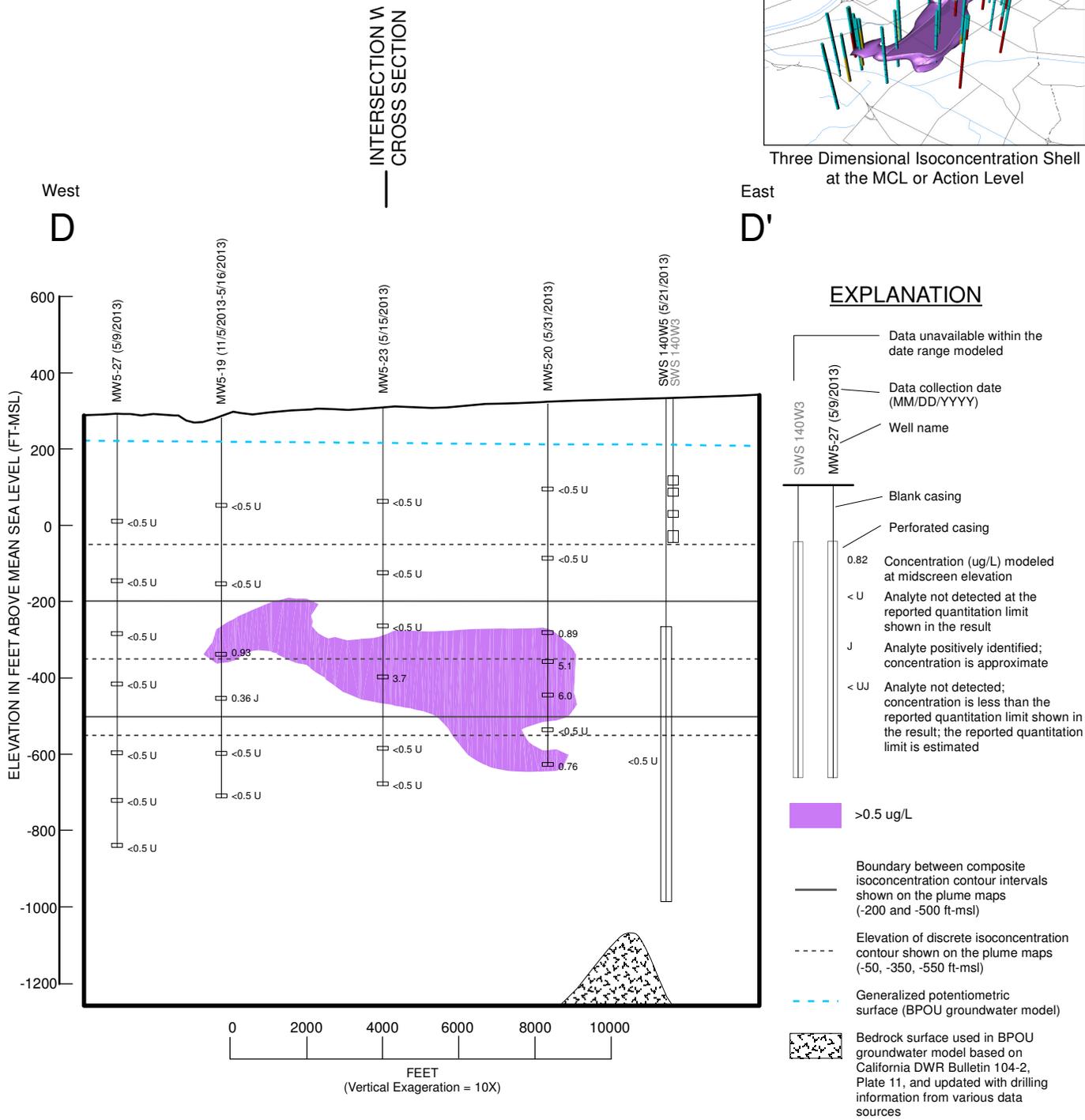
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
1,2-DICHLOROETHANE, 2013  
CROSS SECTION C-C'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

Path: L:\Team Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-08\_D\_CrossSection\3\_12DCA.mxd



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

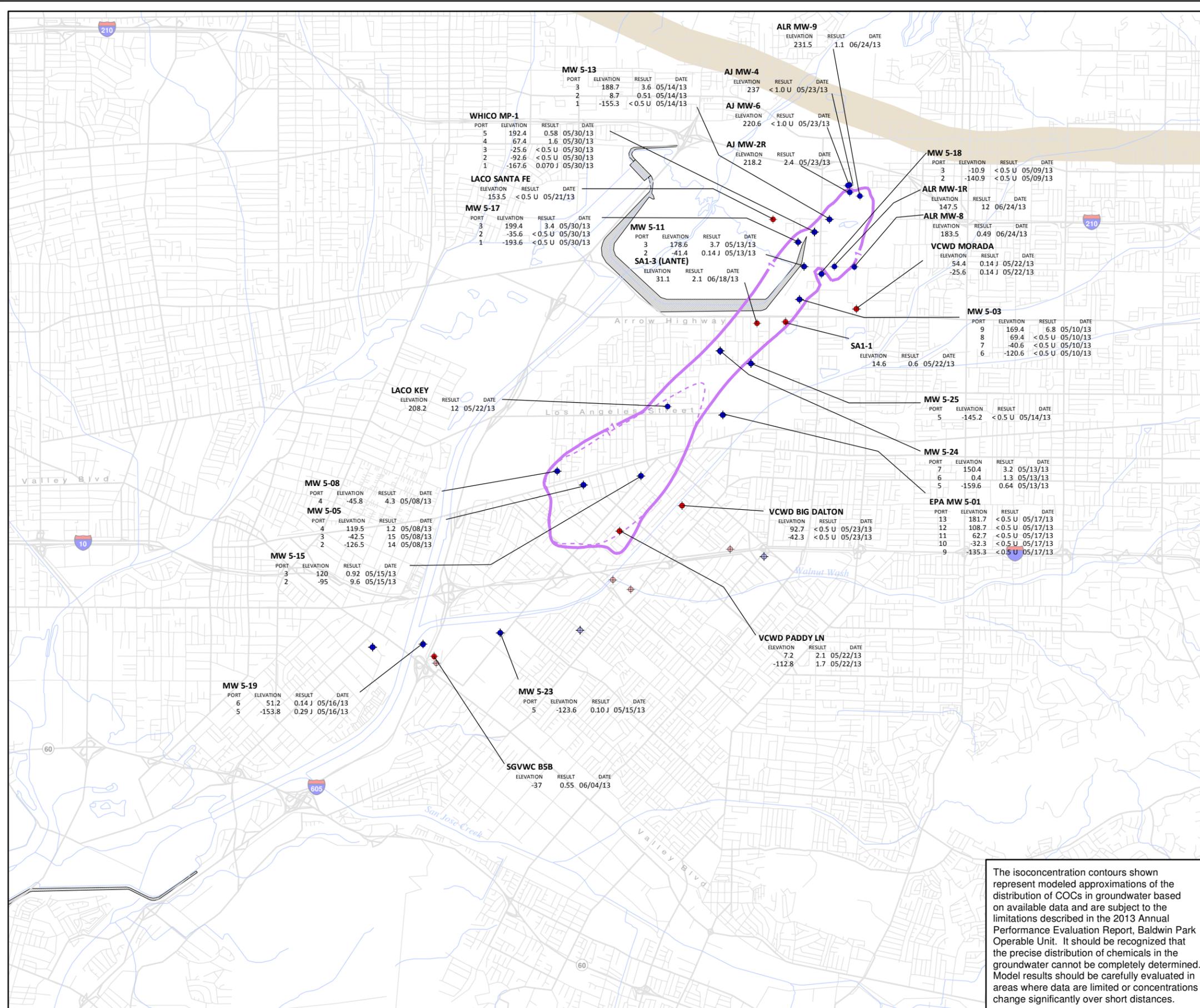
**VERTICAL DISTRIBUTION OF  
1,2-DICHLOROETHANE, 2013  
CROSS SECTION D-D'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-8**

Path: L:\Team\_Folders\Internal\BPOU\2013 Annual Report\_NF\Figures\GIS\Volume 2A-09\_Plumellap13\_14DIOX.sh.mxd



PORT	ELEVATION	RESULT	DATE
3	188.7	3.6	05/14/13
2	8.7	0.51	05/14/13
1	-155.3	< 0.5 U	05/14/13

PORT	ELEVATION	RESULT	DATE
5	192.4	0.58	05/30/13
4	67.4	1.6	05/30/13
3	-25.6	< 0.5 U	05/30/13
2	-92.6	< 0.5 U	05/30/13
1	-167.6	0.070 J	05/30/13

ELEVATION	RESULT	DATE
153.5	< 0.5 U	05/21/13

PORT	ELEVATION	RESULT	DATE
3	199.4	3.4	05/30/13
2	-35.6	< 0.5 U	05/30/13
1	-193.6	< 0.5 U	05/30/13

PORT	ELEVATION	RESULT	DATE
3	178.6	3.7	05/13/13
2	-41.4	0.14 J	05/13/13

ELEVATION	RESULT	DATE
31.1	2.1	06/18/13

ELEVATION	RESULT	DATE
231.5	1.1	06/24/13

ELEVATION	RESULT	DATE
237	< 1.0 U	05/23/13

ELEVATION	RESULT	DATE
220.6	< 1.0 U	05/23/13

ELEVATION	RESULT	DATE
218.2	2.4	05/23/13

PORT	ELEVATION	RESULT	DATE
3	-10.9	< 0.5 U	05/09/13
2	-140.9	< 0.5 U	05/09/13

ELEVATION	RESULT	DATE
147.5	12	06/24/13

ELEVATION	RESULT	DATE
183.5	0.49	06/24/13

ELEVATION	RESULT	DATE
54.4	0.14 J	05/22/13
-25.6	0.14 J	05/22/13

PORT	ELEVATION	RESULT	DATE
9	169.4	6.8	05/10/13
8	69.4	< 0.5 U	05/10/13
7	-40.6	< 0.5 U	05/10/13
6	-120.6	< 0.5 U	05/10/13

PORT	ELEVATION	RESULT	DATE
5	-145.2	< 0.5 U	05/14/13

PORT	ELEVATION	RESULT	DATE
7	150.4	3.2	05/13/13
6	0.4	1.3	05/13/13
5	-159.6	0.64	05/13/13

PORT	ELEVATION	RESULT	DATE
13	181.7	< 0.5 U	05/17/13
12	108.7	< 0.5 U	05/17/13
11	62.7	< 0.5 U	05/17/13
10	-32.3	< 0.5 U	05/17/13
9	-135.3	< 0.5 U	05/17/13

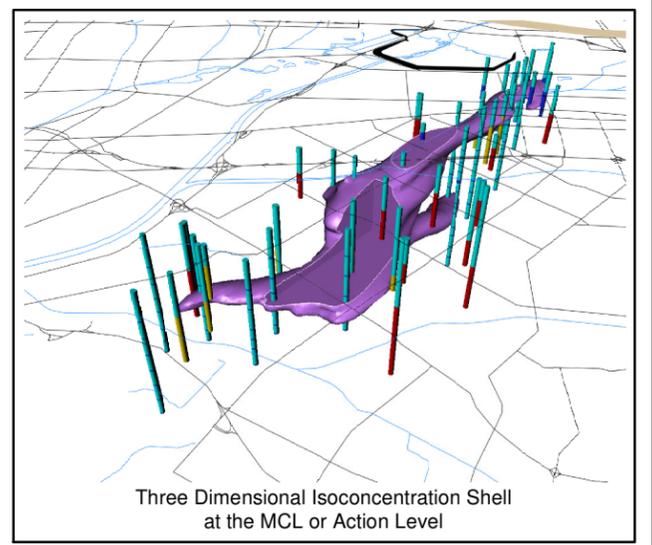
ELEVATION	RESULT	DATE
92.7	< 0.5 U	05/23/13
-42.3	< 0.5 U	05/23/13

ELEVATION	RESULT	DATE
7.2	2.1	05/22/13
-112.8	1.7	05/22/13

PORT	ELEVATION	RESULT	DATE
6	51.2	0.14 J	05/16/13
5	-153.8	0.29 J	05/16/13

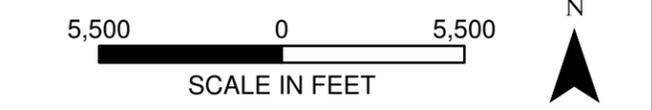
PORT	ELEVATION	RESULT	DATE
5	-123.6	0.10 J	05/15/13

ELEVATION	RESULT	DATE
-37	0.55	06/04/13



- EXPLANATION**
- ◆ Production well
  - ⊕ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multiport well
  - ⊕ Monitoring and multiport well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,4-Dioxane isoconcentration contour at -50 feet (1 ug/L)
  - 1,4-Dioxane composite isoconcentration contour for the elevation interval above -200 feet (1 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.

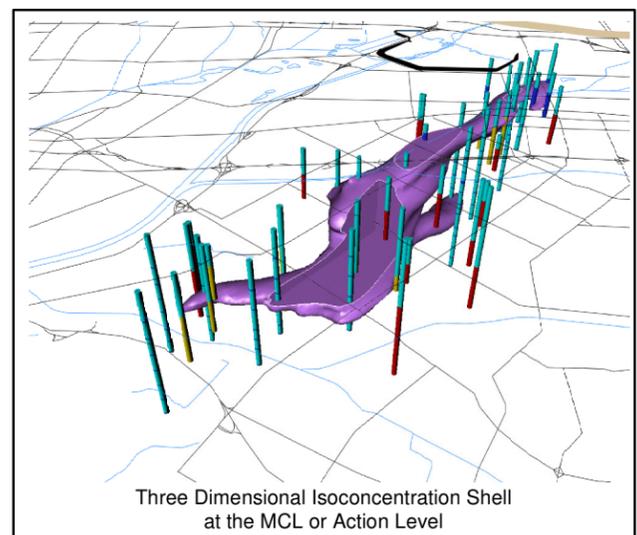
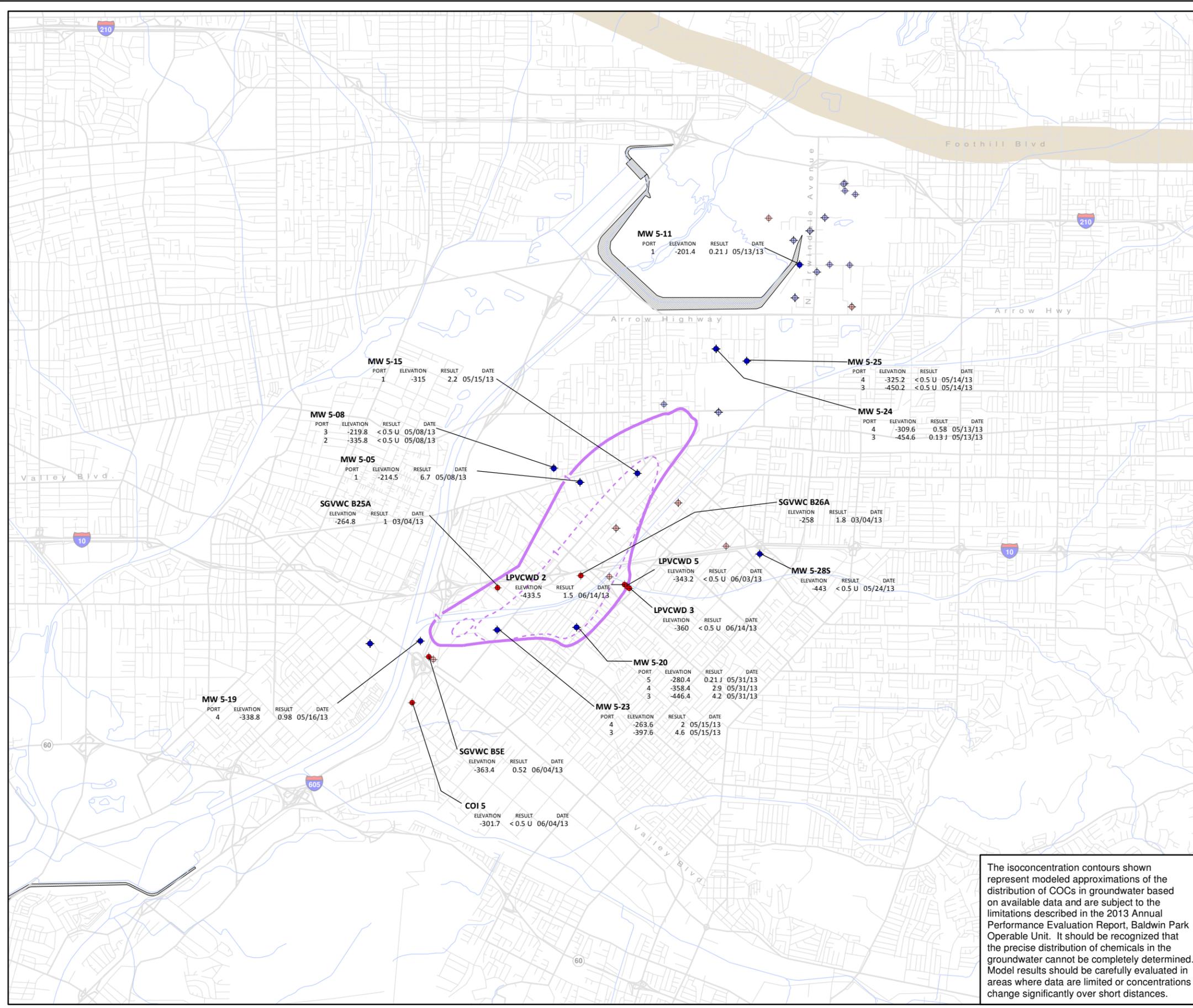


The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,4-DIOXANE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Project No. 475.0092.001  
Figure **A-9**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2-A-10\_PlumeMap13\_14DIOX\_int.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,4-Dioxane isoconcentration contour at -350 feet (1 ug/L)
  - 1,4-Dioxane composite isoconcentration contour for the elevation interval between -200 and -500 feet (1 ug/L)
  - Duarte Fault Zone

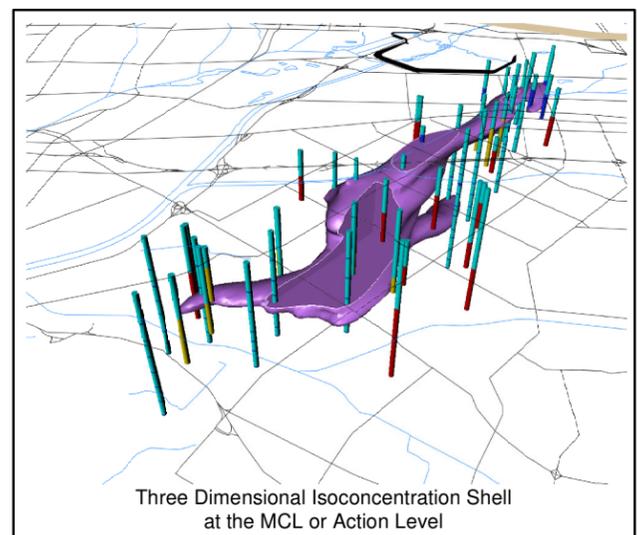
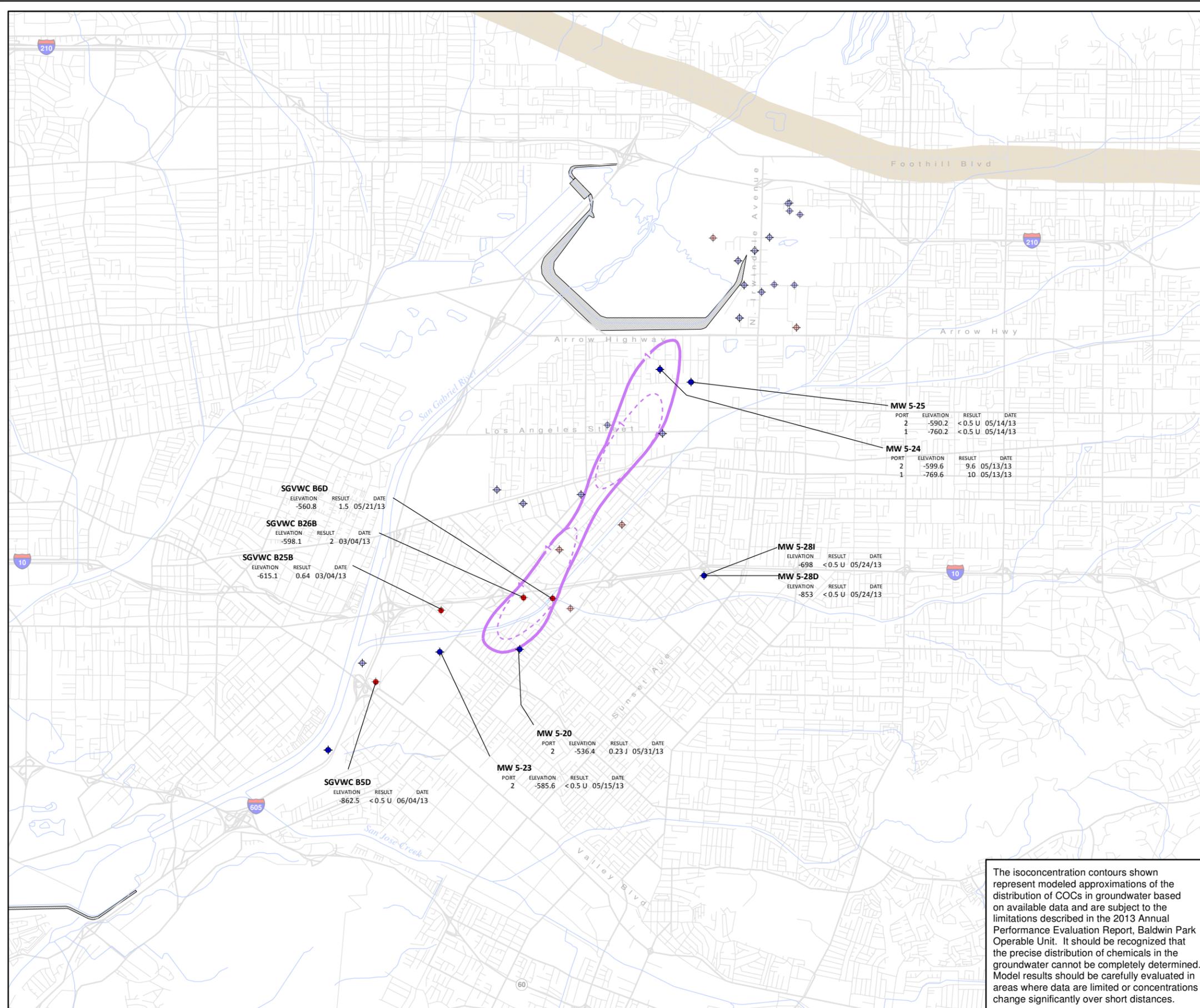
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,4-DIOXANE BETWEEN -200 AND -500 FEET MSL, 2013**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A\11\_PlumeMap13\_14DIOX\_dp.mxd



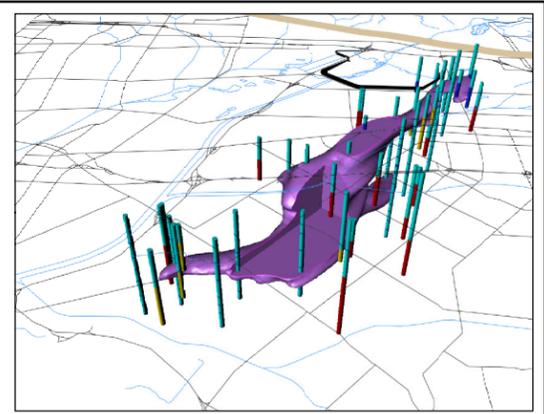
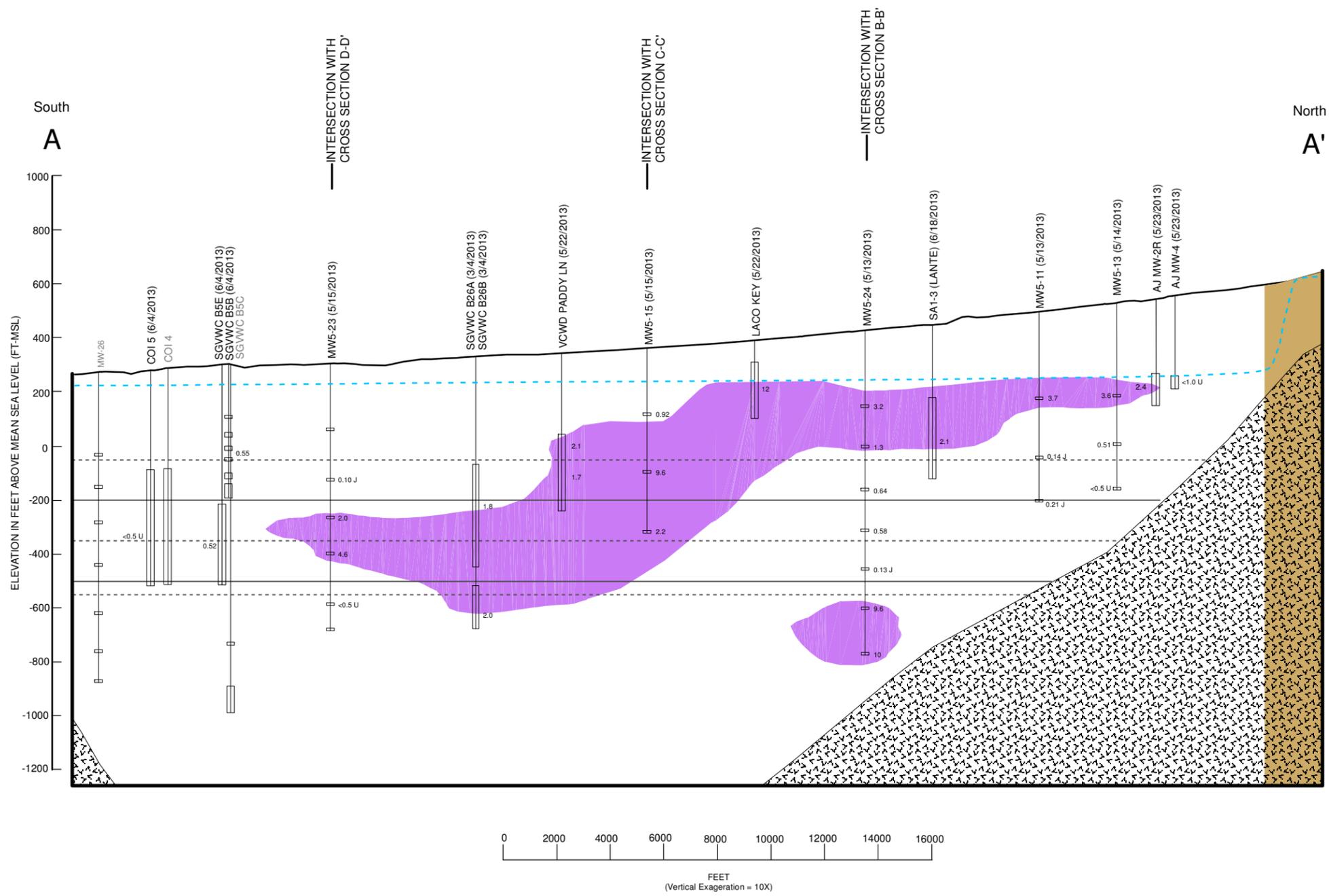
- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - 1,4-Dioxane isoconcentration contour at -550 feet (1 ug/L)
  - 1,4-Dioxane composite isoconcentration contour for the elevation interval below -500 feet (1 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF 1,4-DIOXANE  
BELOW -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UU Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >1 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- Discrete elevation (-50, -350 and -550 ft amsl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

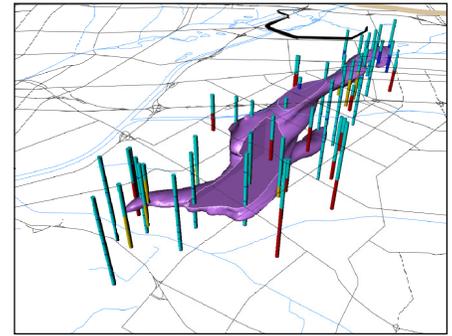
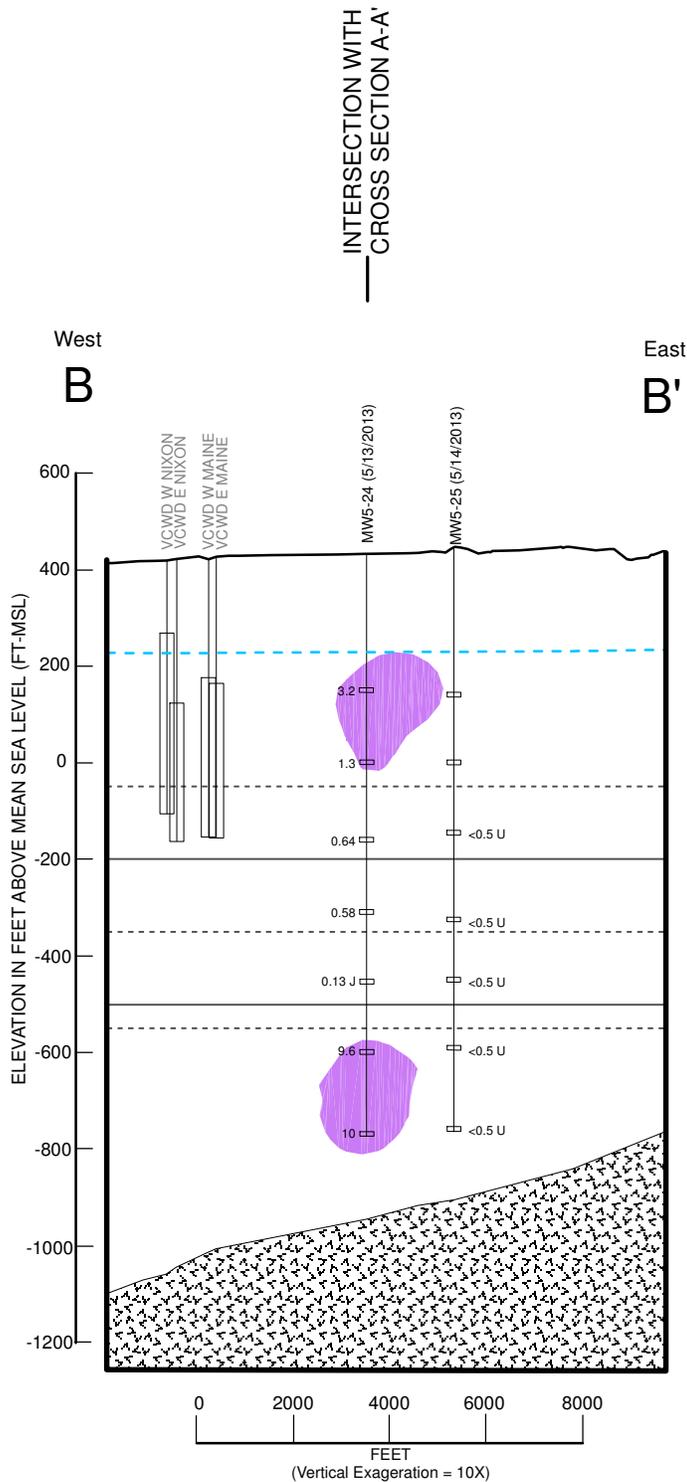
Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
 1,4-DIOXANE, 2013  
 CROSS SECTION A-A'  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California**

Project No. 475.0092.001  
 Figure **A-12**

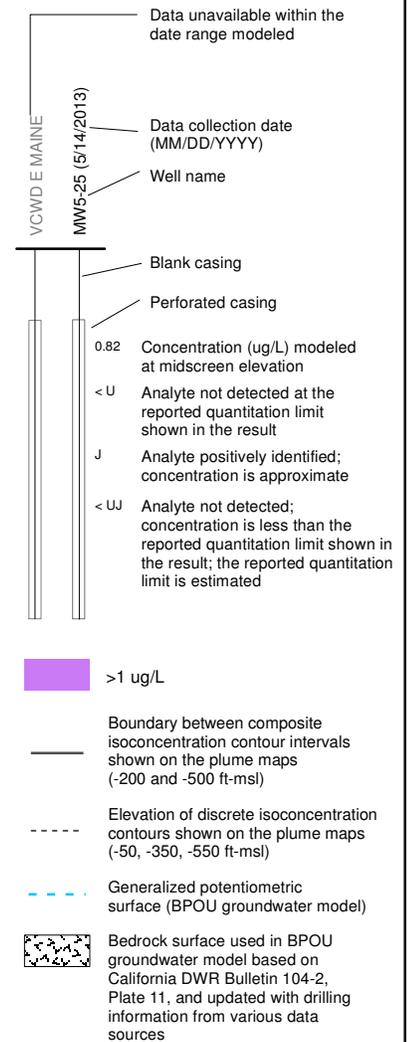
\\den-fs1\GIS\Projects\Aerogel\_7190\GIS\_maps\Plume\Plume2012A-12\_A\_CrossSection12\_14DIOX.mxd

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-13\_B\_CrossSection13\_14DIOX.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

### EXPLANATION



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

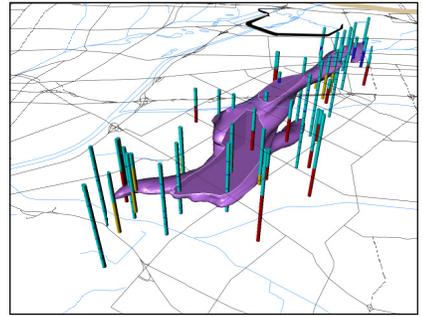
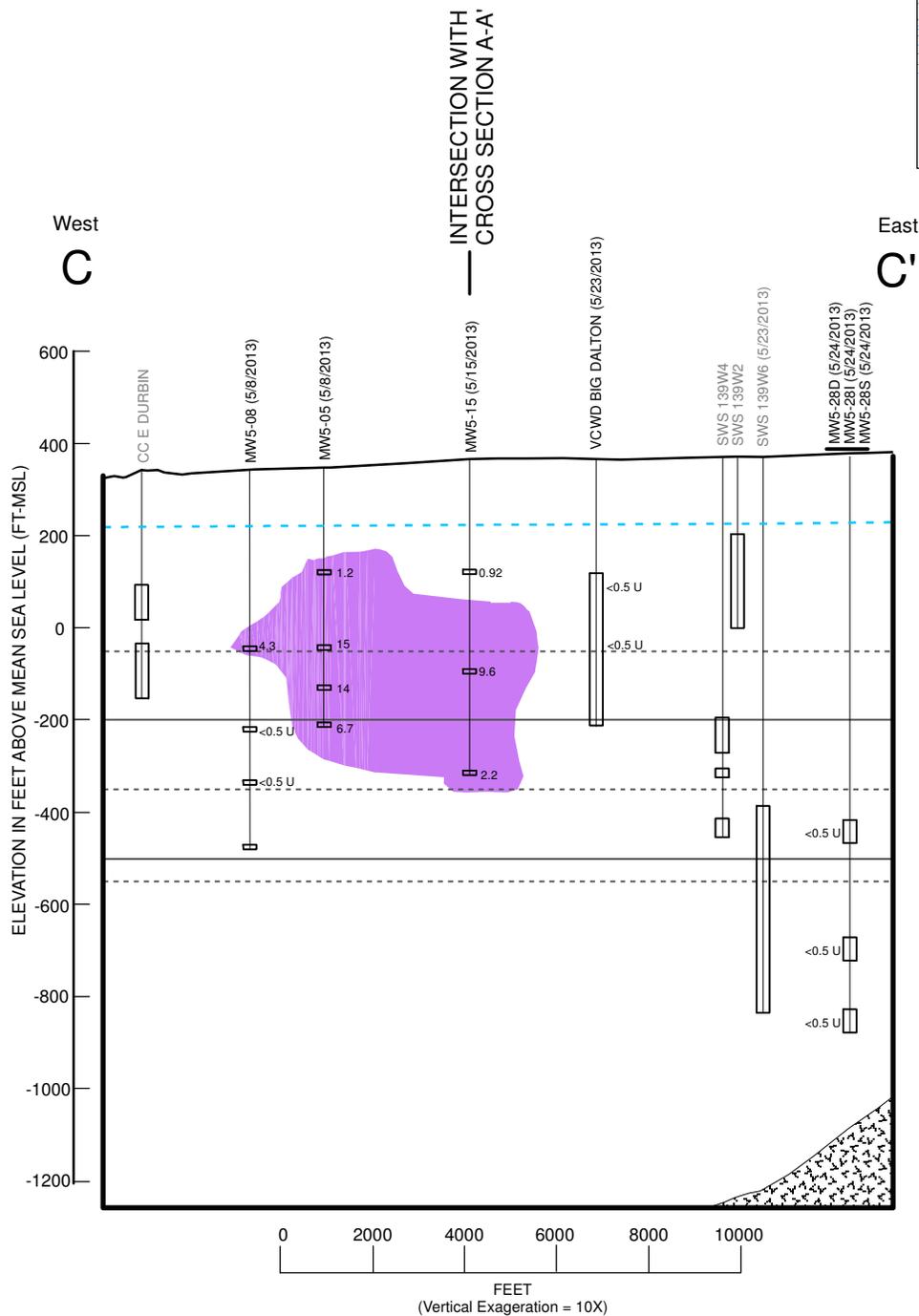
**VERTICAL DISTRIBUTION OF  
1,4-DIOXANE  
CROSS SECTION B-B'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-13**

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Three Dimensional Isoconcentration Shell at the MCL or Action Level

### EXPLANATION

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >1 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contour shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
1,4-DIOXANE, 2013  
CROSS SECTION C-C'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

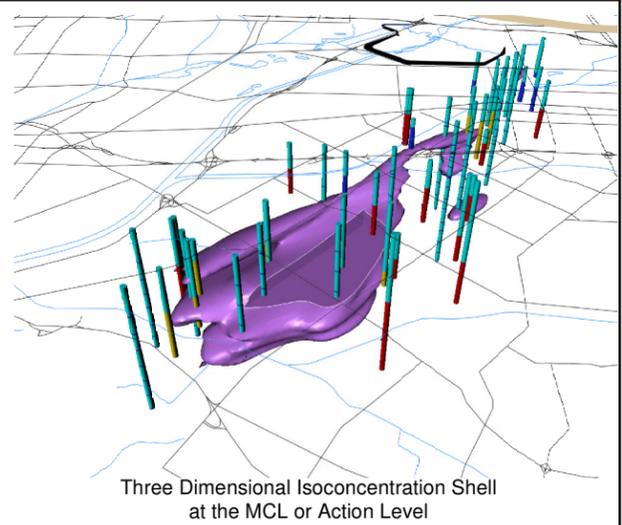
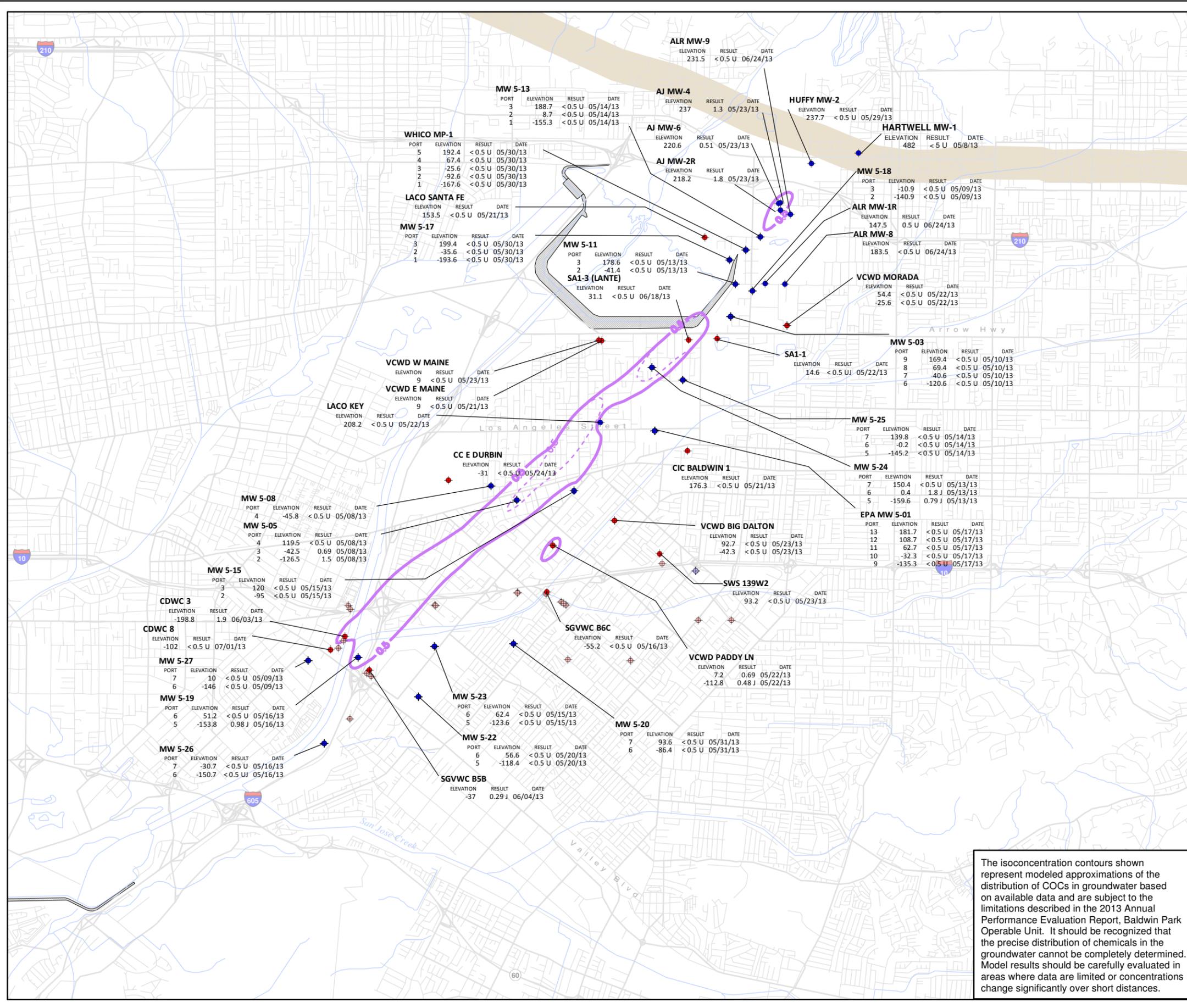


Project No. 475.0092.001

Figure **A-14**

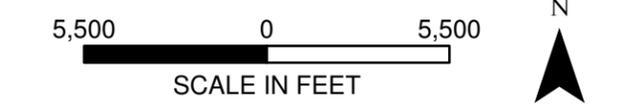


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- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - Carbon Tetrachloride isoconcentration contour at -50 feet (0.5 ug/L)
  - Carbon Tetrachloride composite isoconcentration contour for the elevation interval above -200 feet (0.5 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



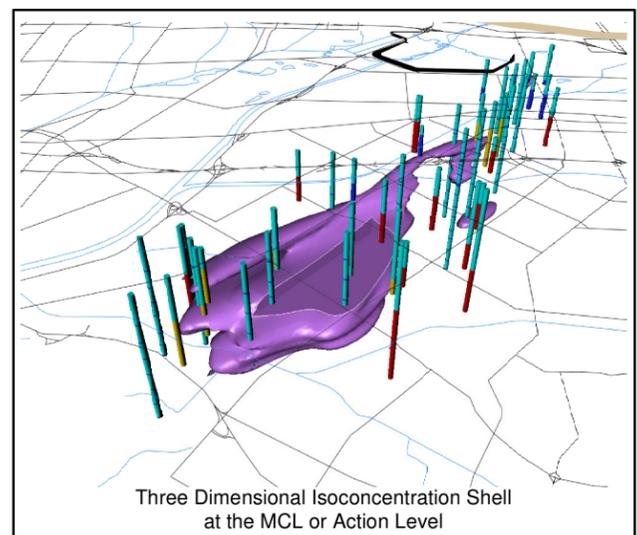
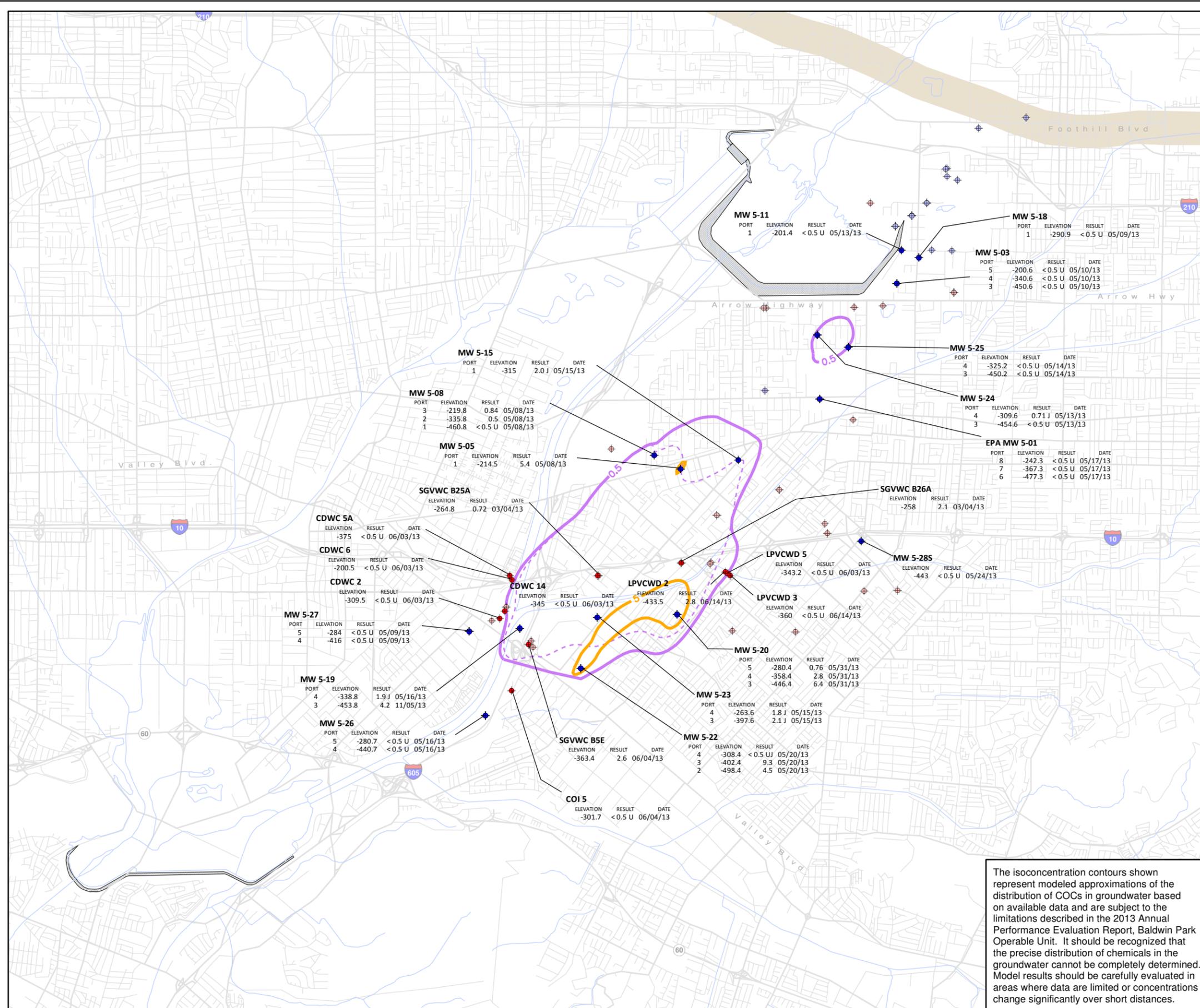
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF CARBON TETRACHLORIDE  
ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Project No. 475.0092.001  
Figure **A-16**



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- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - Carbon Tetrachloride isoconcentration contour at -350 feet (0.5 ug/L)
  - - - Carbon Tetrachloride isoconcentration contour at -350 feet (5 ug/L)
  - Carbon Tetrachloride composite isoconcentration contour for the elevation interval between -200 and -500 feet (0.5 ug/L)
  - Carbon Tetrachloride composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
  - Duarte Fault Zone

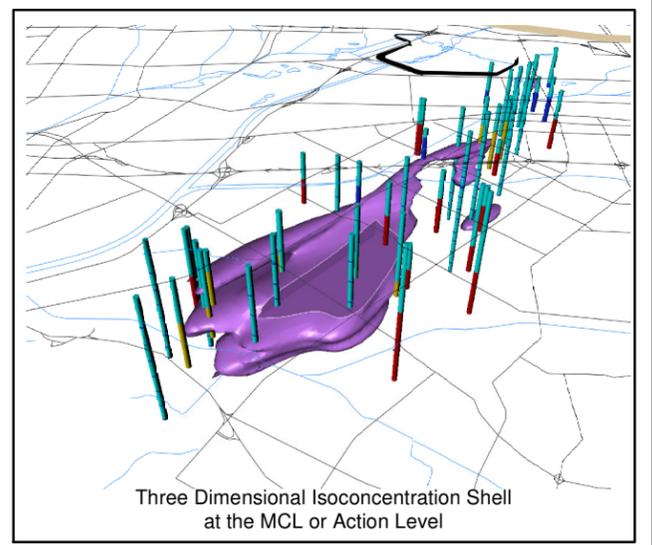
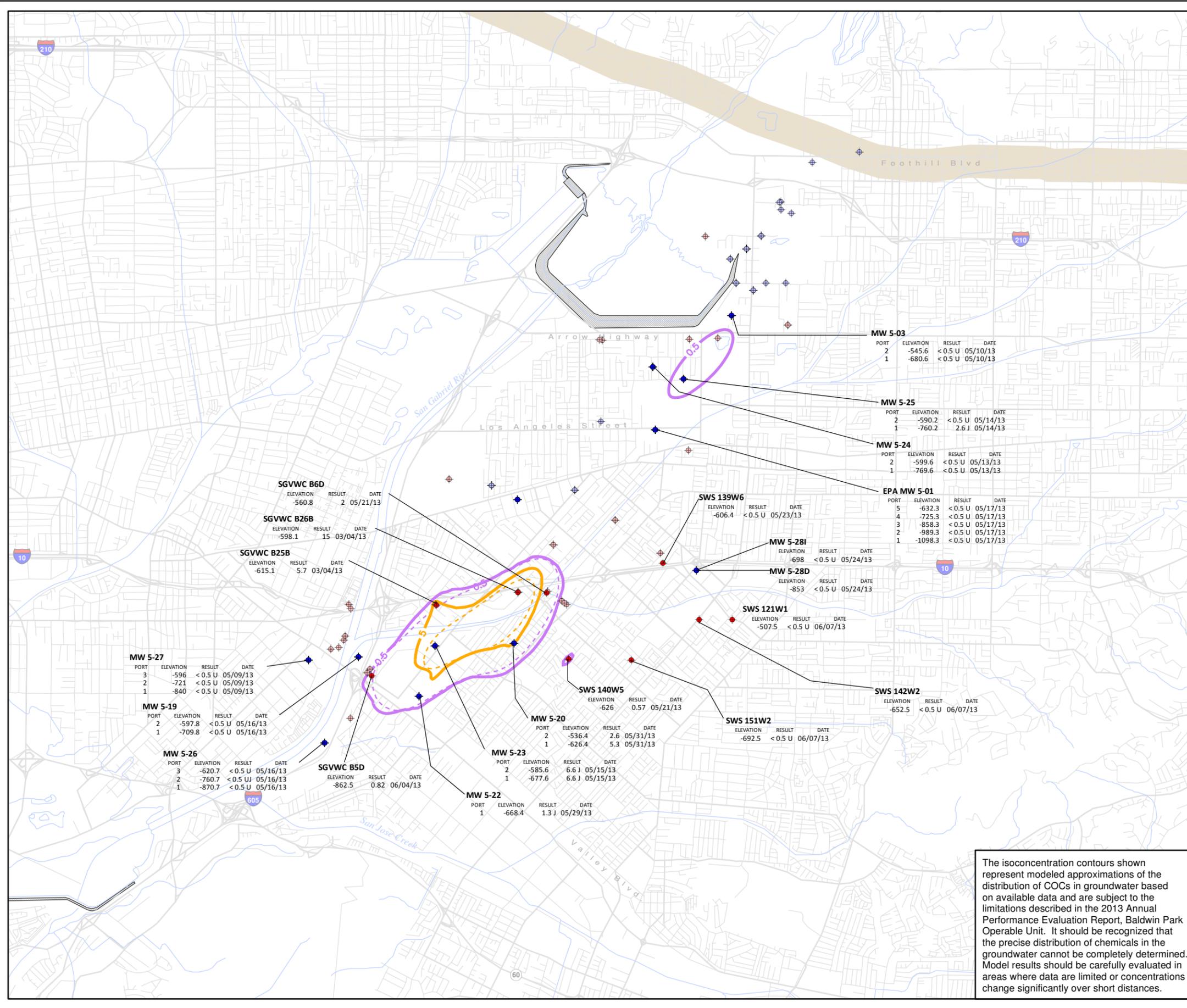
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

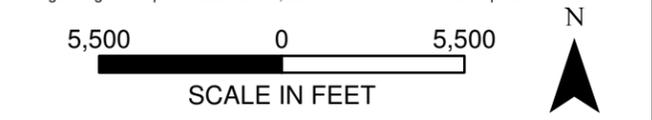
**DISTRIBUTION OF CARBON TETRACHLORIDE BETWEEN -200 AND -500 FEET MSL, 2013**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

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- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified, concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - Carbon Tetrachloride isoconcentration contour at -550 feet (0.5 ug/L)
  - - - Carbon Tetrachloride isoconcentration contour at -550 feet (5 ug/L)
  - Carbon Tetrachloride composite isoconcentration contour for the elevation interval below -500 feet (0.5 ug/L)
  - Carbon Tetrachloride composite isoconcentration contour for the elevation interval below -500 feet (5 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



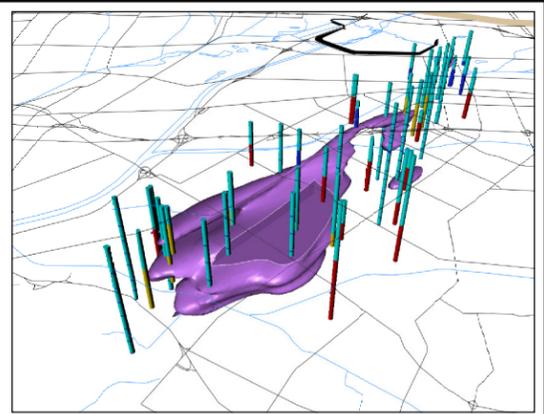
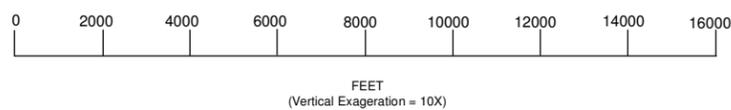
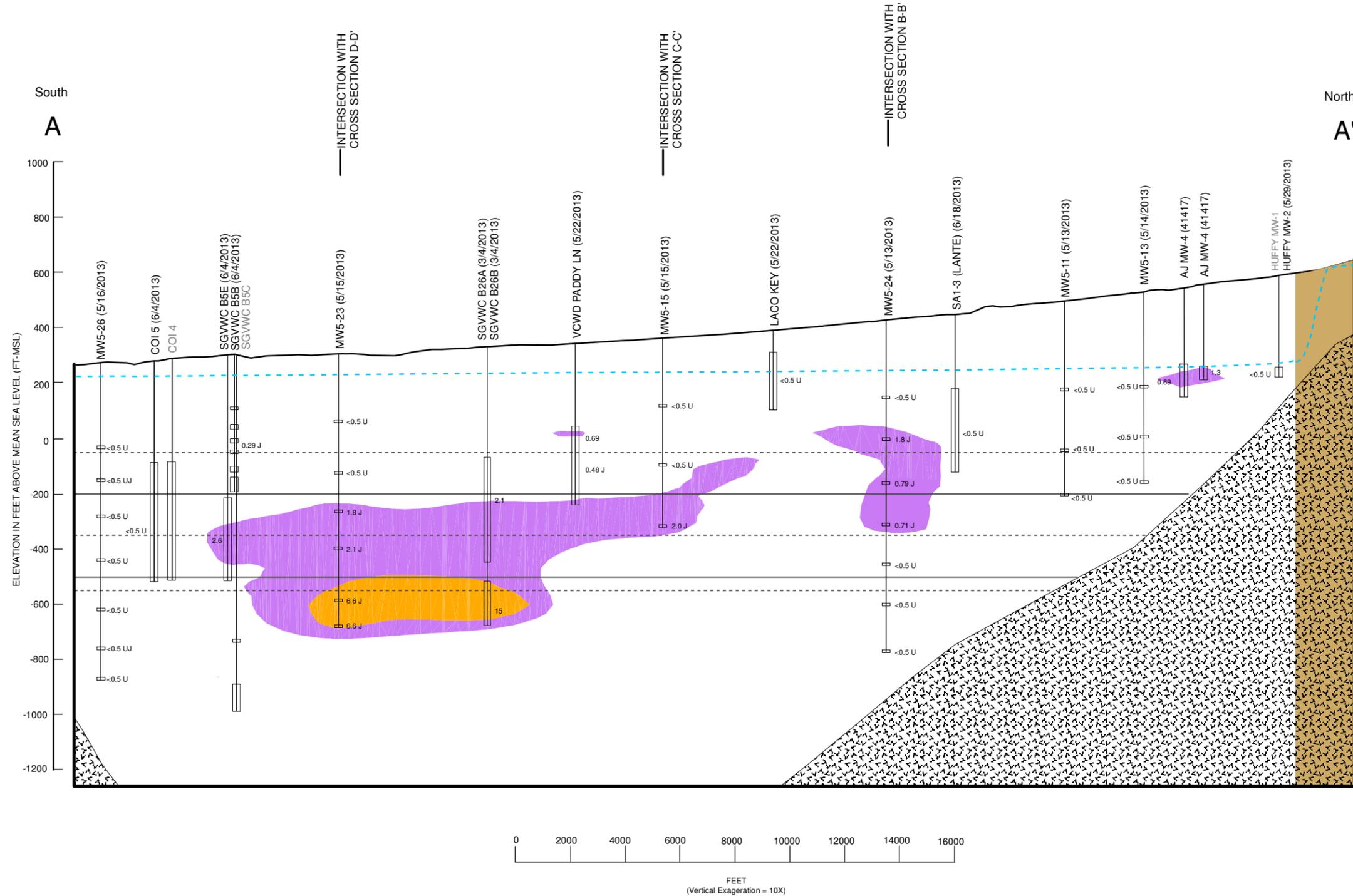
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF CARBON TETRACHLORIDE BELOW -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

**NewFields**

Project No.475.0092.001  
Figure **A-18**

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Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.69 Concentration (ug/L) modeled at midscreen elevation
- <U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- <UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >0.5 ug/L
- >5 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- - - Discrete elevation (-50, -350 and -550 ft amsl)
- - - Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

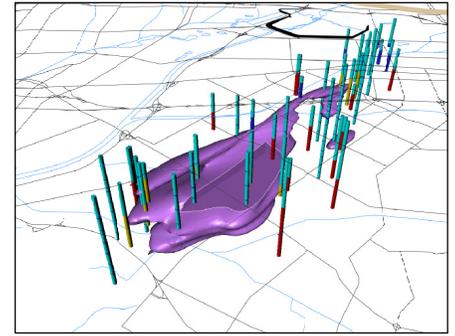
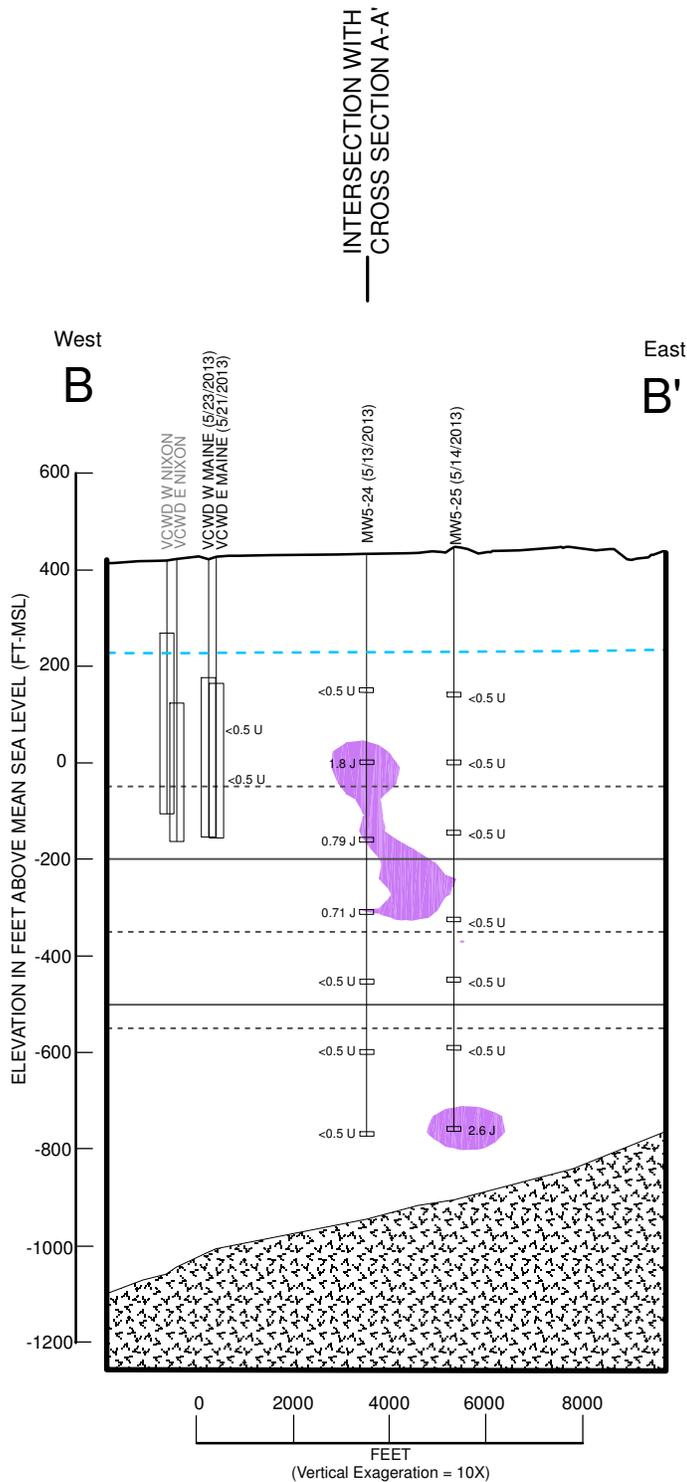
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
 CARBON TETRACHLORIDE, 2013  
 CROSS SECTION A-A'  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California**

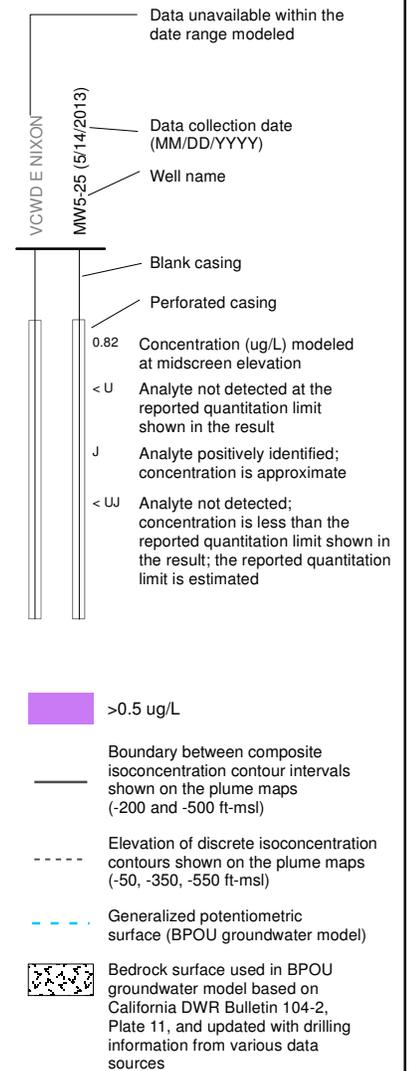
Project No. 475.0092.001  
 Figure **A-19**

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Three Dimensional Isoconcentration Shell at the MCL or Action Level

### EXPLANATION



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

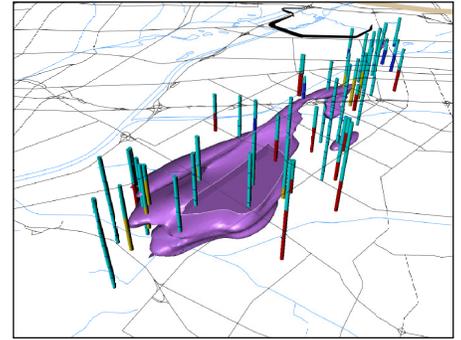
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

## VERTICAL DISTRIBUTION OF CARBON TETRACHLORIDE, 2013 CROSS SECTION B-B' Baldwin Park Operable Unit San Gabriel Valley, California

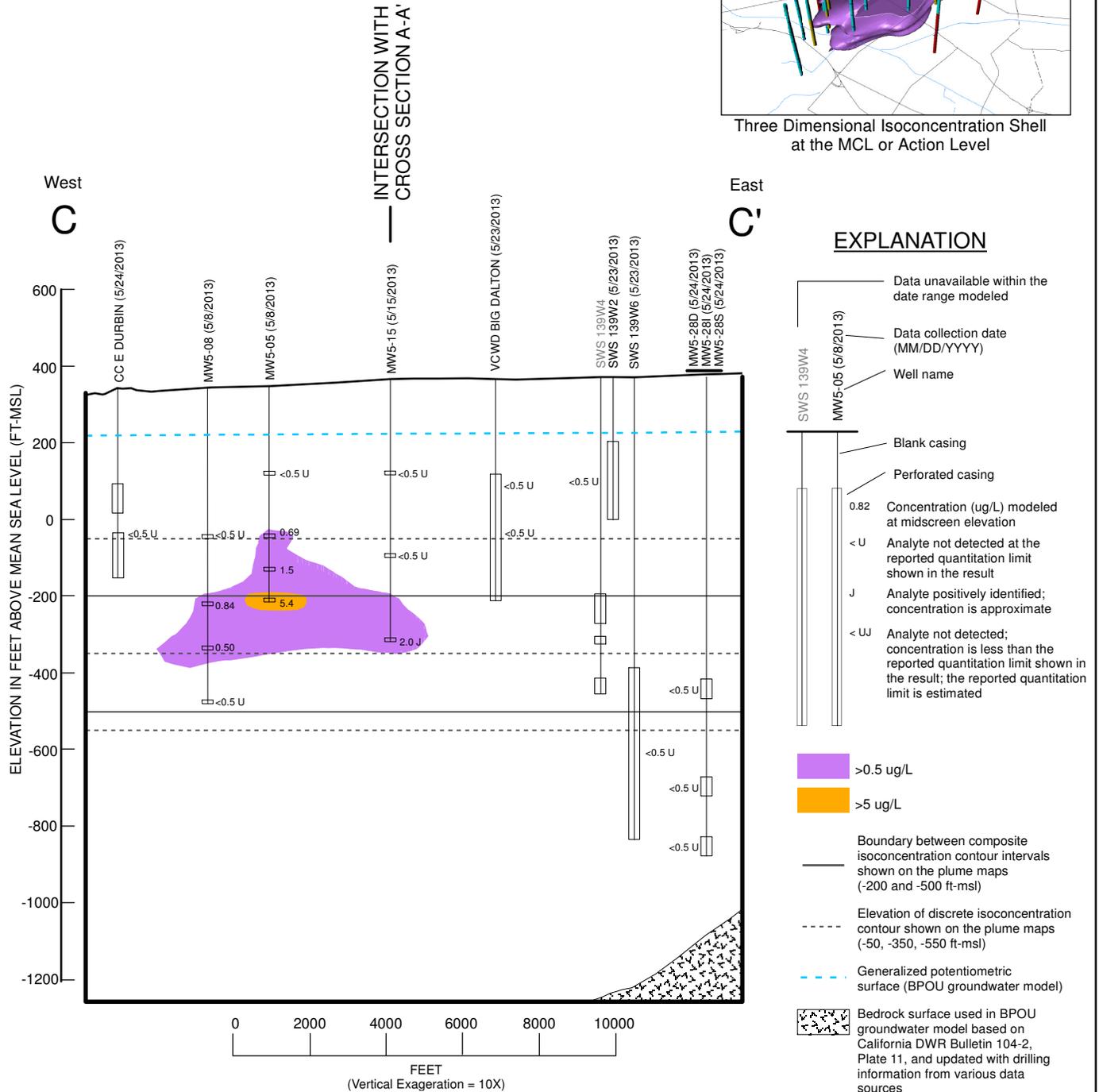


Project No. 475.0092.001

Figure **A-20**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



### EXPLANATION

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UU Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >0.5 ug/L
- >5 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contour shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

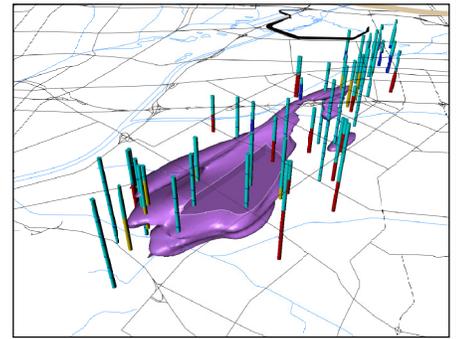
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

## VERTICAL DISTRIBUTION OF CARBON TETRACHLORIDE. 2013 CROSS SECTION C-C' Baldwin Park Operable Unit San Gabriel Valley, California

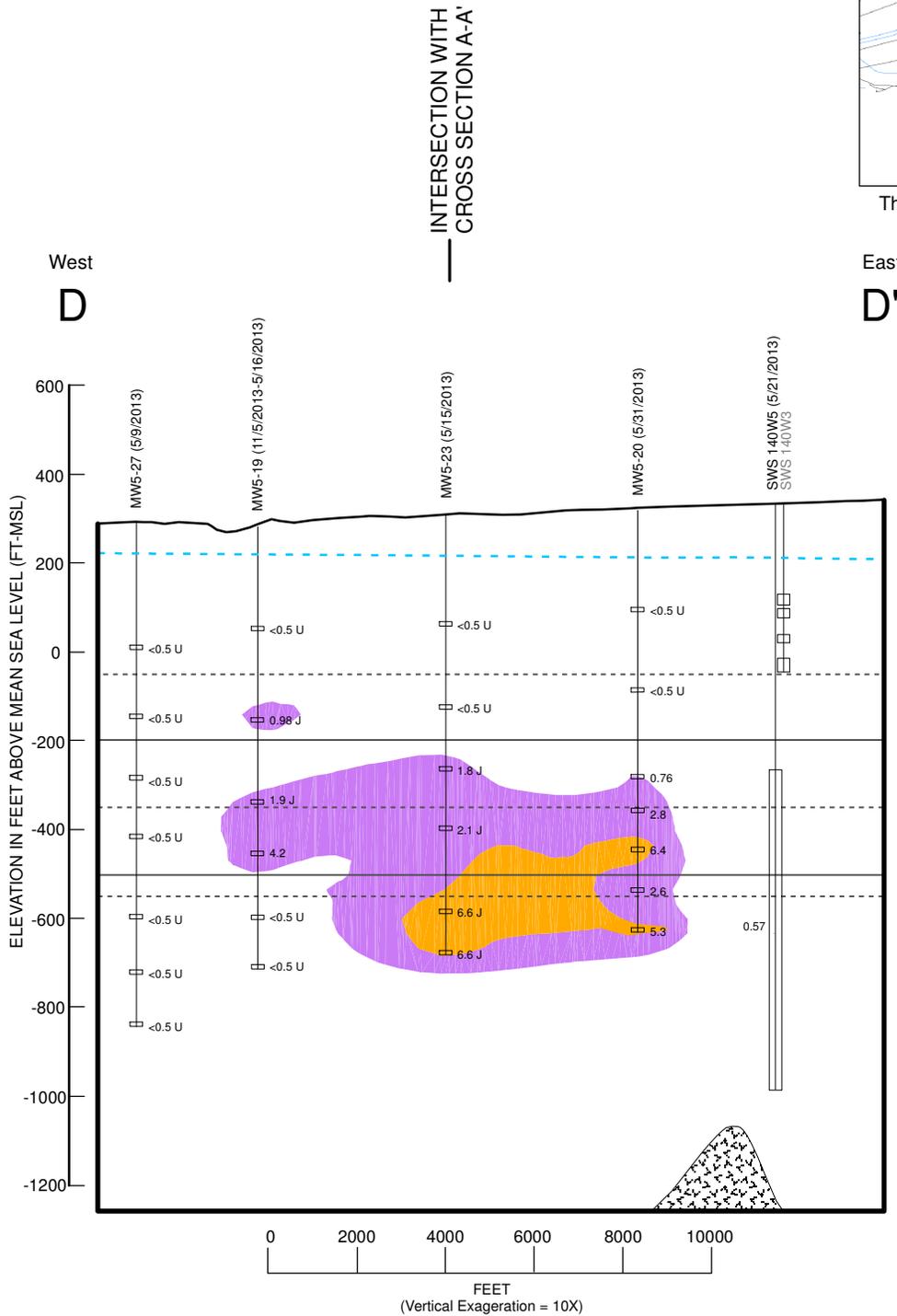


Project No. 475.0092.001

Figure **A-21**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



### EXPLANATION

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >0.5 ug/L
- >5 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contour shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

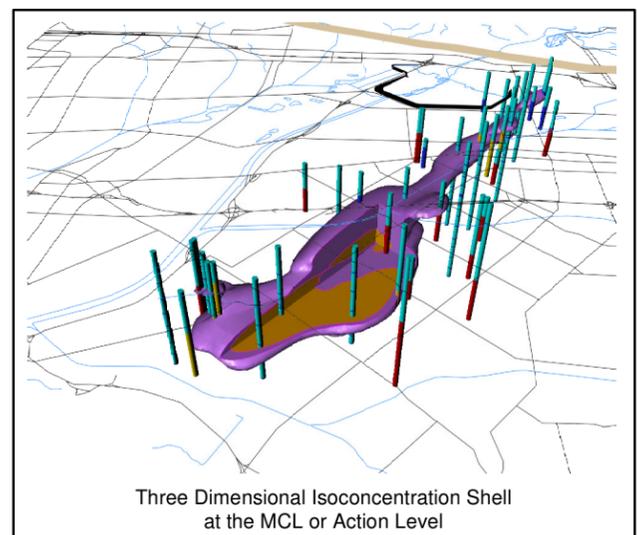
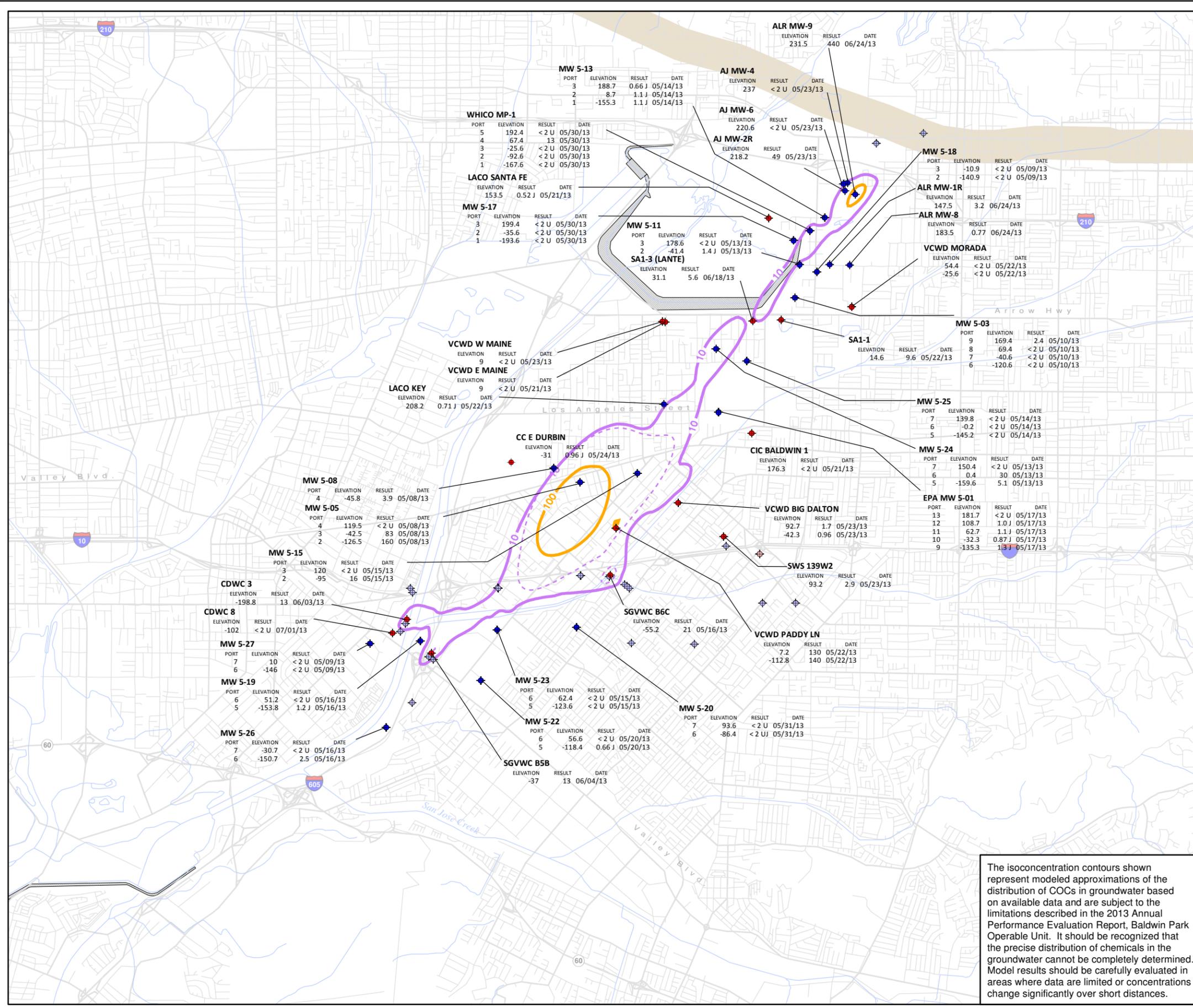
## VERTICAL DISTRIBUTION OF CARBON TETRACHLORIDE, 2013 CROSS SECTION D-D' Baldwin Park Operable Unit San Gabriel Valley, California



Project No. 475.0092.001

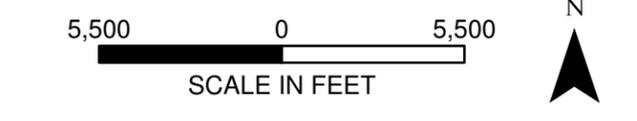
Figure **A-22**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2-A-23\_PlumeMap13\_NDMA\_sh.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected at the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - H Sample was prepped or analyzed beyond the specified holding time
  - - - N-Nitrosodimethylamine isoconcentration contour at -50 feet (10 ng/L)
  - - - N-Nitrosodimethylamine isoconcentration contour at -50 feet (100 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval above -200 feet (10 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval above -200 feet (100 ng/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.

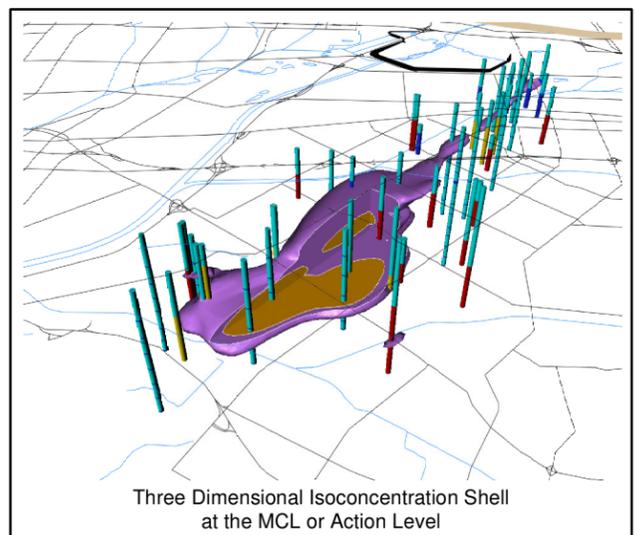
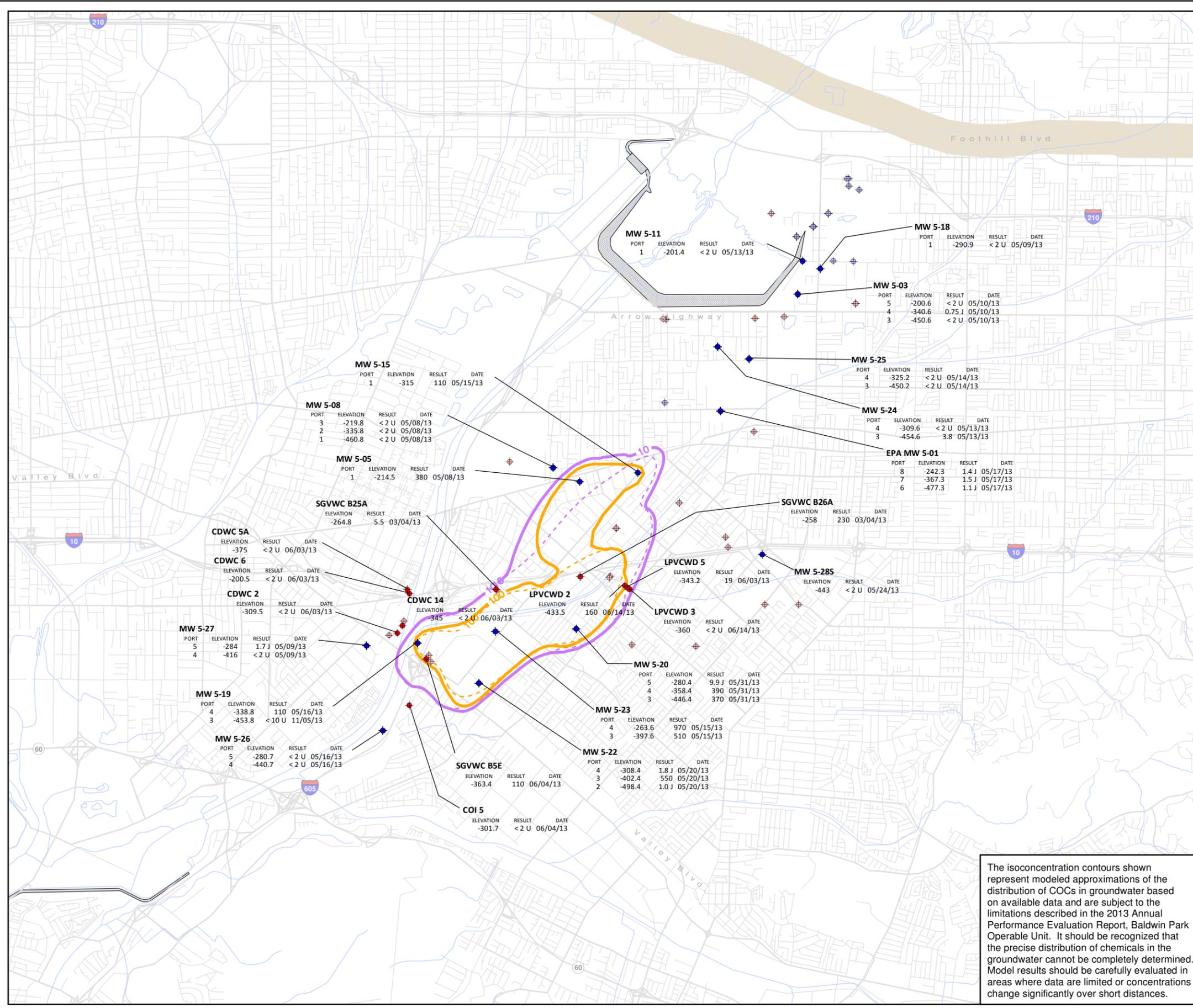


The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF N-NITROSODIMETHYLAMINE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Project No. 475.0092.001  
Figure **A-23**

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- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified, concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - N-Nitrosodimethylamine isoconcentration contour at -350 feet (10 ng/L)
  - - - N-Nitrosodimethylamine isoconcentration contour at -350 feet (100 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval between -200 and -500 feet (10 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ng/L)
  - Duarte Fault Zone

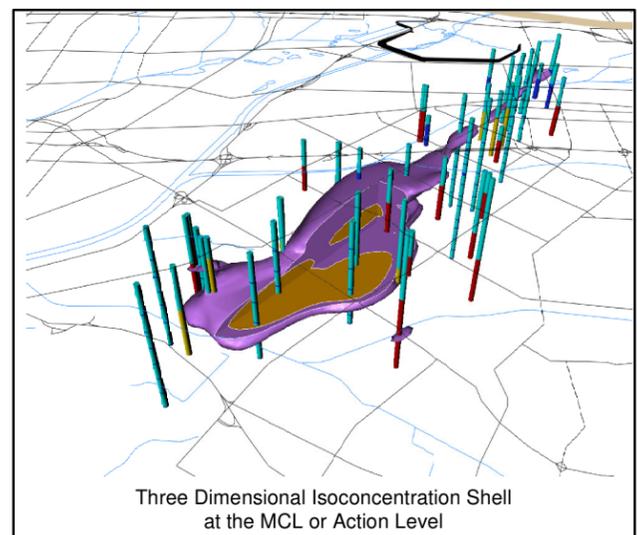
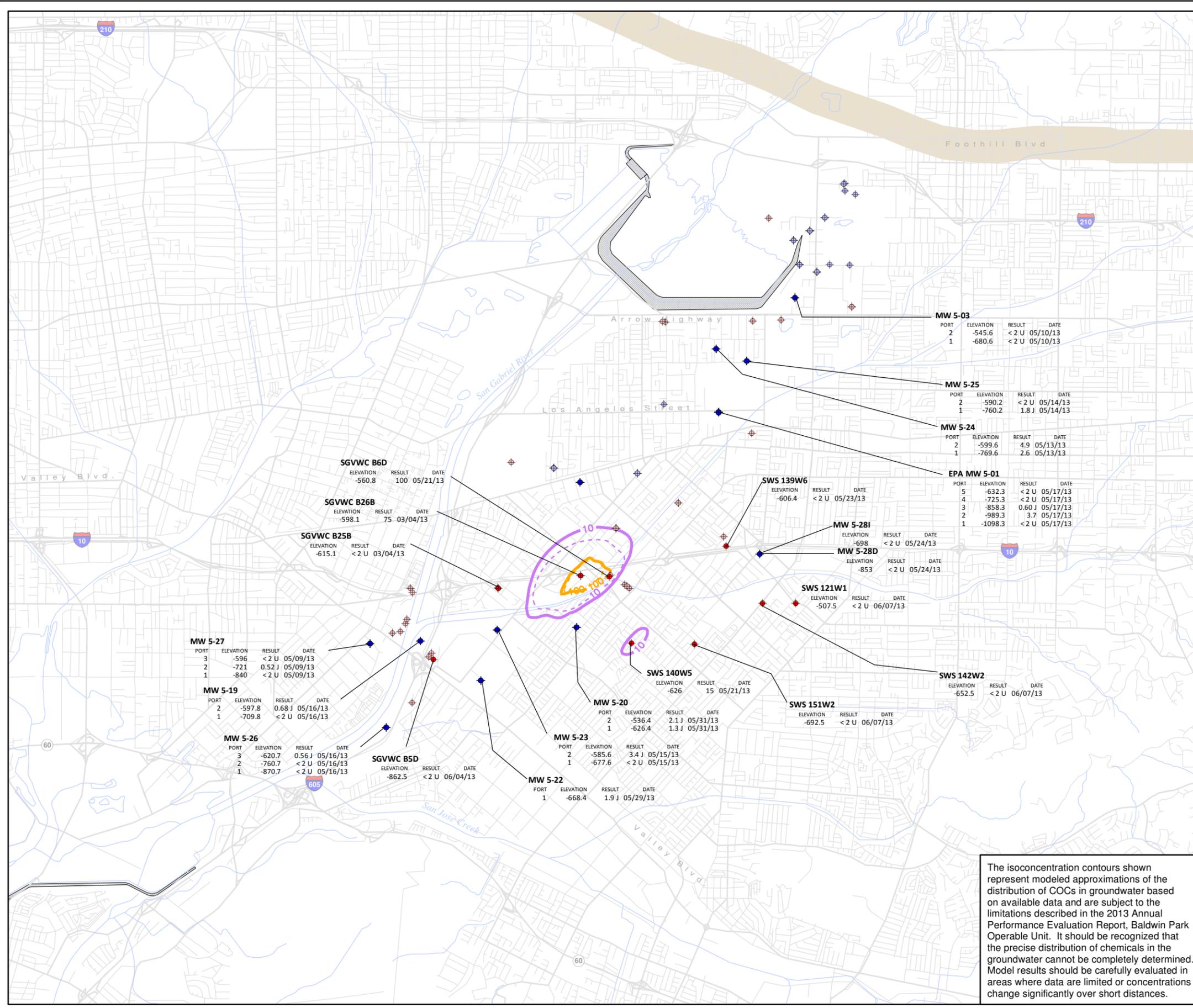
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF N-NITROSODIMETHYLAMINE BETWEEN -200 AND -500 FEET MSL, 2013**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A-25\_Plumemap13\_NDMA\_dp.mxd



- EXPLANATION**
- Production well
  - ⊕ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ⊕ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - N-Nitrosodimethylamine isoconcentration contour at -550 feet (10 ng/L)
  - - - N-Nitrosodimethylamine isoconcentration contour at -550 feet (100 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval below -500 feet (10 ng/L)
  - N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval below -500 feet (100 ng/L)
  - Duarte Fault Zone

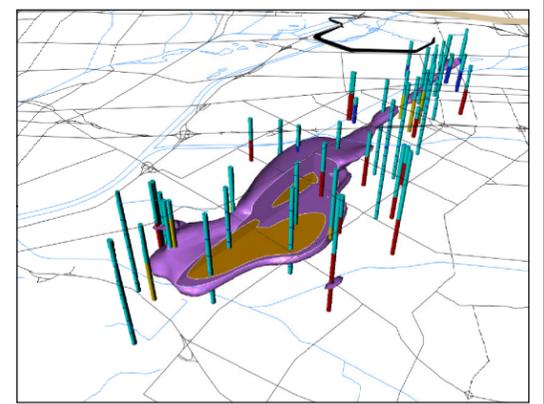
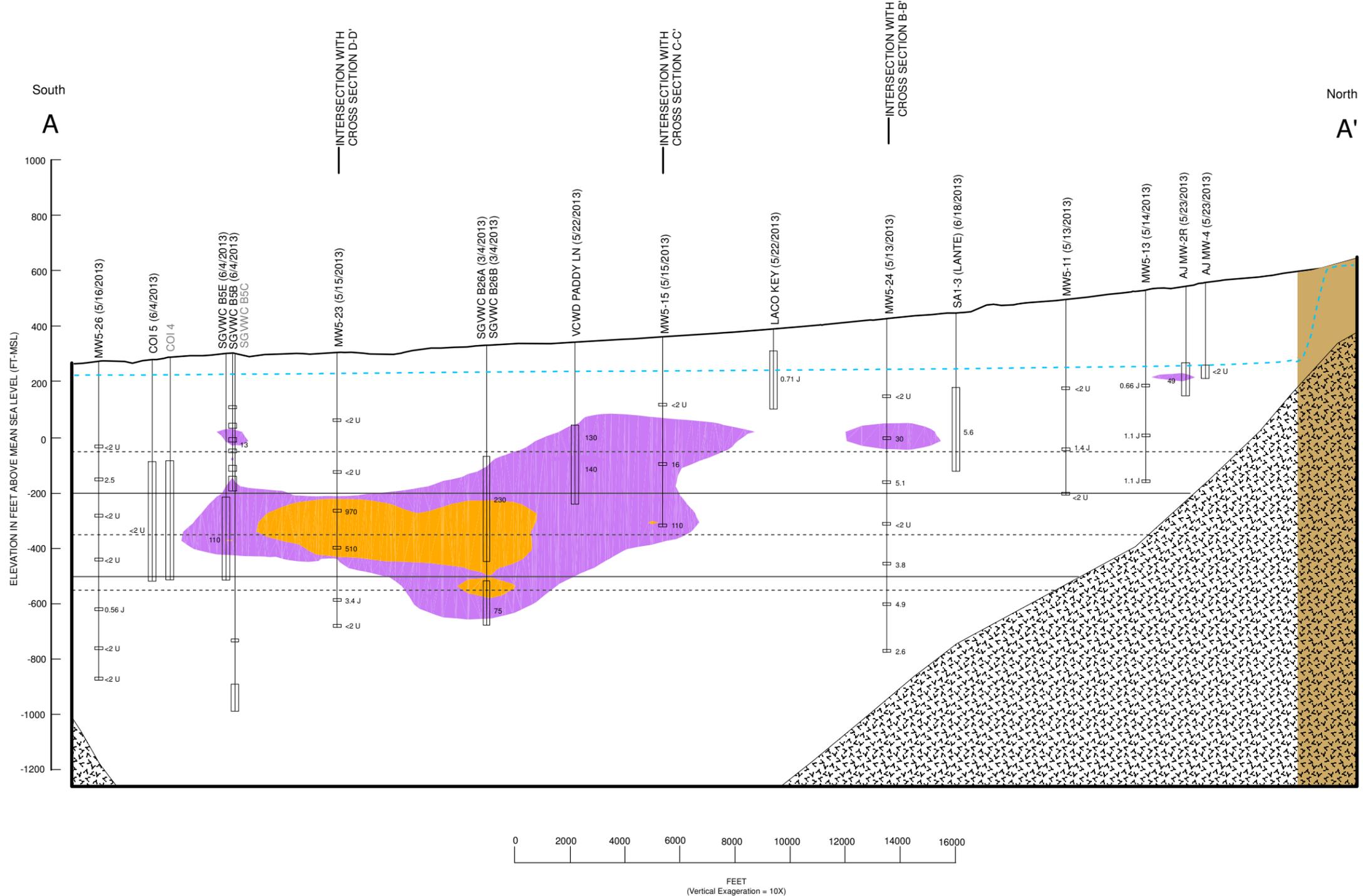
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF N-NITROSODIMETHYLAMINE BELOW -500 FEET MSL, 2013**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2A-26\_A\_CrossSection13\_NDMA.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

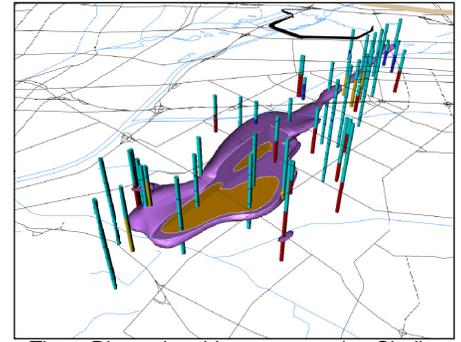
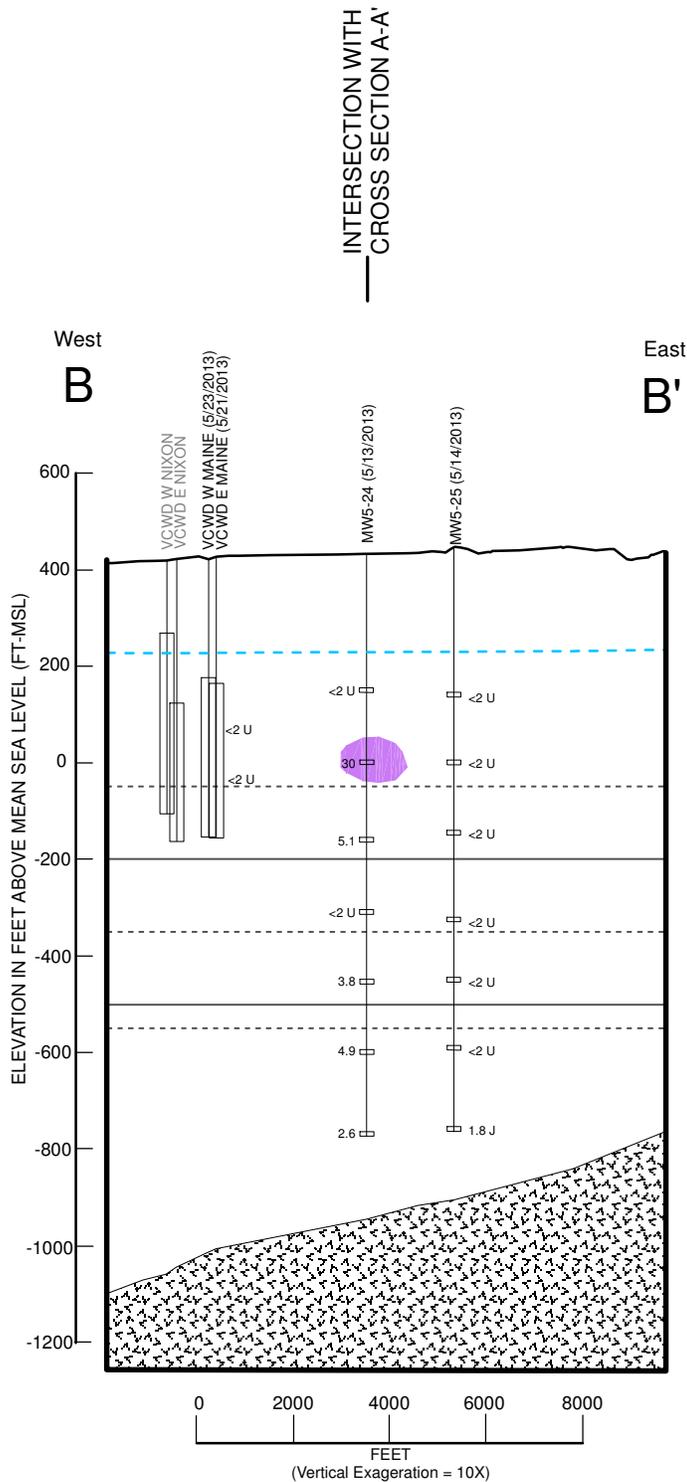
- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- <math>< U</math> Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- <math>< UU</math> Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- <math>> 10</math> ng/L
- <math>> 100</math> ng/L
- Interval elevation boundary (-200 and -500 ft amsl)
- Discrete elevation (-50, -350 and -550 ft amsl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

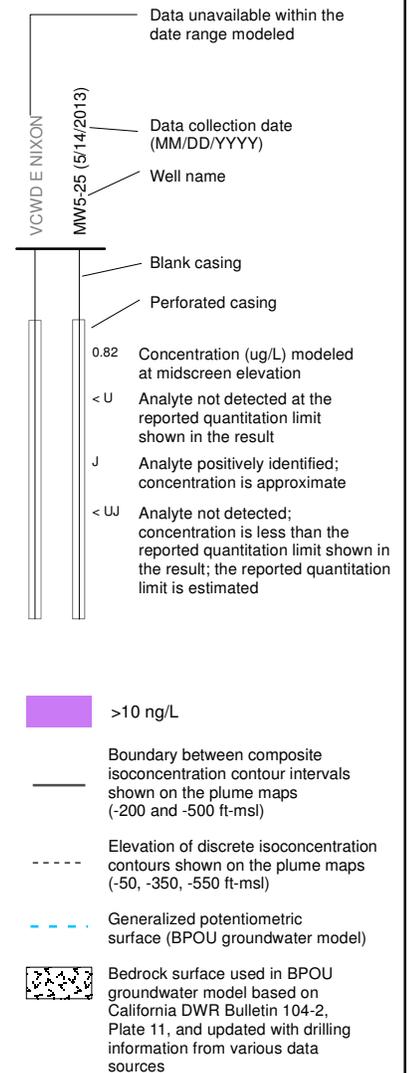
Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF N-NITROSODIMETHYLAMINE, 2013 CROSS SECTION A-A'**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-27\_B\_CrossSection13\_NDMA.mxd



### EXPLANATION



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

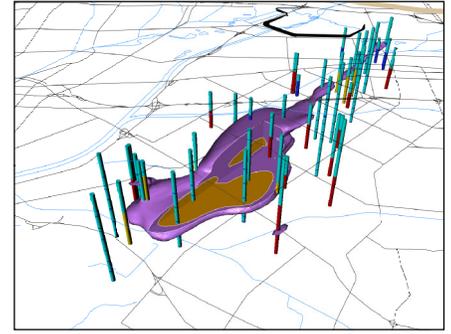
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
N-NITROSODIMETHYLAMINE, 2013  
CROSS SECTION B-B'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

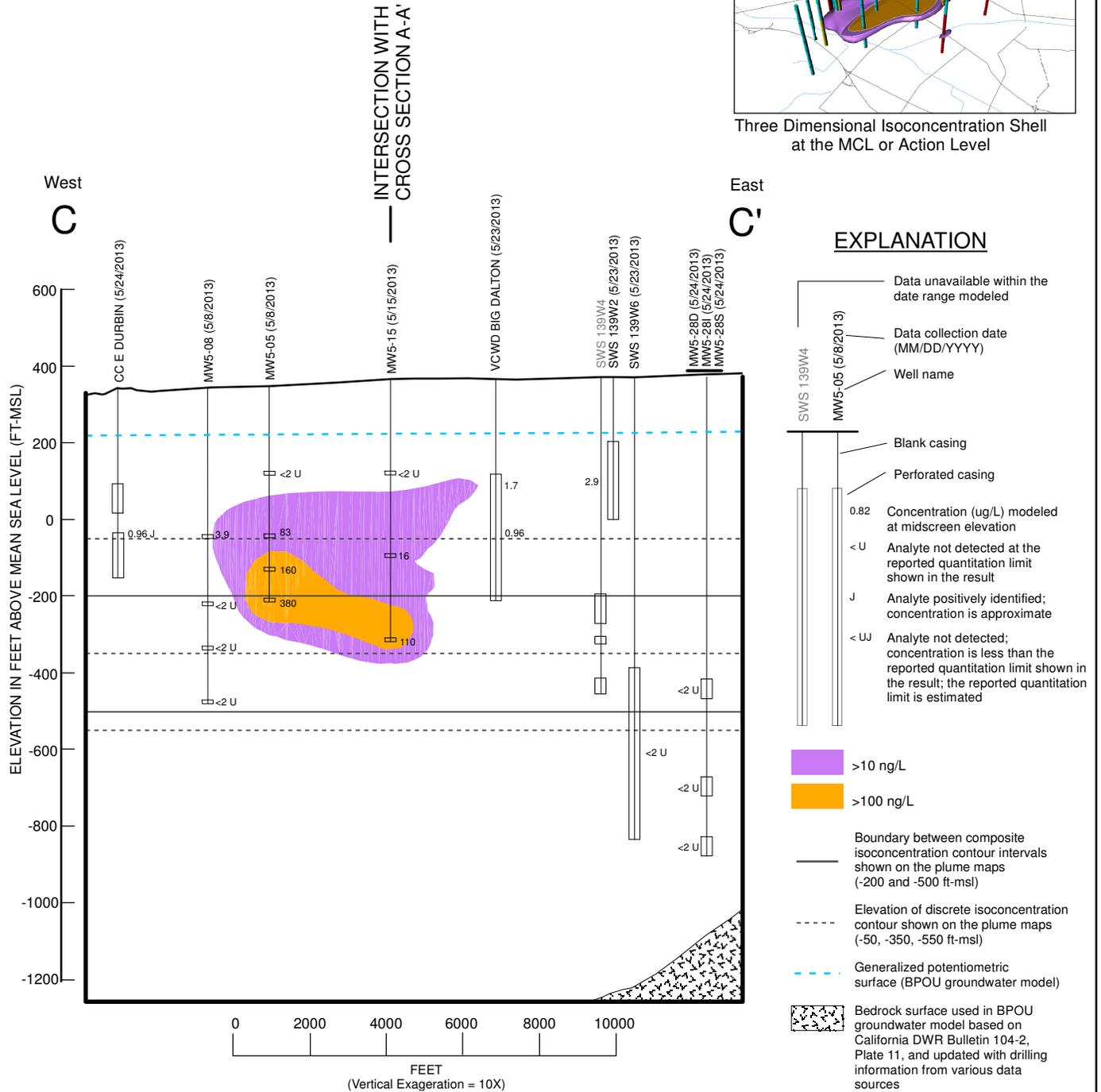


Project No. 475.0092.001

Figure **A-27**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
N-NITROSODIMETHYLAMINE, 2013  
CROSS SECTION C-C'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

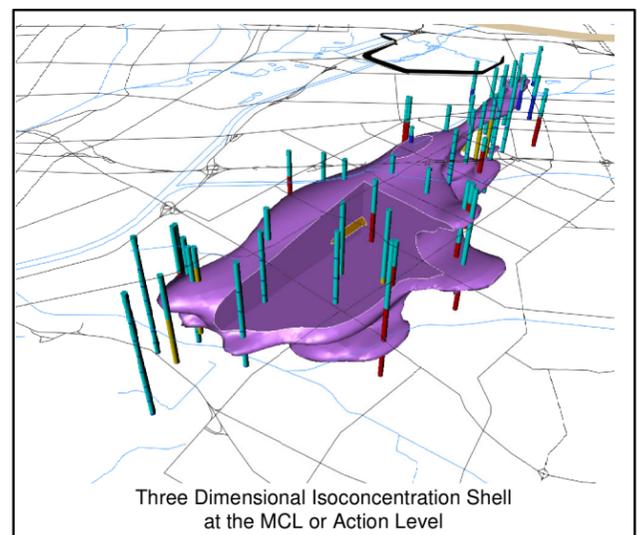
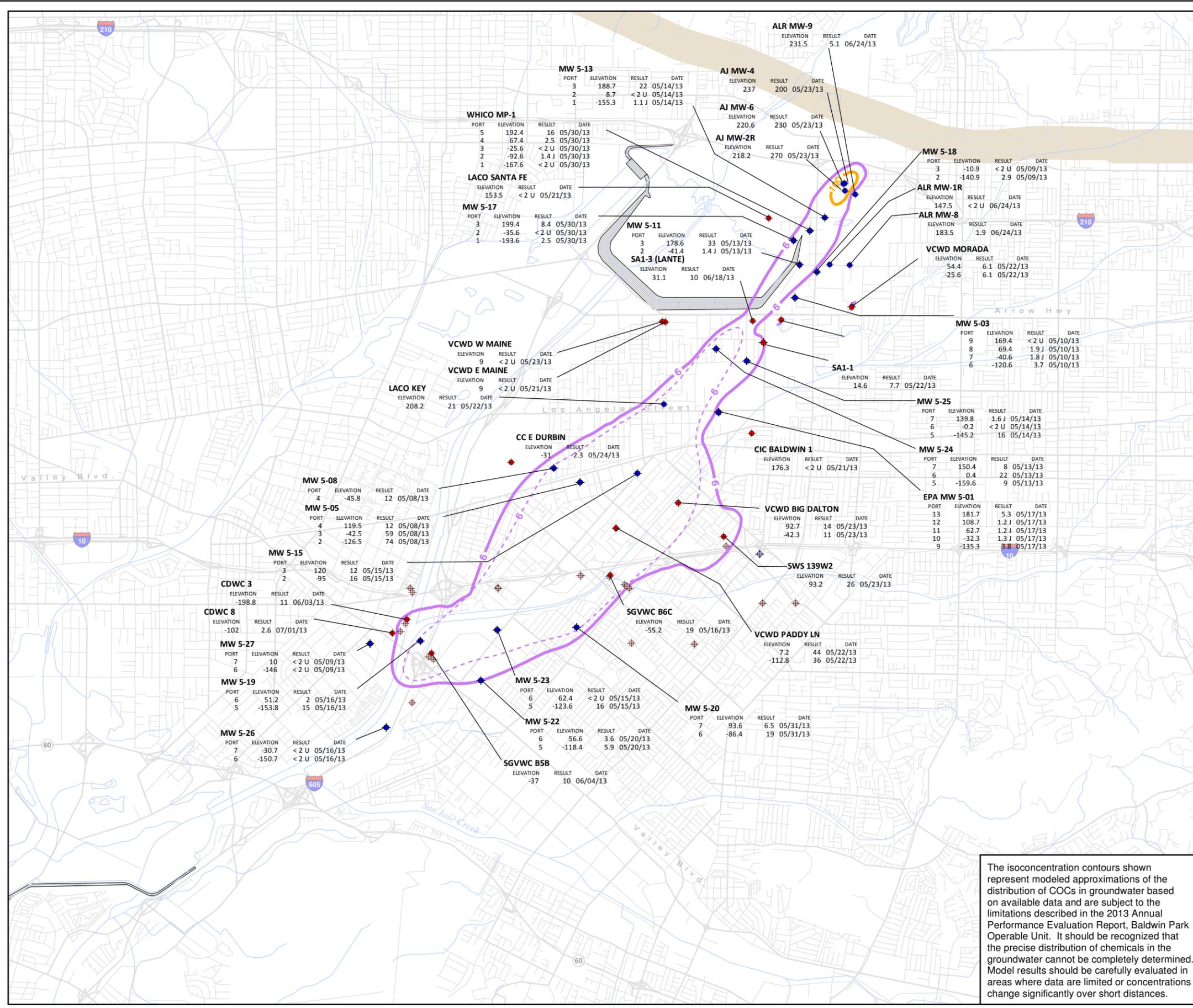


Project No. 475.0092.001

Figure **A-28**



Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2-A-30\_PlumeMap13\_PERCH\_sh.mxd



**EXPLANATION**

- ◆ Production well
- ◆ Production well (no data within elevation range, refer to Note 3)
- ◆ Monitoring and multipoint well
- ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- - - Perchlorate isoconcentration contour at -50 feet (6 ug/L)
- - - Perchlorate isoconcentration contour at -50 feet (100 ug/L)
- Perchlorate composite isoconcentration contour for the elevation interval above -200 feet (6 ug/L)
- Perchlorate composite isoconcentration contour for the elevation interval above -200 feet (100 ug/L)
- Duarte Fault Zone

**NOTES:**

1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
3. Posted data represent chemical results for the specified elevation range.
4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



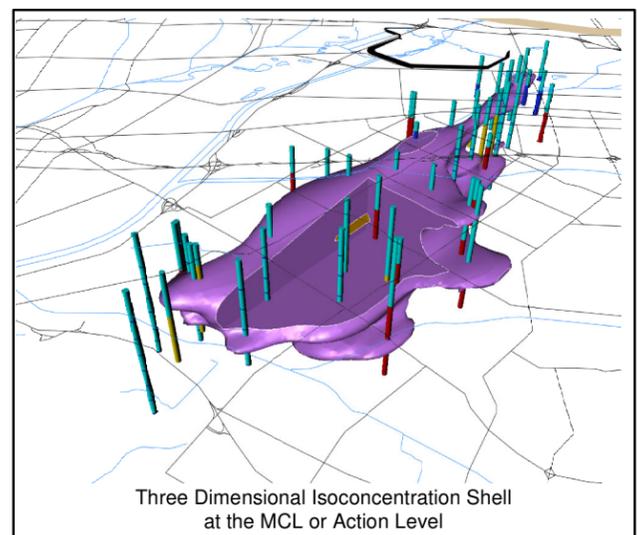
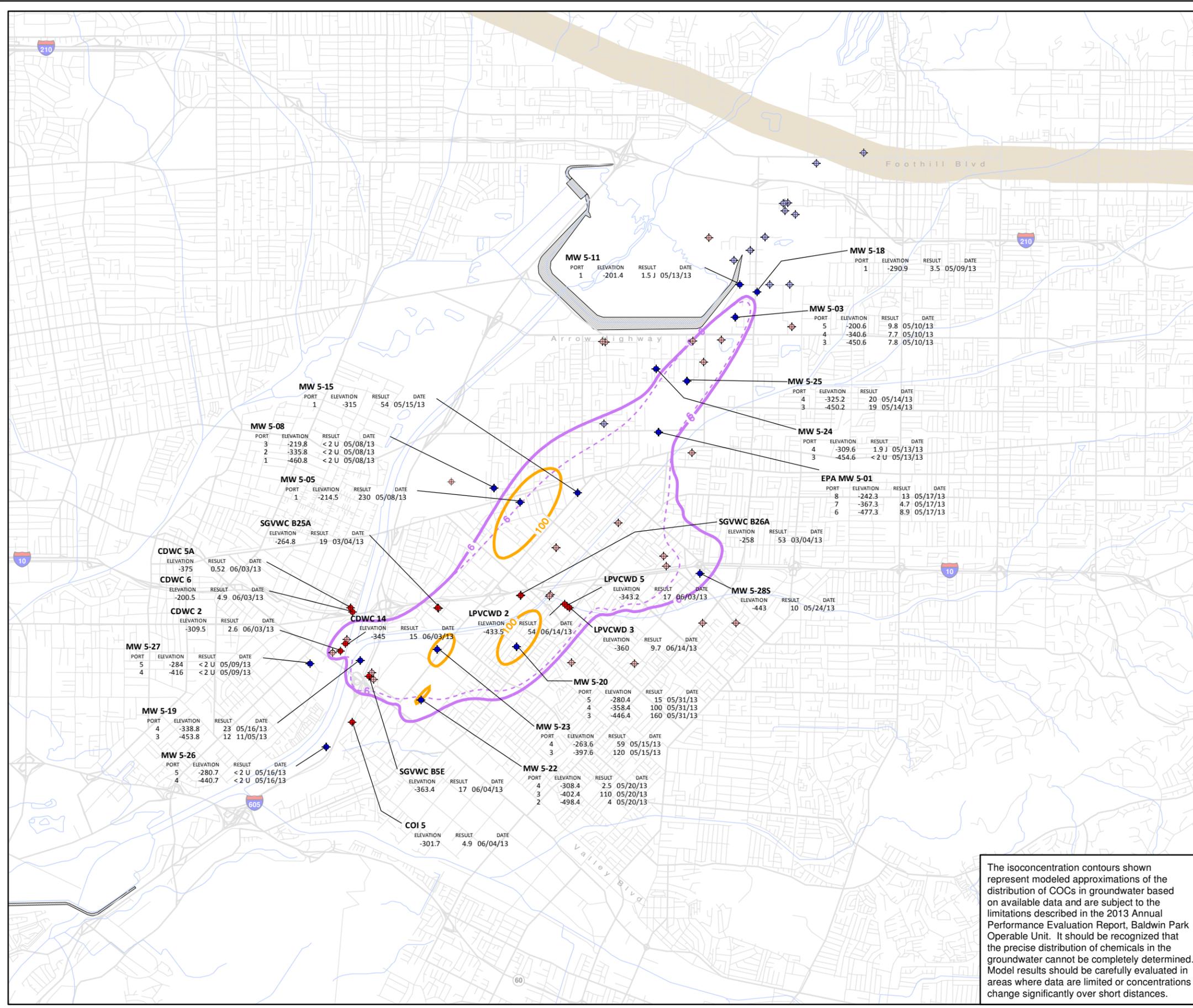
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF PERCHLORATE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Project No. 475.0092.001  
Figure **A-30**

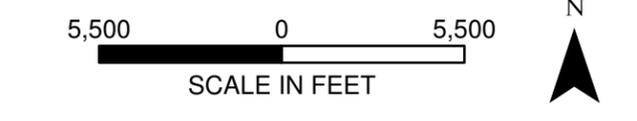


Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-31\_PlumMap13\_PERCH\_int.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - Perchlorate isoconcentration contour at -350 feet (6 ug/L)
  - - - Perchlorate isoconcentration contour at -350 feet (100 ug/L)
  - Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (6 ug/L)
  - Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
  - Duarte Fault Zone

- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

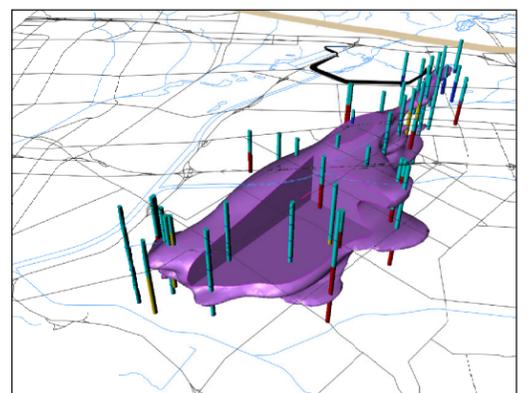
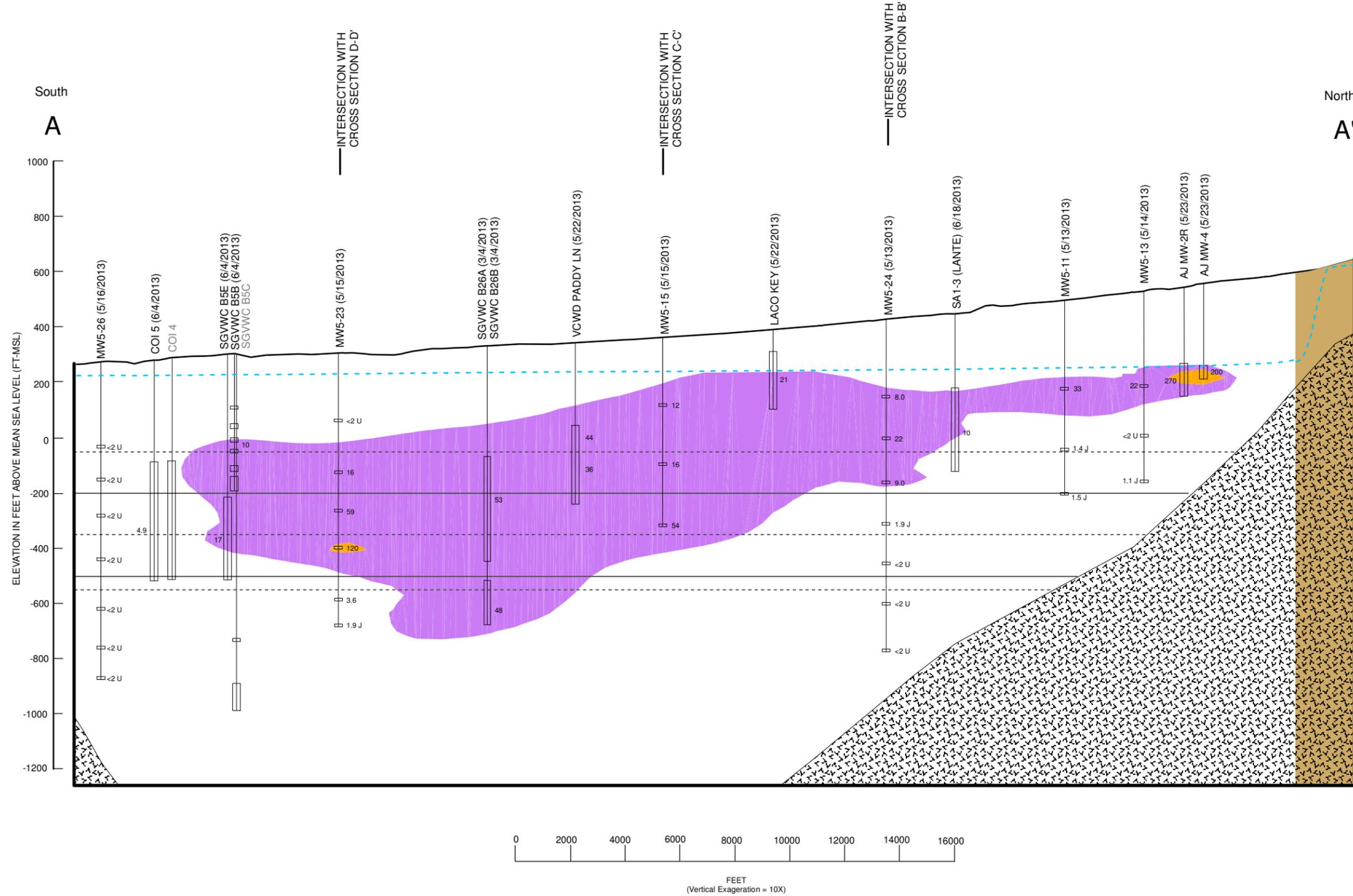
**DISTRIBUTION OF PERCHLORATE  
BETWEEN -200 AND -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Project No. 475.0092.001  
Figure **A-31**





Path: L:\Team Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2A-33\_A\_CrossSection13\_PERCH.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >6 ug/L
- >100 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- - - Discrete elevation (-50, -350 and -550 ft amsl)
- - - Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

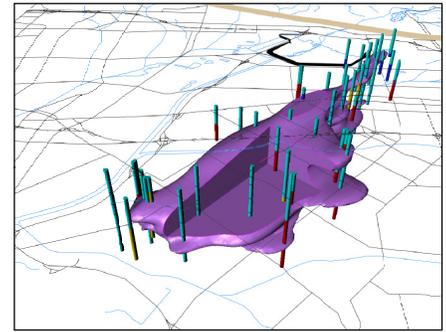
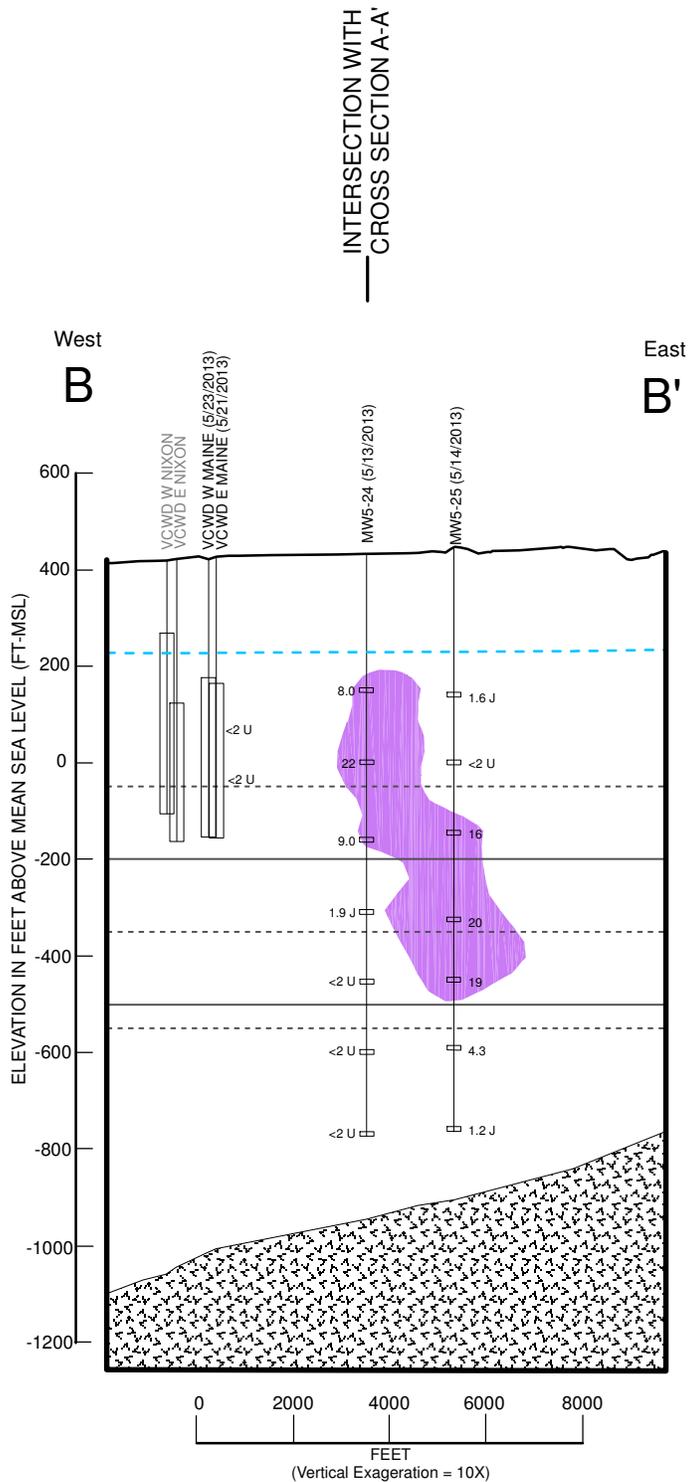
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF PERCHLORATE, 2013  
 CROSS SECTION A-A'  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California**

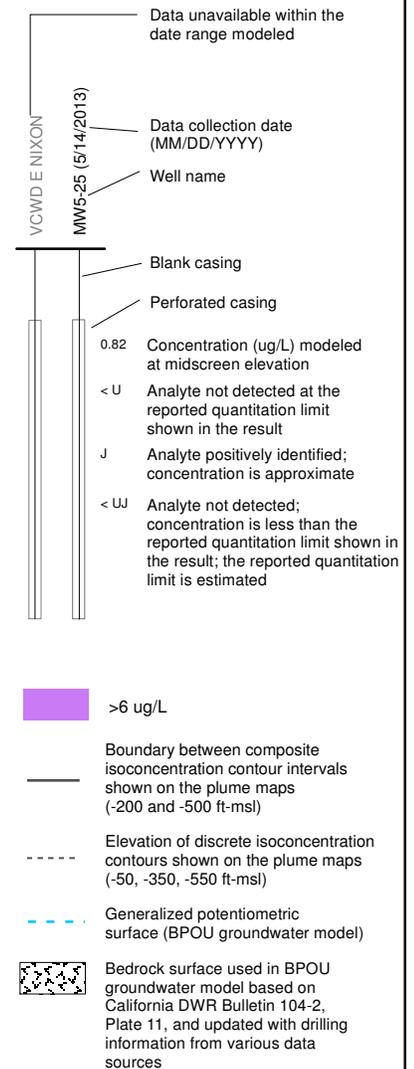
**NewFields** Project No. 475.0092.001  
 Figure **A-33**

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-34\_B\_CrossSection13\_PERCH.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

### EXPLANATION



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

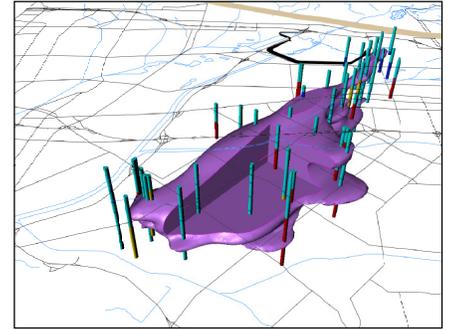
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
PERCHLORATE, 2013  
CROSS SECTION B-B'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

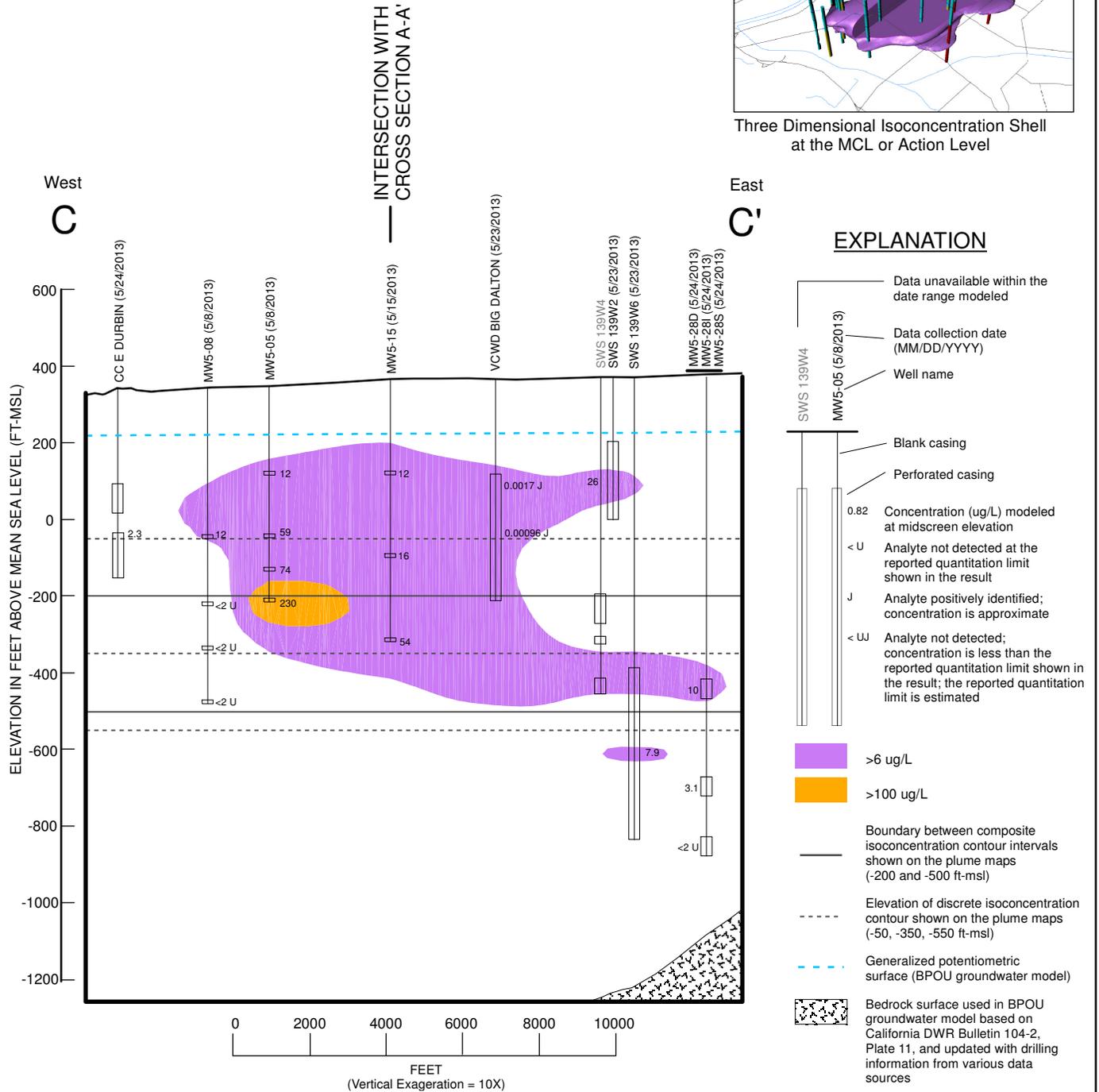


Project No. 475.0092.001

Figure **A-34**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

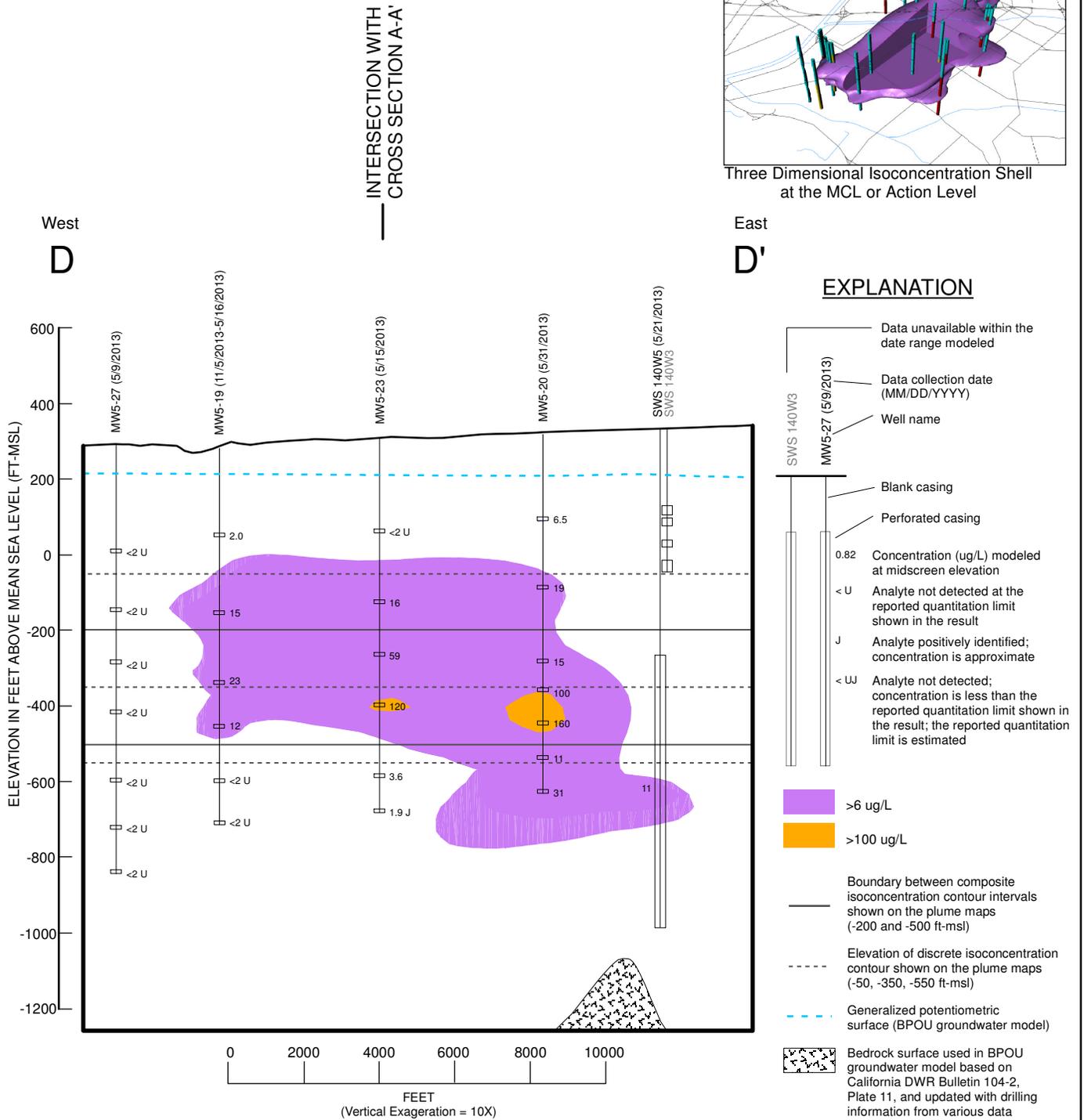
**VERTICAL DISTRIBUTION OF PERCHLORATE, 2013  
CROSS SECTION C-C'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-35**

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-36\_D\_CrossSection13\_PERCH.mxd



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

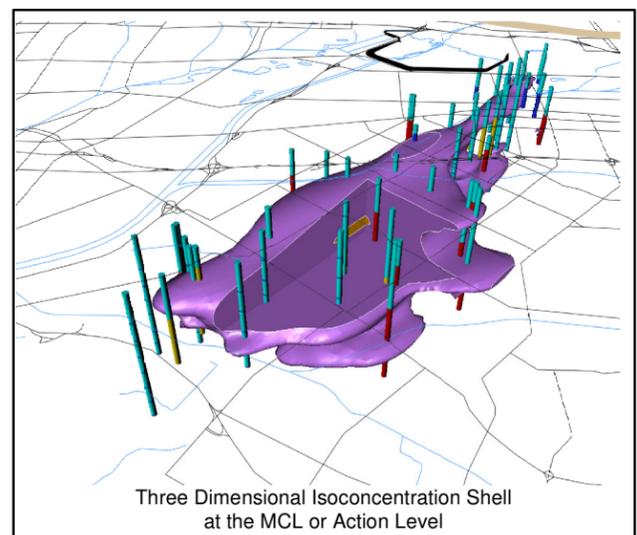
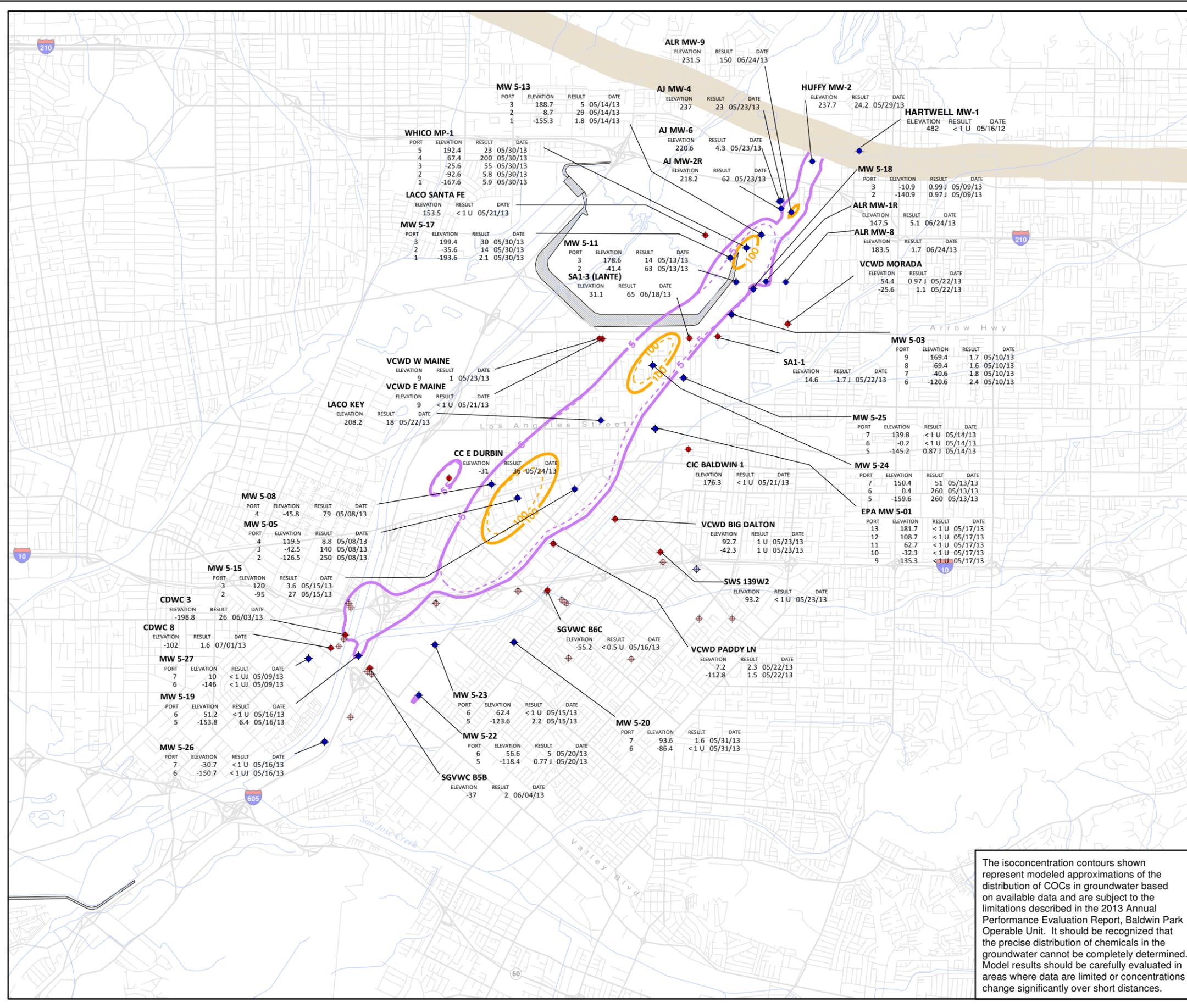
**VERTICAL DISTRIBUTION OF  
PERCHLORATE, 2013  
CROSS SECTION D-D'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-36**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-37\_PlumeMap13\_PCE\_sht.mxd



**EXPLANATION**

- ◆ Production well
- ◆ Production well (no data within elevation range, refer to Note 3)
- ◆ Monitoring and multipoint well
- ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- - - Tetrachloroethene isoconcentration contour at -50 feet (5 ug/L)
- - - Tetrachloroethene isoconcentration contour at -50 feet (100 ug/L)
- Tetrachloroethene composite isoconcentration contour for the elevation interval above -200 feet (5 ug/L)
- Tetrachloroethene composite isoconcentration contour for the elevation interval above -200 feet (100 ug/L)
- Duarte Fault Zone

**NOTES:**

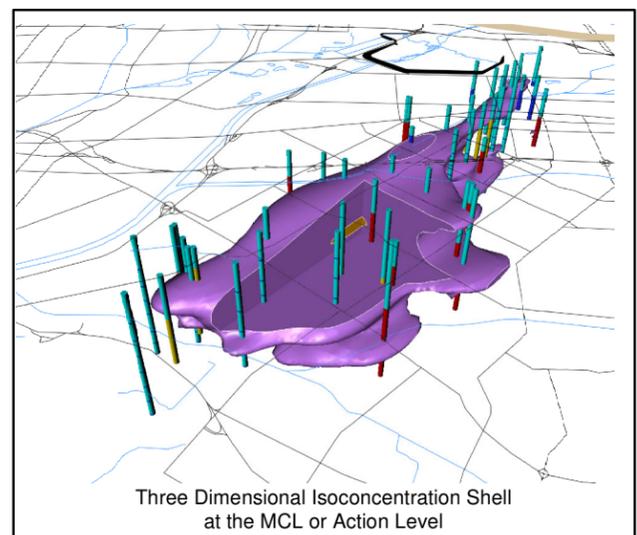
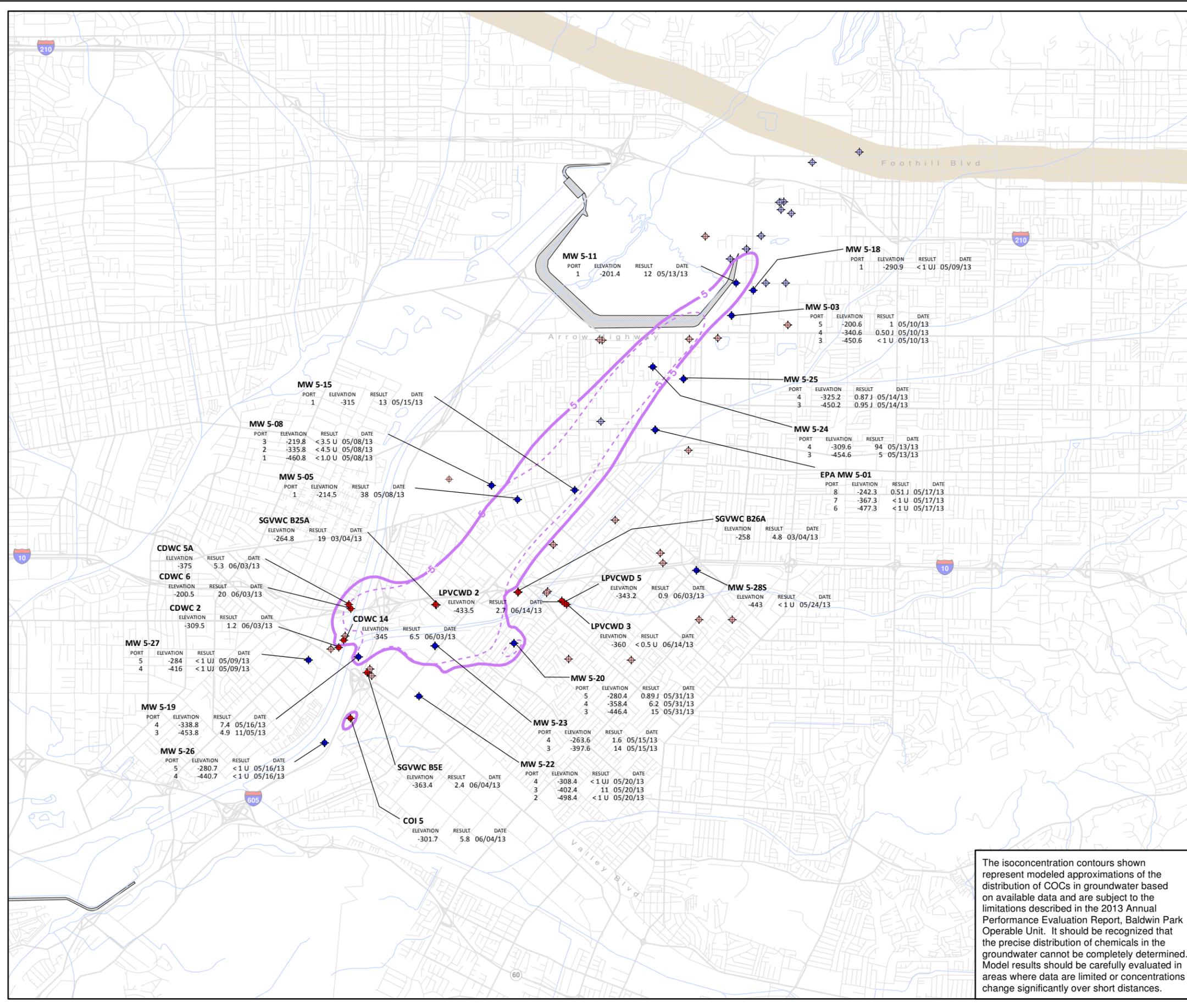
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
3. Posted data represent chemical results for the specified elevation range.
4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TETRACHLOROETHENE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A-38\_PlumeMap13\_PCE\_int.mxd



**EXPLANATION**

- ◆ Production well
- ◆ Production well (no data within elevation range, refer to Note 3)
- ◆ Monitoring and multipoint well
- ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- - - Tetrachloroethene isoconcentration contour at -350 feet (5 ug/L)
- - - Tetrachloroethene isoconcentration contour at -350 feet (100 ug/L)
- Tetrachloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
- Tetrachloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
- Duarte Fault Zone

**NOTES:**

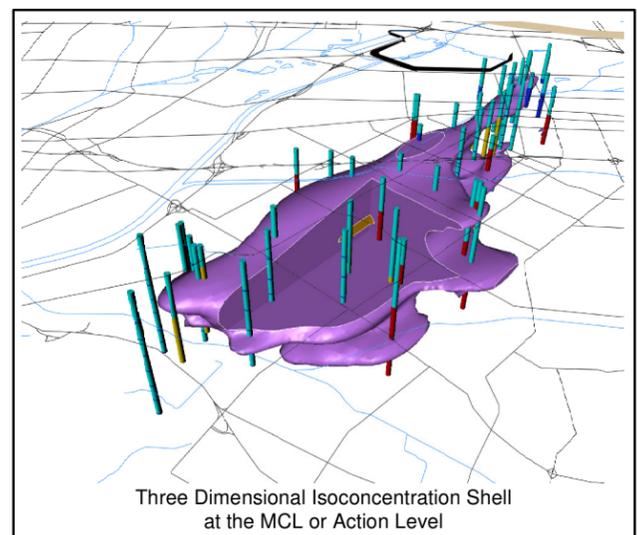
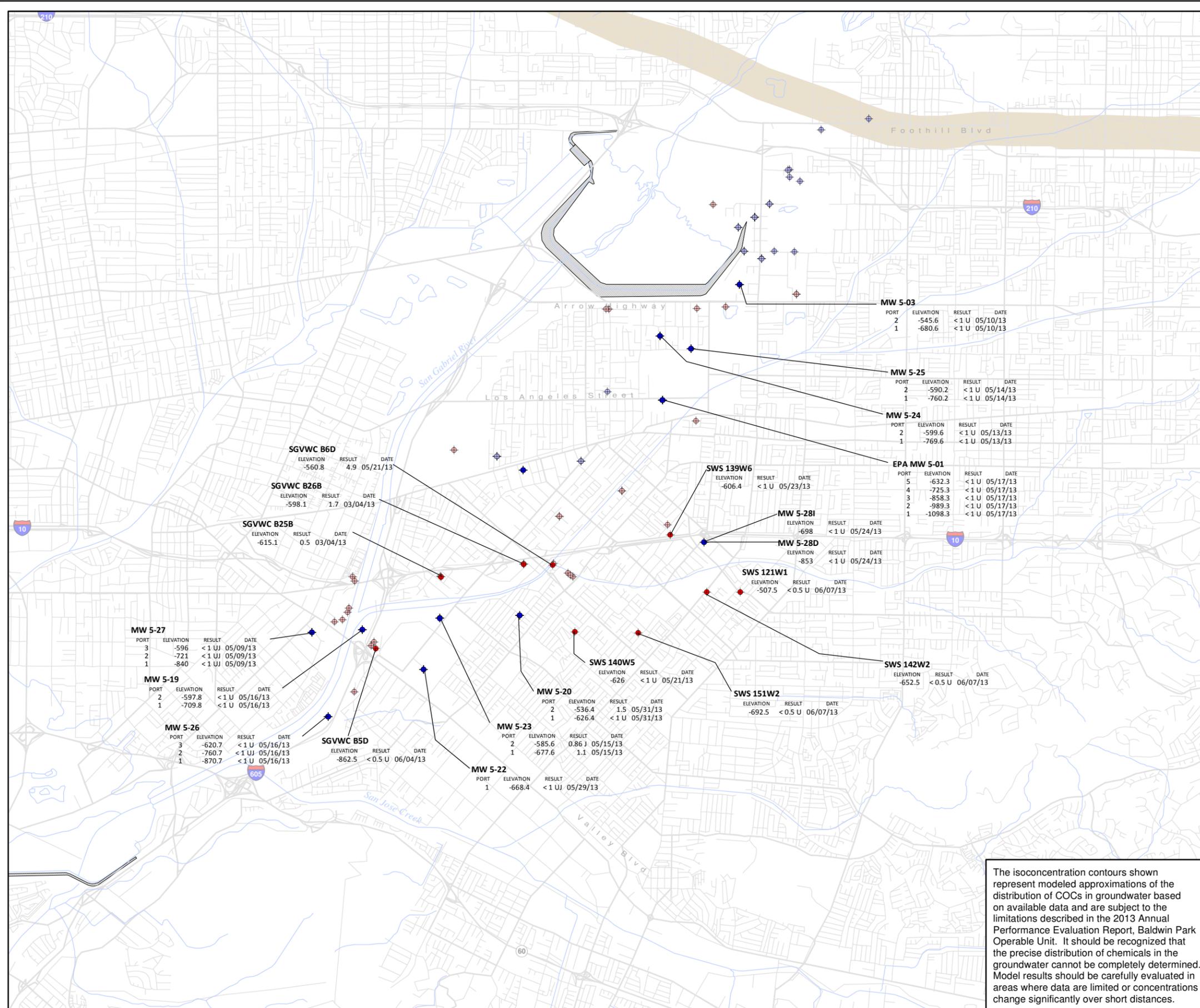
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
3. Posted data represent chemical results for the specified elevation range.
4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TETRACHLOROETHENE BETWEEN -200 AND -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2A-39\_PlumeMap13\_PCE\_dip.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - Duarte Fault Zone

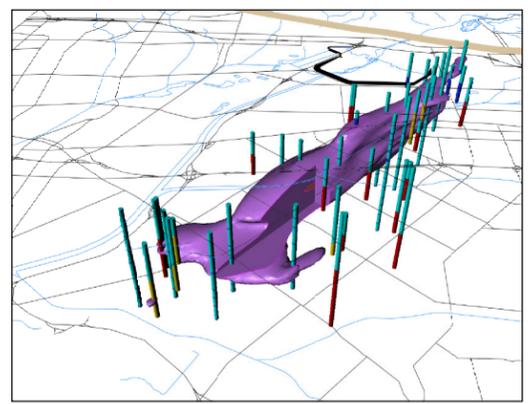
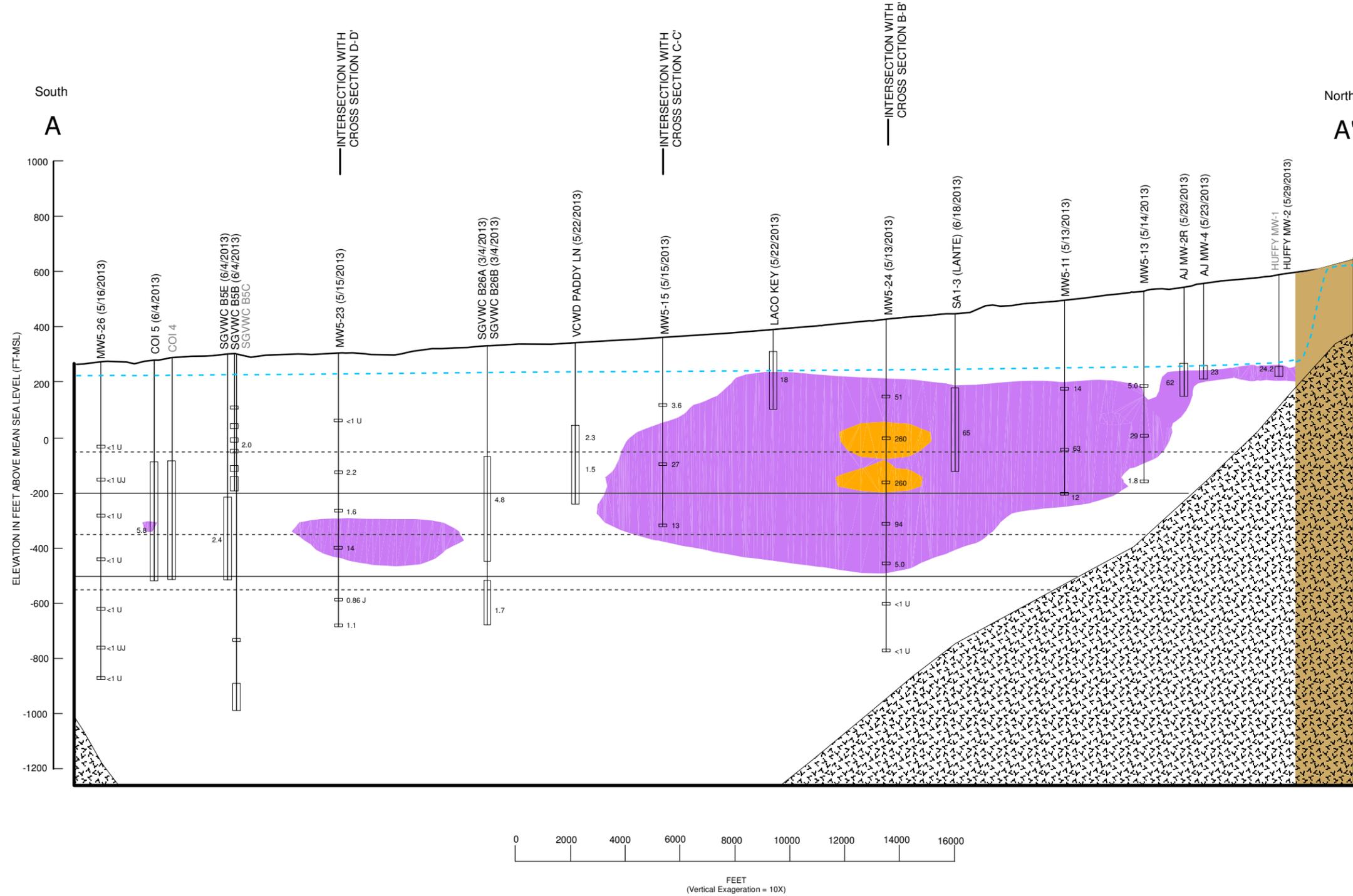
- NOTES:**
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  3. Posted data represent chemical results for the specified elevation range.
  4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TETRACHLOROETHENE BELOW -500 FEET MSL, 2013**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2A-40\_A\_CrossSection13\_PCE.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

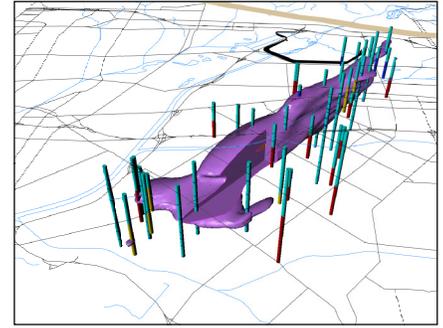
- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < U Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- >100 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- - - Discrete elevation (-50, -350 and -550 ft amsl)
- - - Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

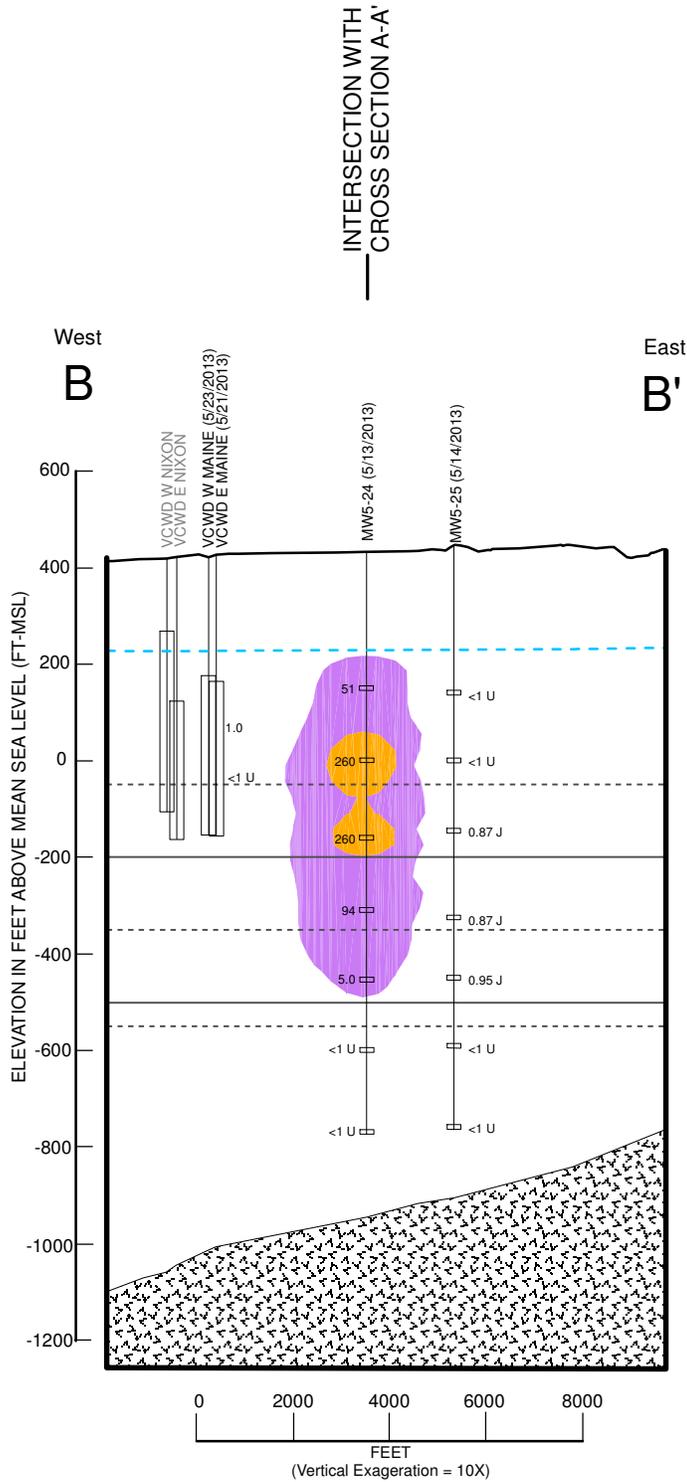
Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF TETRACHLOROETHENE, 2013 CROSS SECTION A-A'**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No. 475.0092.001  
 Figure **A-40**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



### EXPLANATION

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- >100 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contours shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

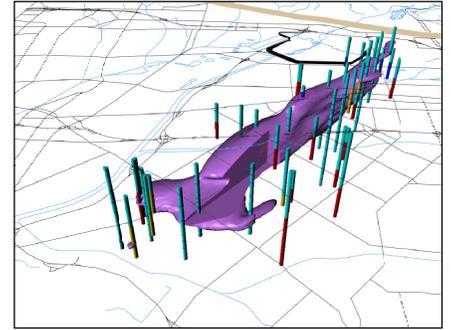
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

## VERTICAL DISTRIBUTION OF TETRACHLOROETHENE, 2013 CROSS SECTION B-B' Baldwin Park Operable Unit San Gabriel Valley, California

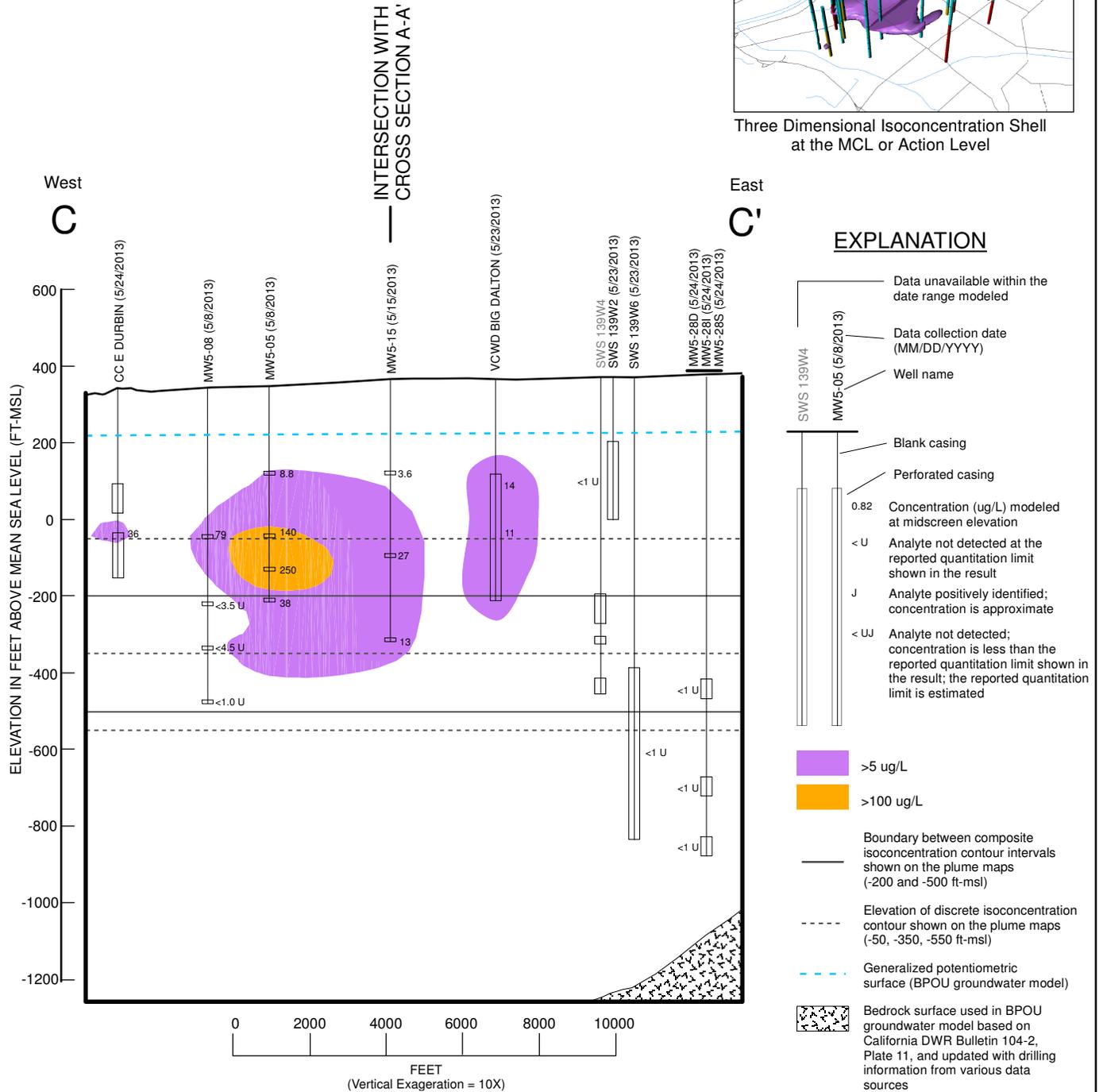


Project No. 475.0092.001

Figure **A-41**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

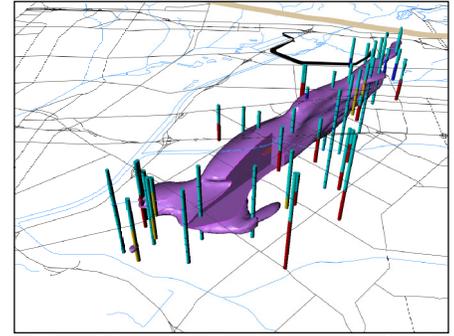
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF  
TETRACHLOROETHENE  
CROSS SECTION C-C'  
Baldwin Park Operable Unit  
San Gabriel Valley, California**

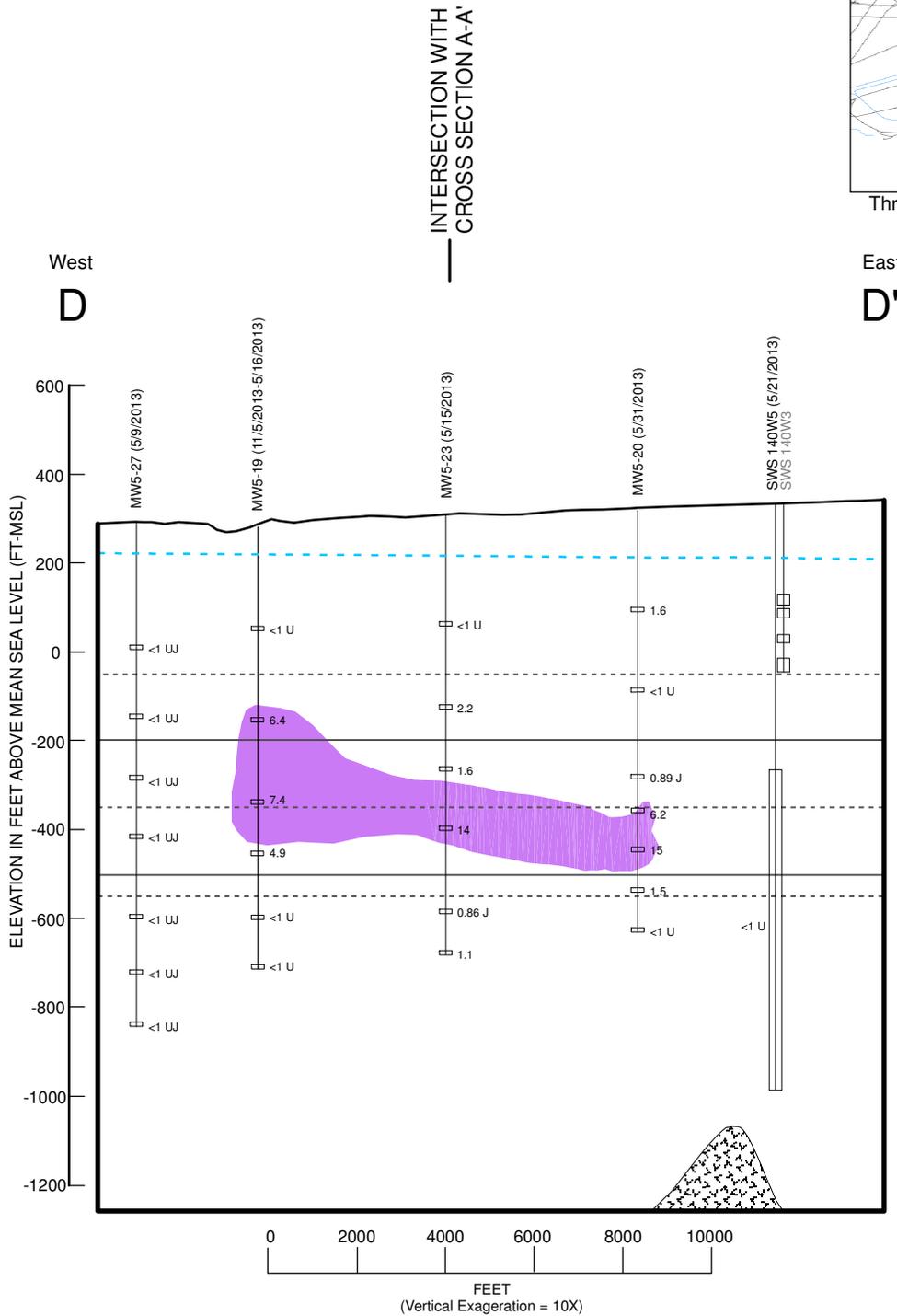


Project No. 475.0092.001

Figure **A-42**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



### EXPLANATION

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contour shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

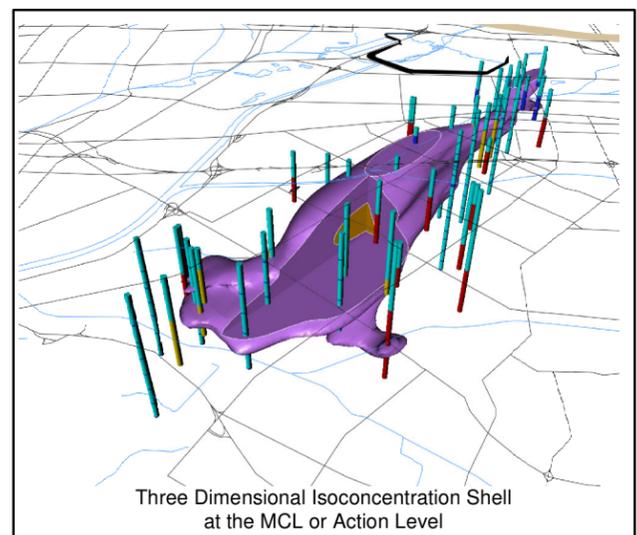
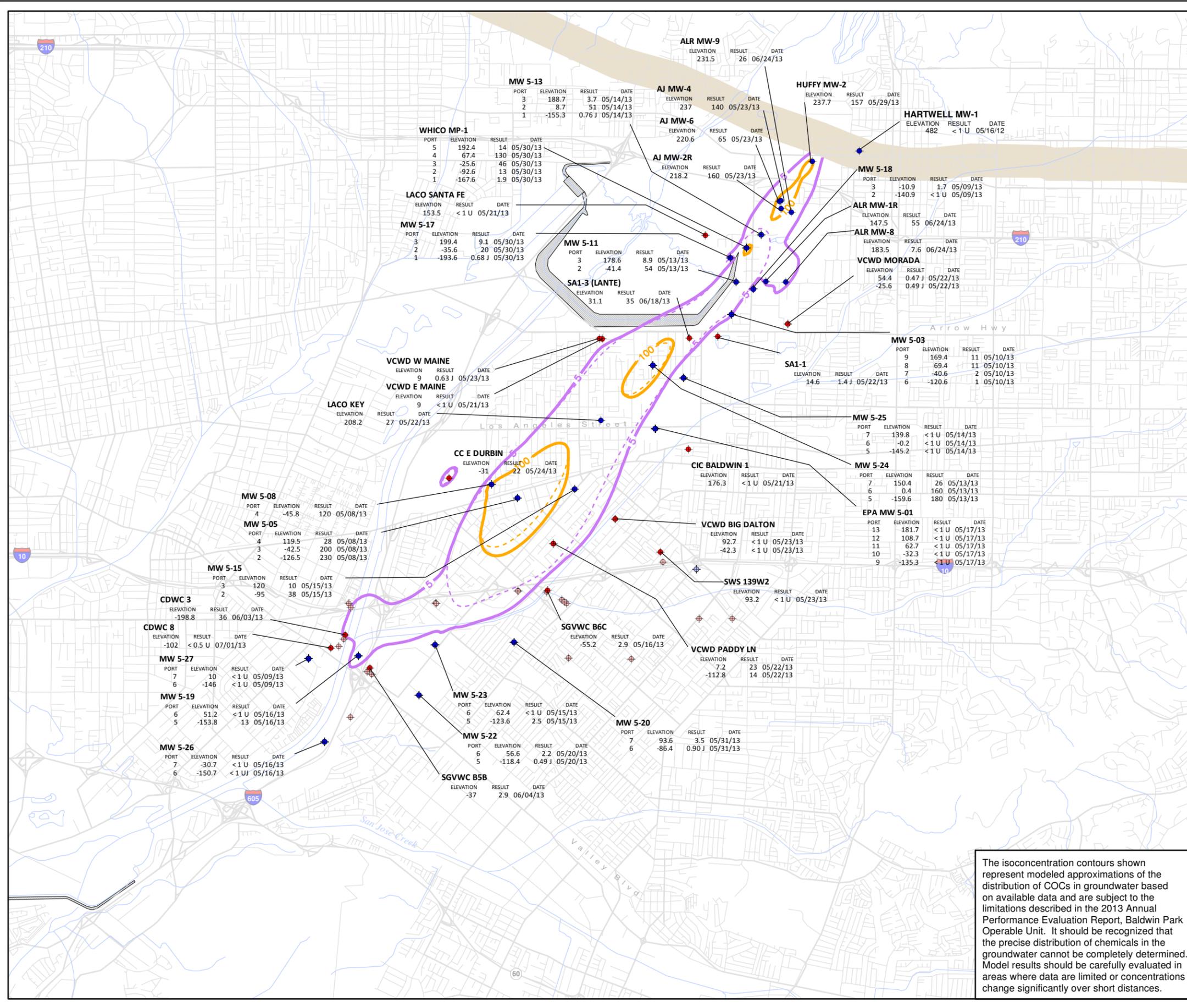
## VERTICAL DISTRIBUTION OF TETRACHLOROETHENE, 2013 CROSS SECTION D-D' Baldwin Park Operable Unit San Gabriel Valley, California



Project No. 475.0092.001

Figure **A-43**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-44\_PlumeMap13\_TCE\_sh.mxd



**EXPLANATION**

- ◆ Production well
- ◆ Production well (no data within elevation range, refer to Note 3)
- ◆ Monitoring and multipoint well
- ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- - - Trichloroethene isoconcentration contour at -50 feet (5 ug/L)
- - - Trichloroethene isoconcentration contour at -50 feet (100 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval above -200 feet (5 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval above -200 feet (100 ug/L)
- Duarte Fault Zone

**NOTES:**

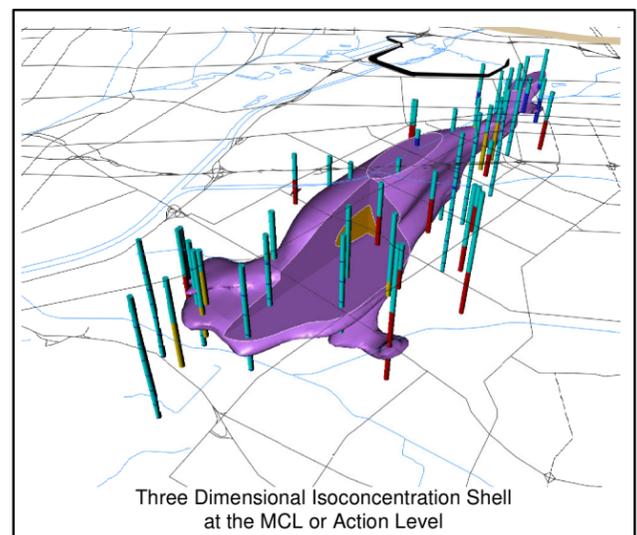
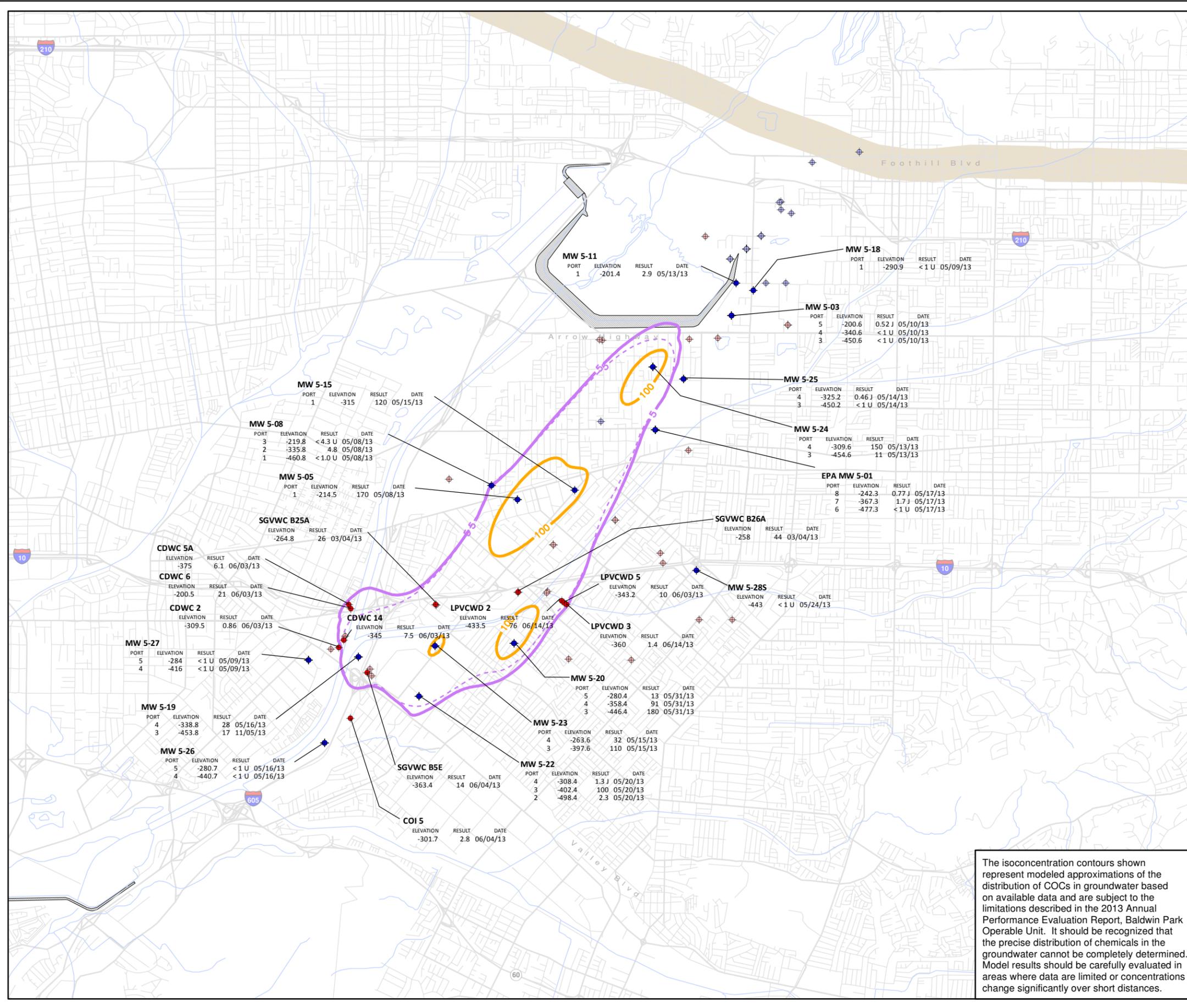
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
3. Posted data represent chemical results for the specified elevation range.
4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



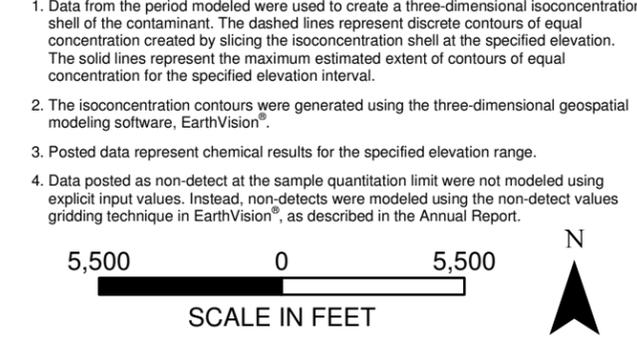
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TRICHLOROETHENE ABOVE -200 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2-A-45\_PlumeMap13\_TCE\_int.mxd



- EXPLANATION**
- ◆ Production well
  - ◆ Production well (no data within elevation range, refer to Note 3)
  - ◆ Monitoring and multipoint well
  - ◆ Monitoring and multipoint well (no data within elevation range, refer to Note 3)
  - < U Analyte not detected at the reported quantitation limit shown in the result
  - J Analyte positively identified; concentration is approximate
  - UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
  - - - Trichloroethene isoconcentration contour at -350 feet (5 ug/L)
  - - - Trichloroethene isoconcentration contour at -350 feet (100 ug/L)
  - Trichloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
  - Trichloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
  - Duarte Fault Zone
- NOTES:**
- Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
  - The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
  - Posted data represent chemical results for the specified elevation range.
  - Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.

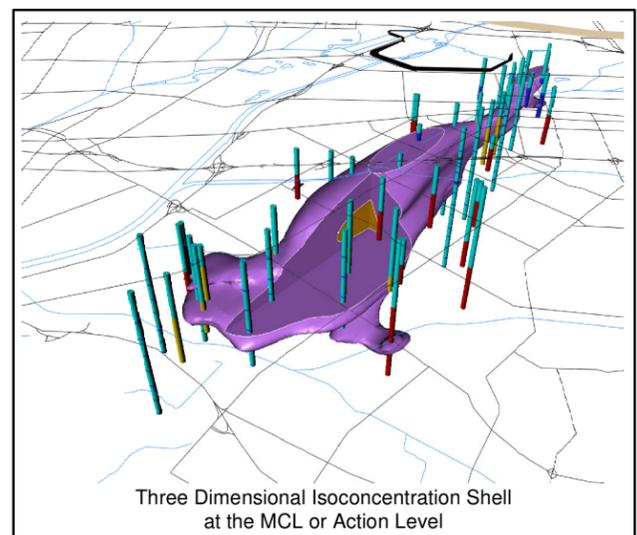
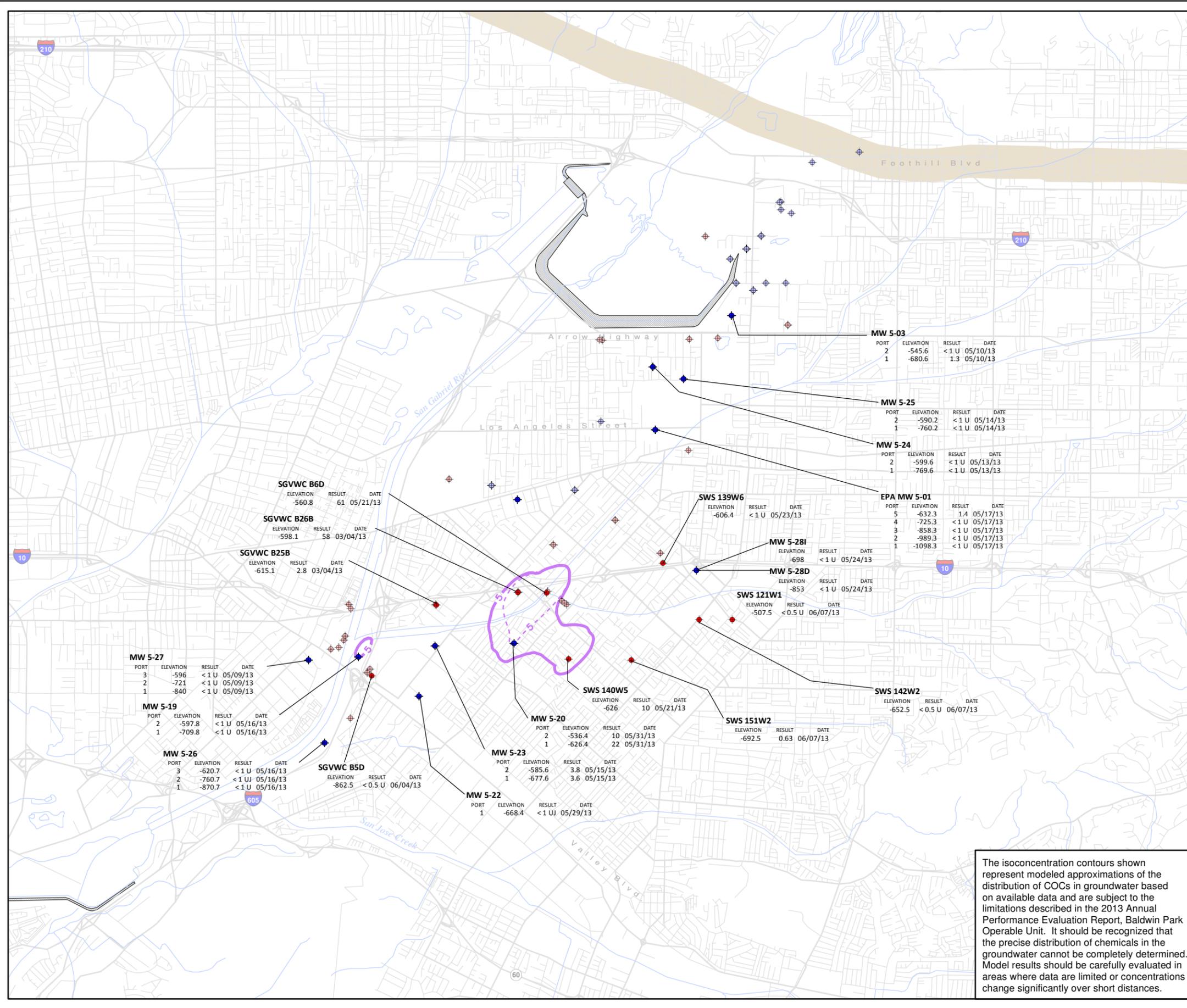


The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TRICHLOROETHENE BETWEEN -200 AND -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

**NewFields** Project No. 475.0092.001  
Figure **A-45**

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NF\Figures\GIS\Volume 2\A-46\_PlumeMap13\_TCE\_dip.mxd

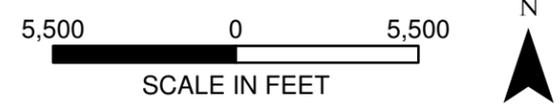


**EXPLANATION**

- ◆ Production well
- ◆ Production well (no data within elevation range, refer to Note 3)
- ◆ Monitoring and multiport well
- ◆ Monitoring and multiport well (no data within elevation range, refer to Note 3)
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- - - Trichloroethene isoconcentration contour at -550 feet (5 ug/L)
- - - Trichloroethene isoconcentration contour at -550 feet (100 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval below -500 feet (5 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval below -500 feet (100 ug/L)
- Duarte Fault Zone

**NOTES:**

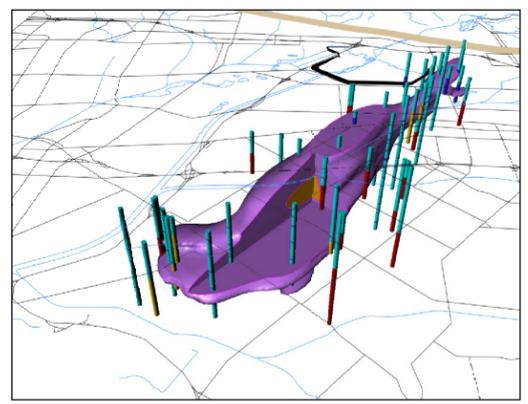
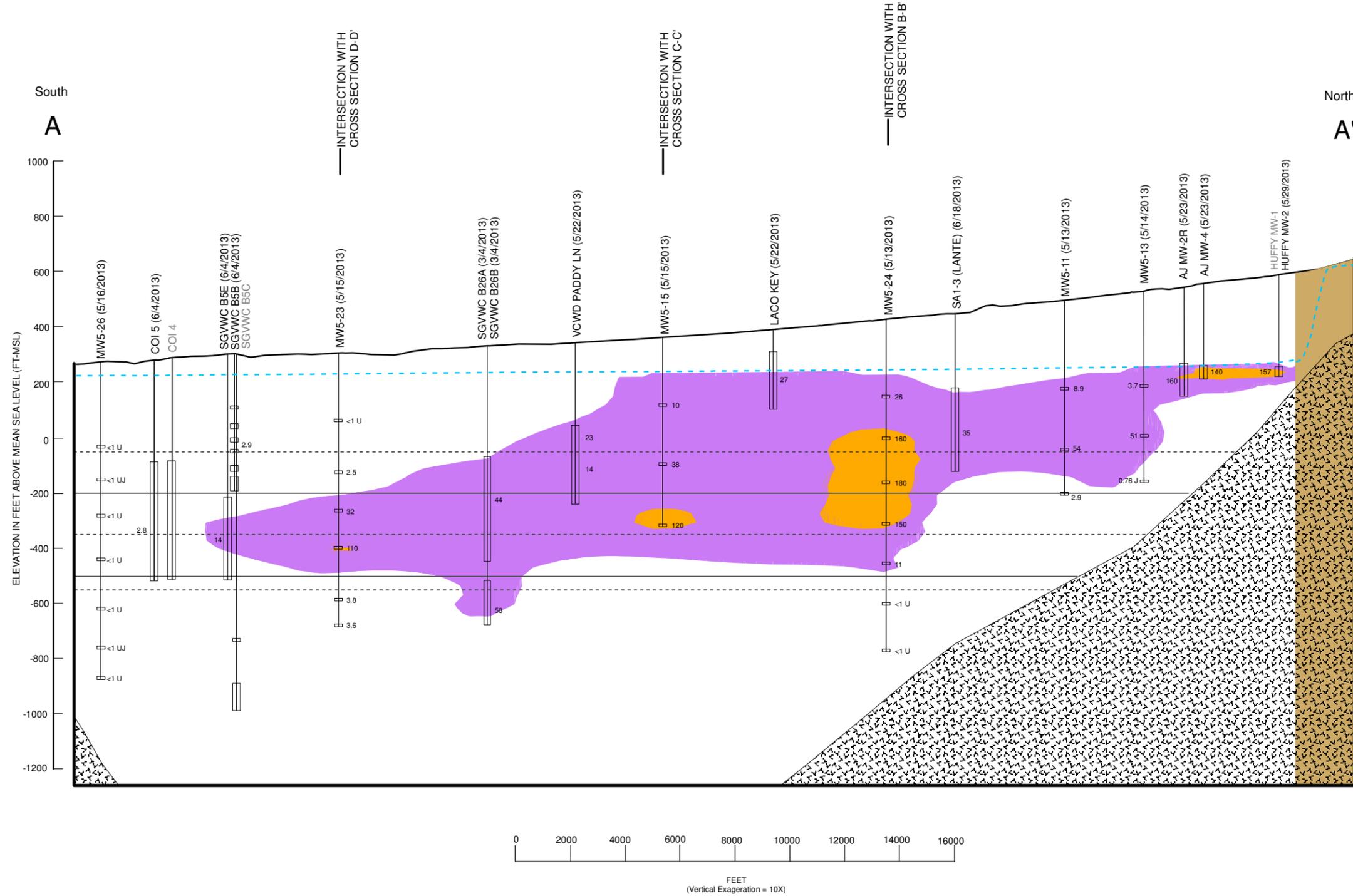
1. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The dashed lines represent discrete contours of equal concentration created by slicing the isoconcentration shell at the specified elevation. The solid lines represent the maximum estimated extent of contours of equal concentration for the specified elevation interval.
2. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, EarthVision™.
3. Posted data represent chemical results for the specified elevation range.
4. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision™, as described in the Annual Report.



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**DISTRIBUTION OF TRICHLOROETHENE BELOW -500 FEET MSL, 2013**  
Baldwin Park Operable Unit  
San Gabriel Valley, California

Path: L:\Team Folders\Internal\BPOU2013 Annual Report\_NFs\Figures\GIS\Volume 2A-47\_A\_CrossSection13\_TCE.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- >100 ug/L
- Interval elevation boundary (-200 and -500 ft amsl)
- Discrete elevation (-50, -350 and -550 ft amsl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte Fault Zone

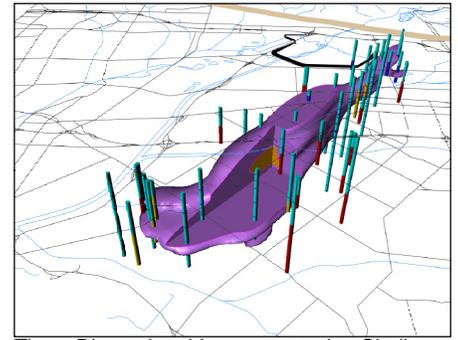
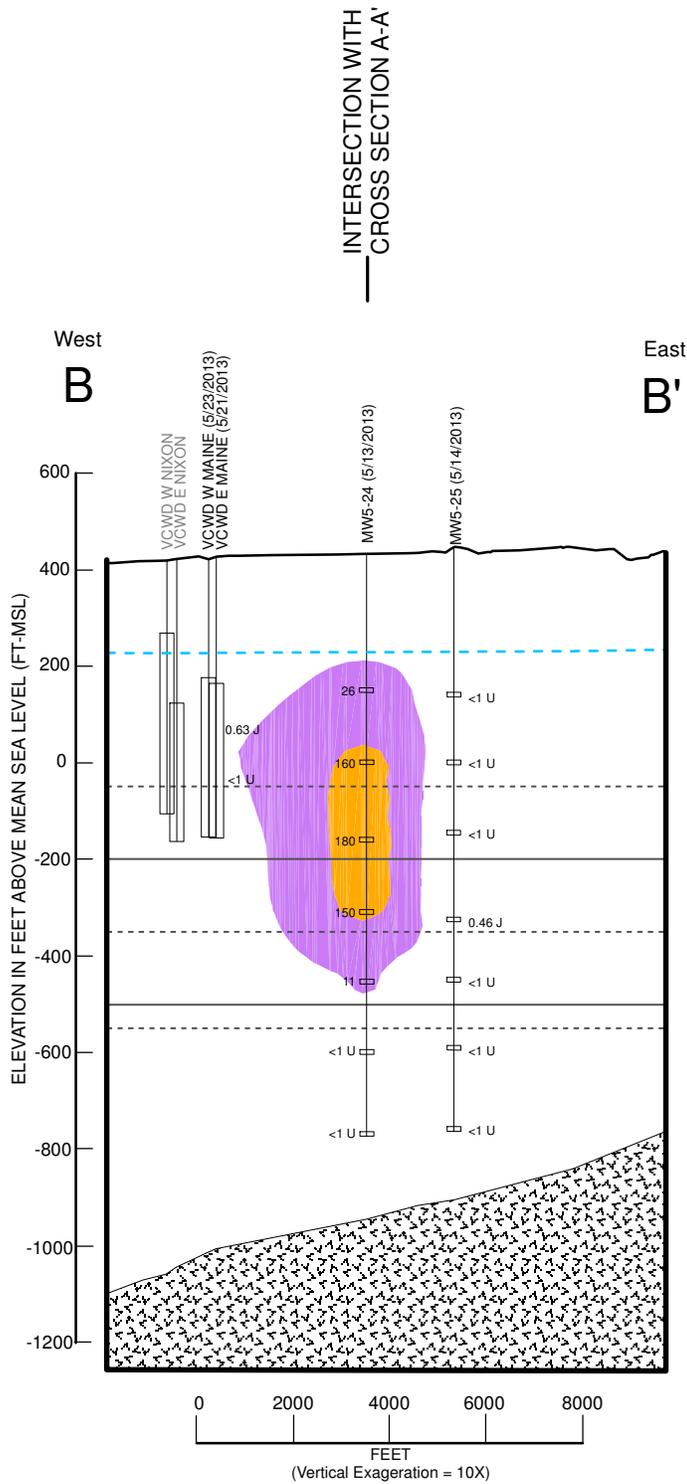
The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

Note:  
 1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF TRICHLOROETHENE, 2013 CROSS SECTION A-A'**  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

**NewFields** Project No. 475.0092.001  
 Figure **A-47**

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-48\_B\_CrossSection13\_TCE.mxd



Three Dimensional Isoconcentration Shell at the MCL or Action Level

**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UJ Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- >100 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contours shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

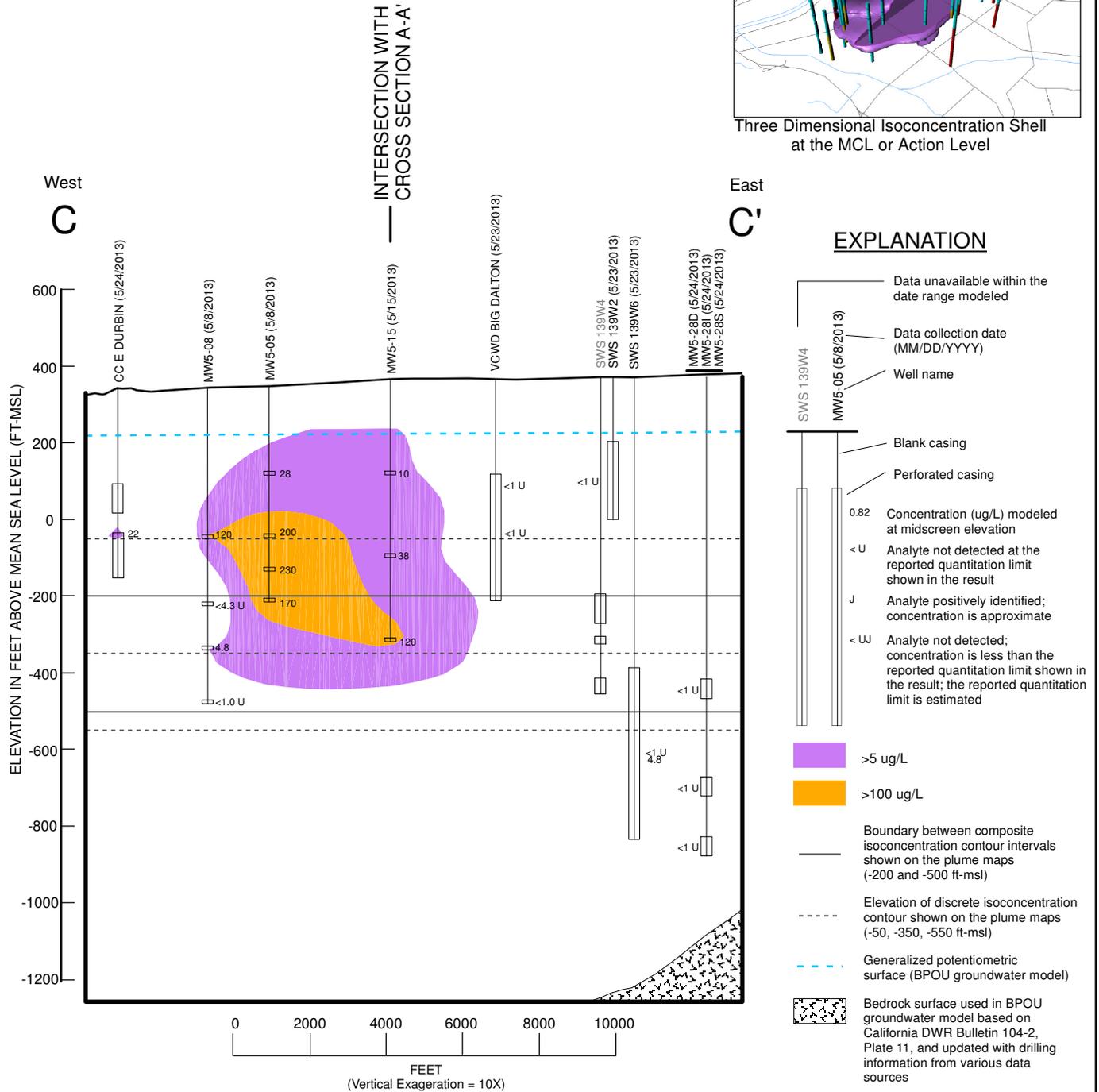
**VERTICAL DISTRIBUTION OF TRICHLOROETHENE, 2013 CROSS SECTION B-B' Baldwin Park Operable Unit San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-48**

Path: L:\Team\ Folders\Internal\BPOU\2013 Annual Report\_NFs\Figures\GIS\Volume 2\A-49\_C\_CrossSection13\_TCE.mxd



The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

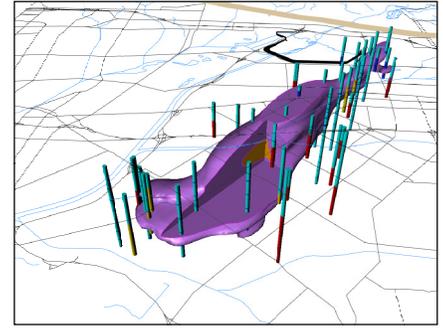
1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF TRICHLOROETHENE, 2013 CROSS SECTION C-C' Baldwin Park Operable Unit San Gabriel Valley, California**

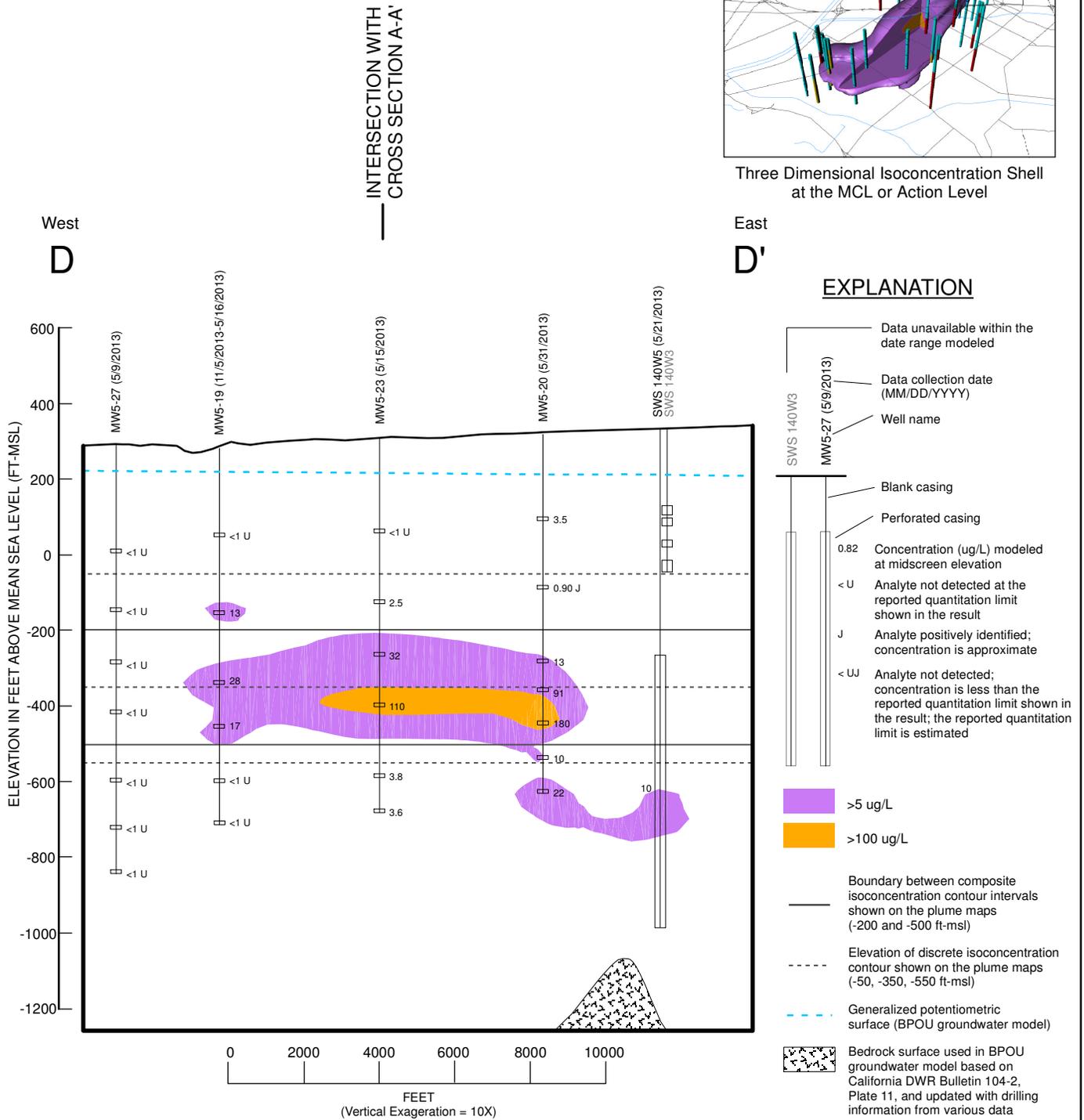


Project No. 475.0092.001

Figure **A-49**



Three Dimensional Isoconcentration Shell at the MCL or Action Level



**EXPLANATION**

- Data unavailable within the date range modeled
- Data collection date (MM/DD/YYYY)
- Well name
- Blank casing
- Perforated casing
- 0.82 Concentration (ug/L) modeled at midscreen elevation
- < U Analyte not detected at the reported quantitation limit shown in the result
- J Analyte positively identified; concentration is approximate
- < UU Analyte not detected; concentration is less than the reported quantitation limit shown in the result; the reported quantitation limit is estimated
- >5 ug/L
- >100 ug/L
- Boundary between composite isoconcentration contour intervals shown on the plume maps (-200 and -500 ft-msl)
- Elevation of discrete isoconcentration contour shown on the plume maps (-50, -350, -550 ft-msl)
- Generalized potentiometric surface (BPOU groundwater model)
- ▨ Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various data sources

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2013 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

**Note:**

1. Data posted as non-detect at the sample quantitation limit were not modeled using explicit input values. Instead, non-detects were modeled using the non-detect values gridding technique in EarthVision, as described in the Annual Report.

**VERTICAL DISTRIBUTION OF TRICHLOROETHENE, 2013 CROSS SECTION D-D' Baldwin Park Operable Unit San Gabriel Valley, California**



Project No. 475.0092.001

Figure **A-50**

## **APPENDIX B**

TIME-CONCENTRATION GRAPHS FOR PROJECT EXTRACTION WELLS

## **APPENDIX B TIME-CONCENTRATION GRAPHS FOR PROJECT EXTRACTION WELLS**

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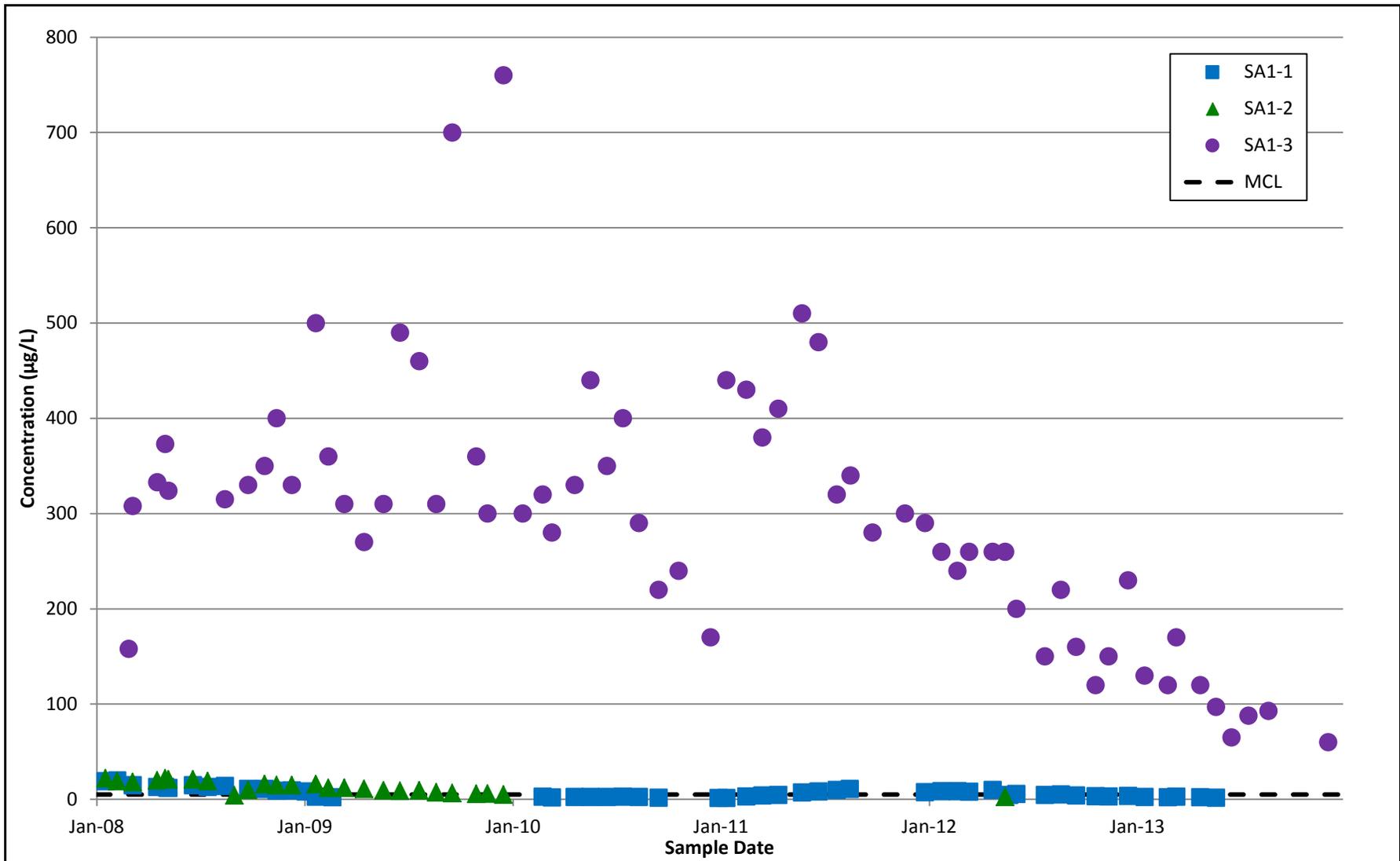


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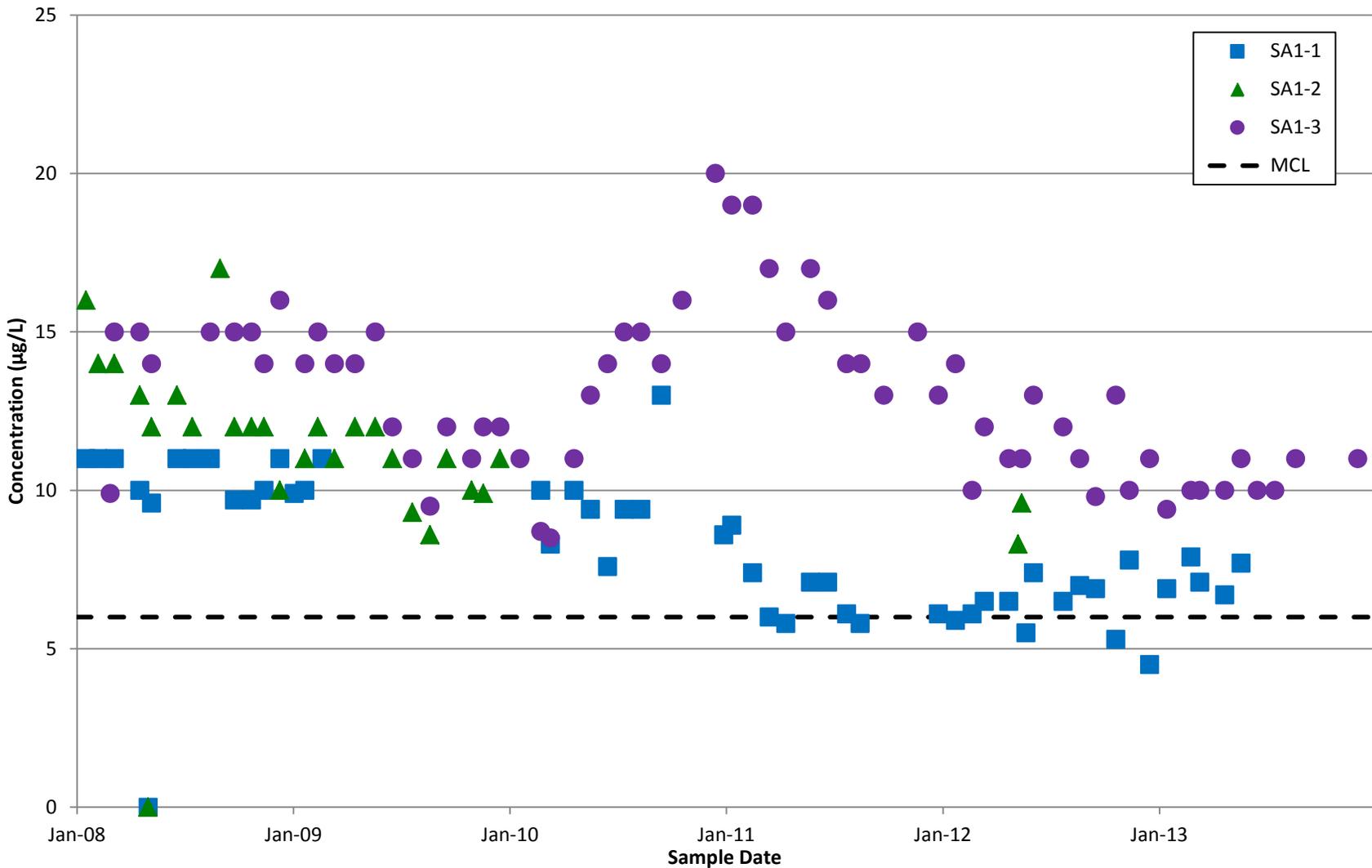
Note: Open symbols signify non-detects.



TETRACHLOROETHENE CONCENTRATIONS, RAW WATER  
 VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-3**



Note: Open symbols signify non-detects.



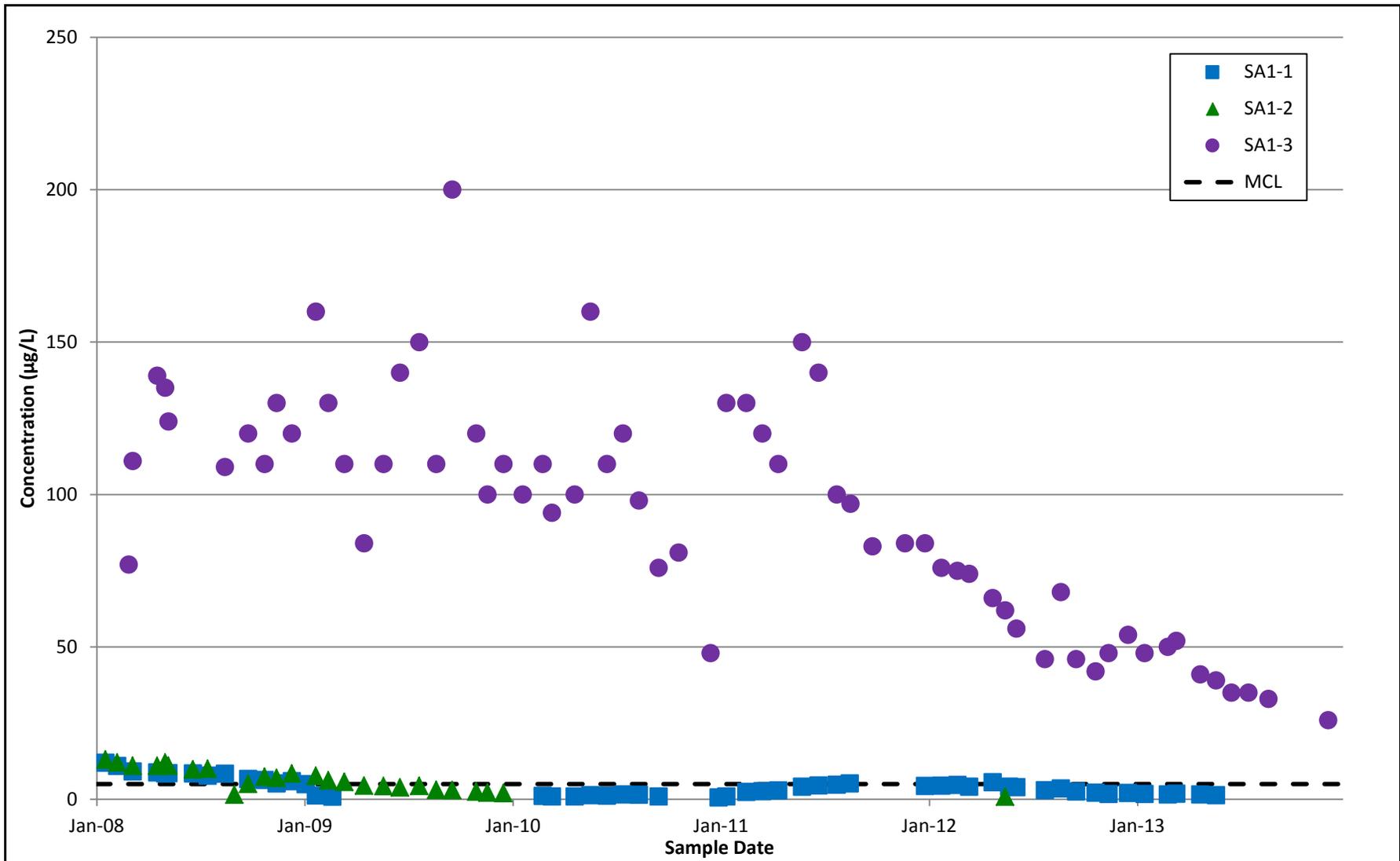
PERCHLORATE CONCENTRATIONS, RAW WATER  
 VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-4**







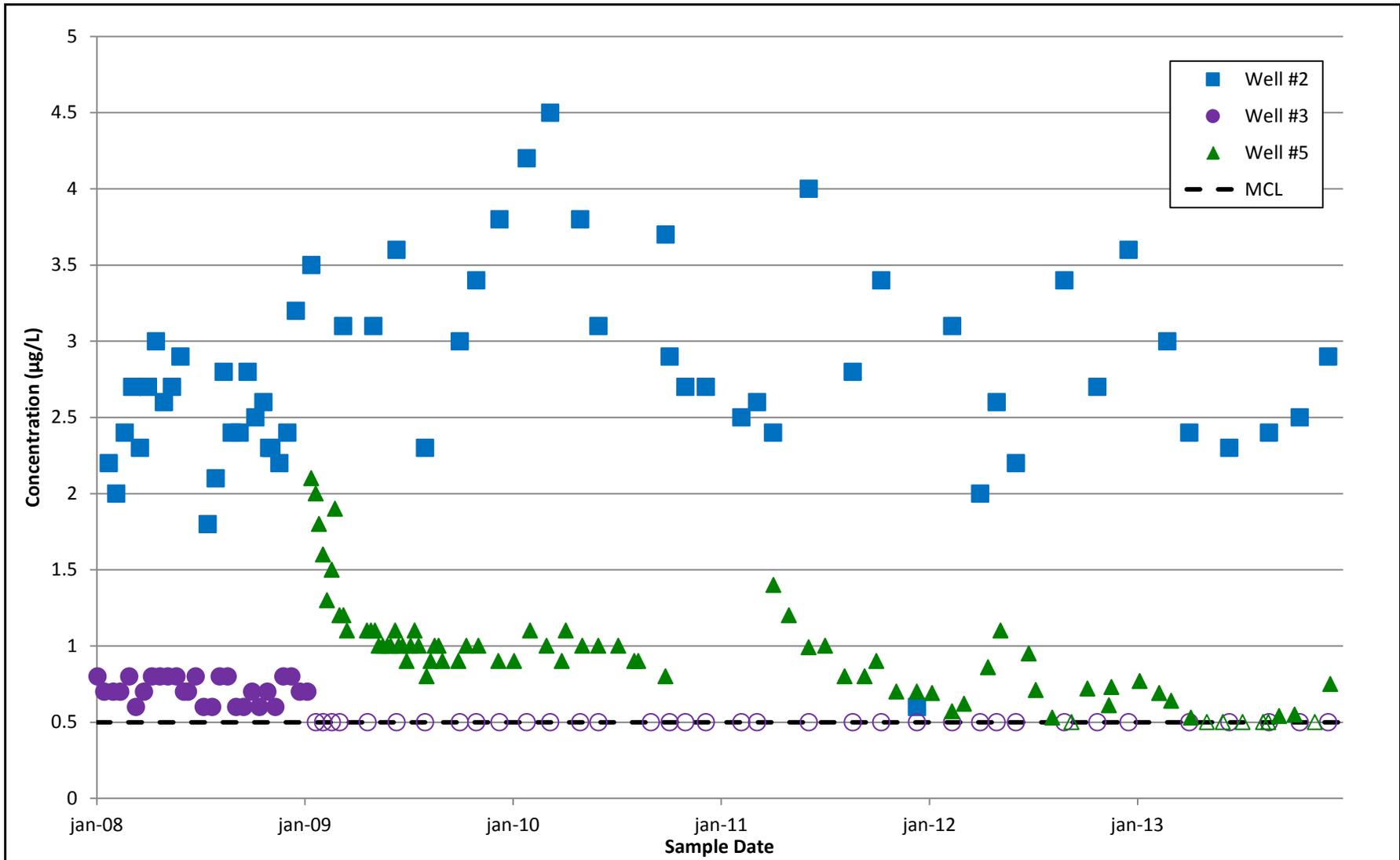
Note: Open symbols signify non-detects.



TRICHLOROETHENE CONCENTRATIONS, RAW WATER  
 VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-7**



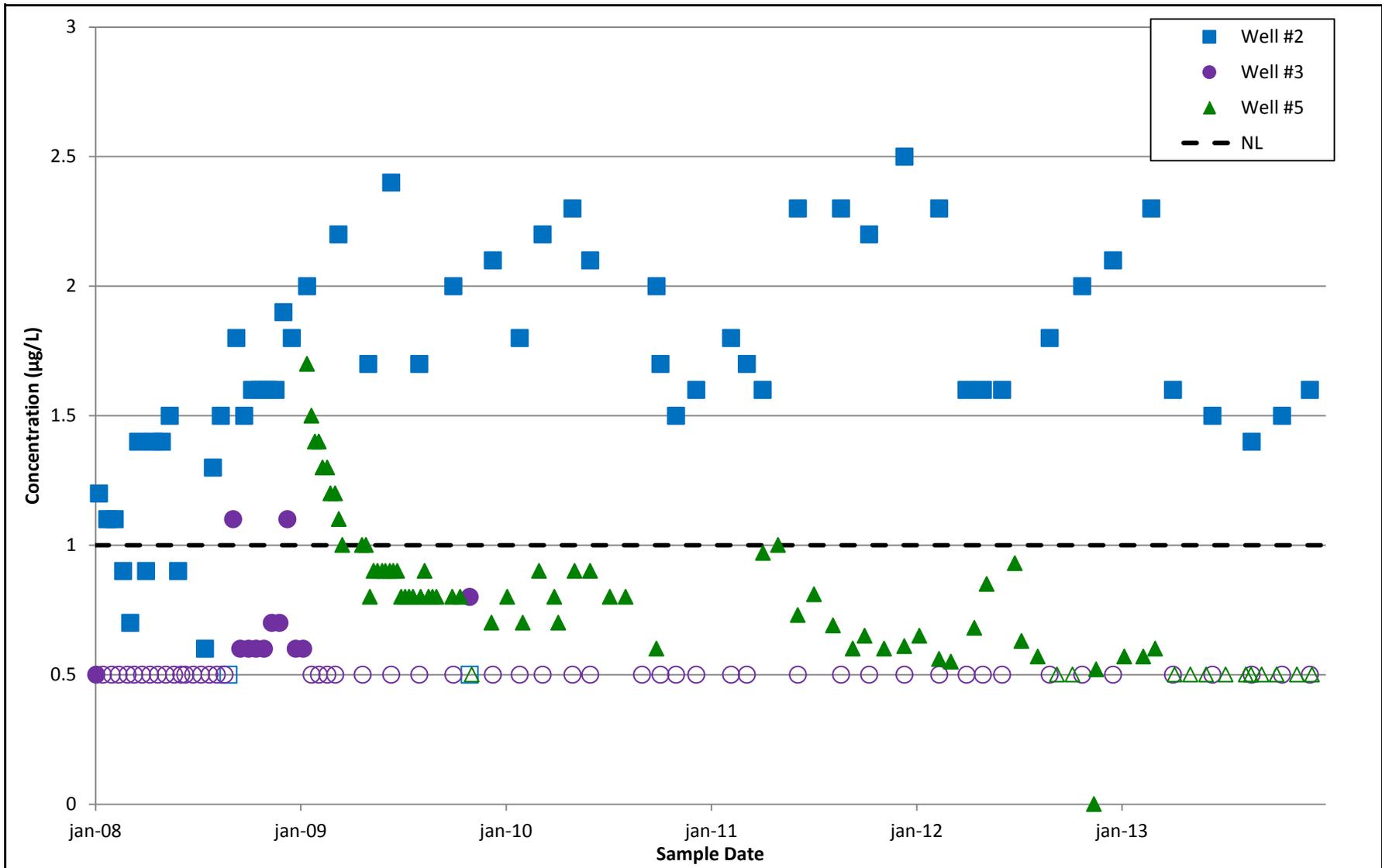
Note: Open symbols signify non-detects.



1,2-DCA CONCENTRATIONS, RAW WATER  
 LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

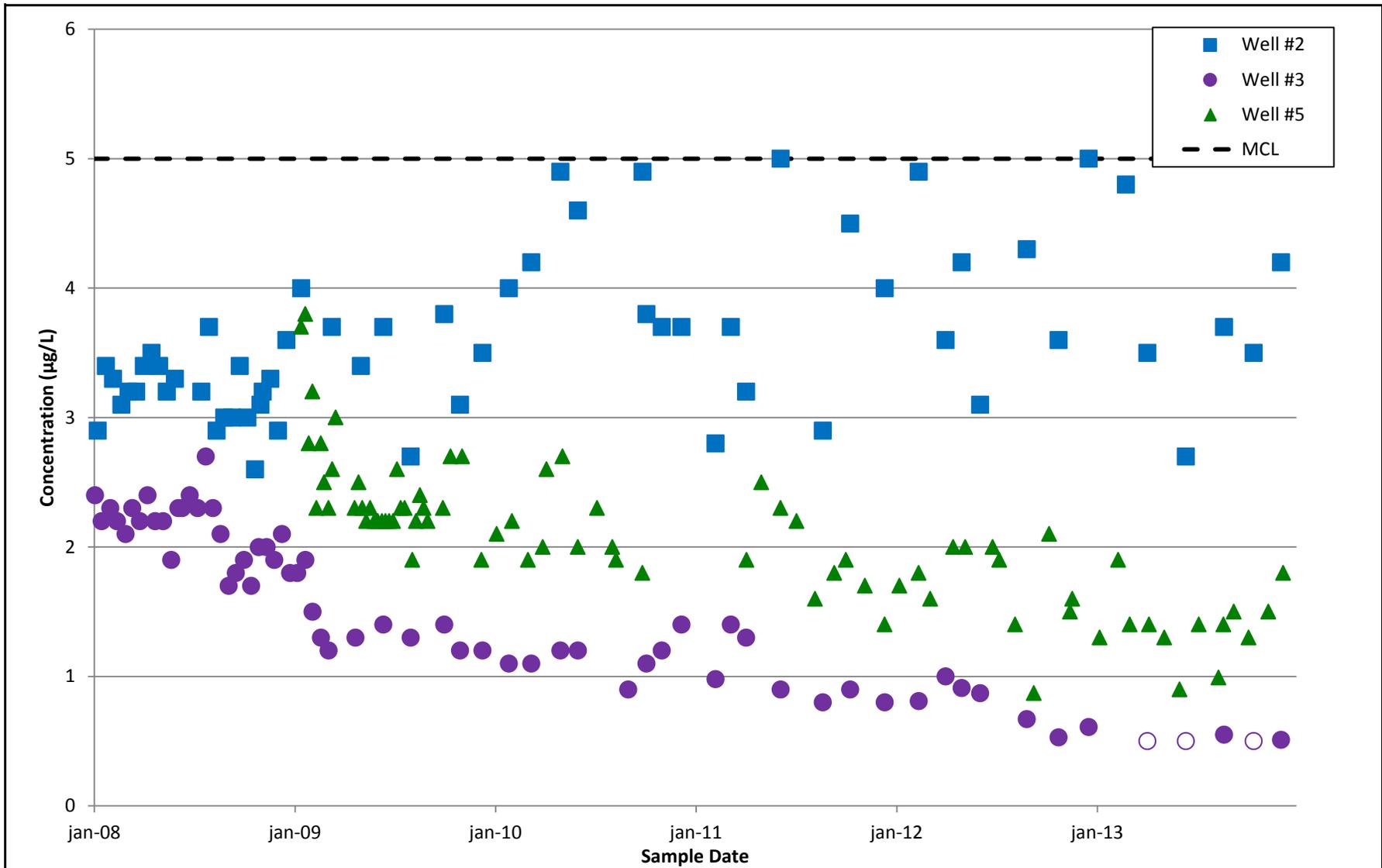
Project No.

Figure  
**B-8**



Note: Open symbols signify non-detects.

	<p>1,4-DIOXANE CONCENTRATIONS, RAW WATER          LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)          Baldwin Park Operable Unit          San Gabriel Valley, California</p>	Project No.
		Figure <b>B-9</b>



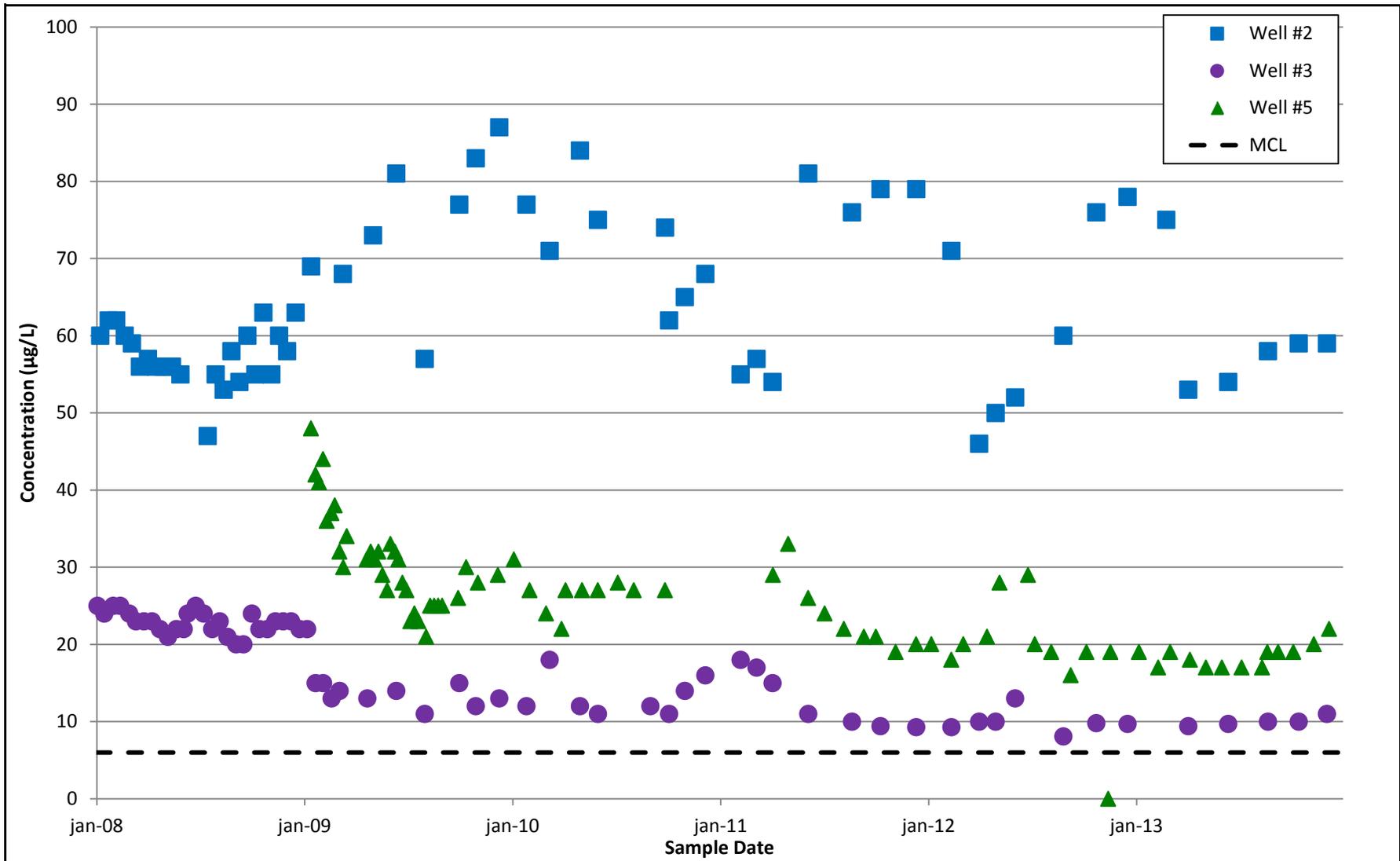
Note: Open symbols signify non-detects.



TETRACHLOROETHENE CONCENTRATIONS, RAW WATER  
 LA PUNETE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-10**



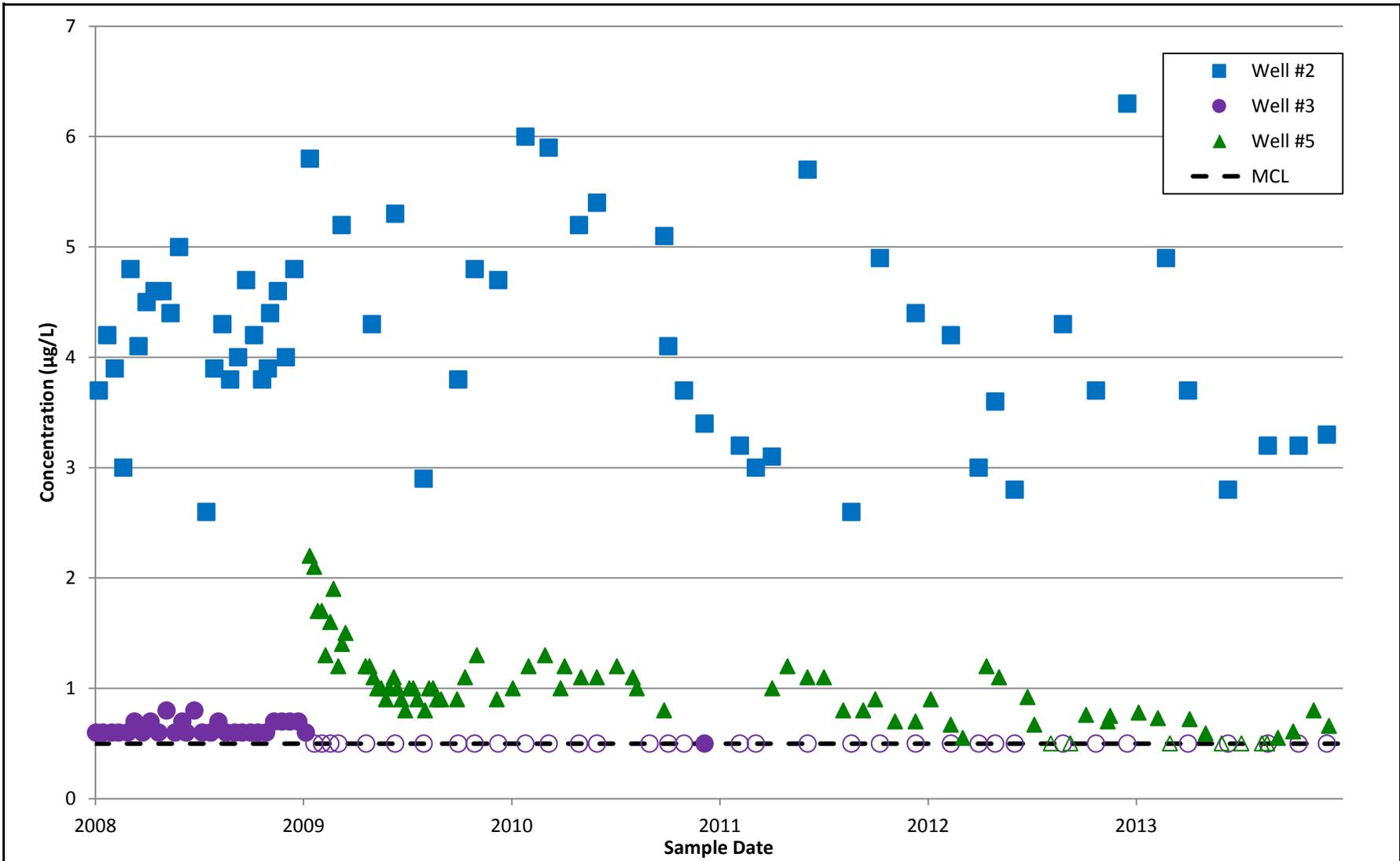
Note: Open symbols signify non-detects.



PERCHLORATE CONCENTRATIONS, RAW WATER  
 LA PUNETE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-11**



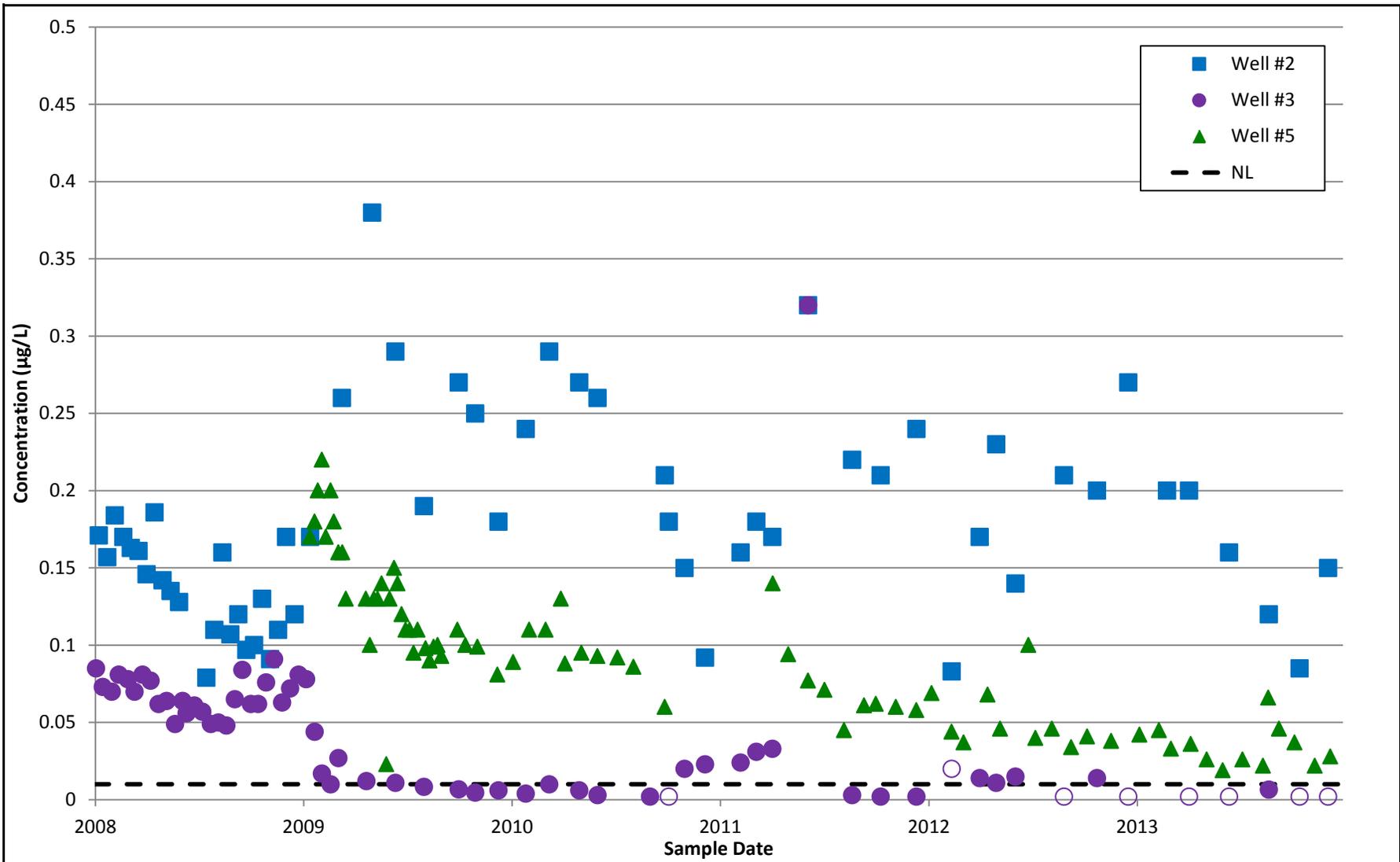
Note: Open symbols signify non-detects.



CARBON TETRACHLORIDE CONCENTRATIONS, RAW WATER  
 LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-12**



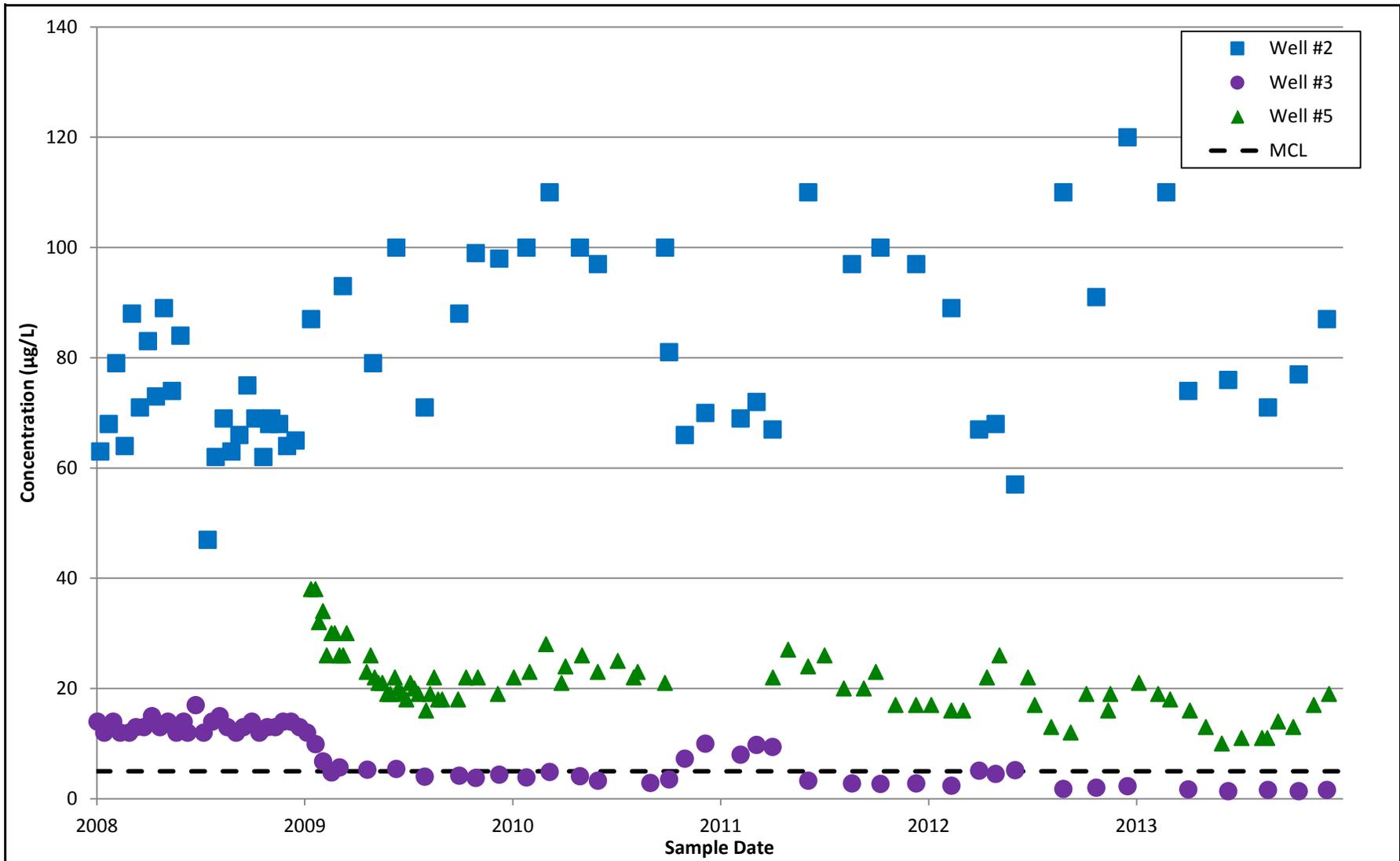
Note: Open symbols signify non-detects.



N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW WATER  
 LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-13**



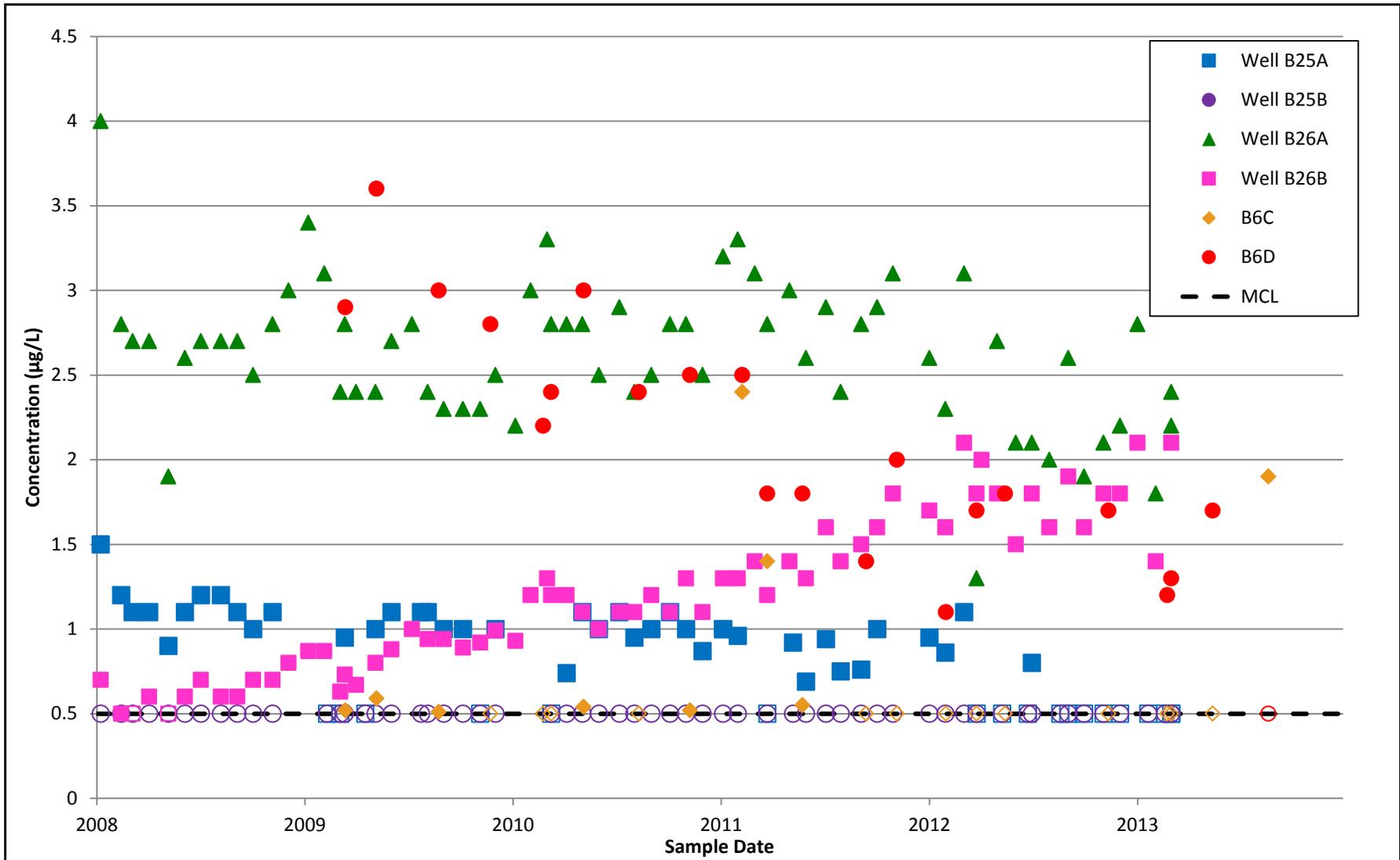
Note: Open symbols signify non-detects.



TRICHLOROETHENE CONCENTRATIONS, RAW WATER  
 LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-14**



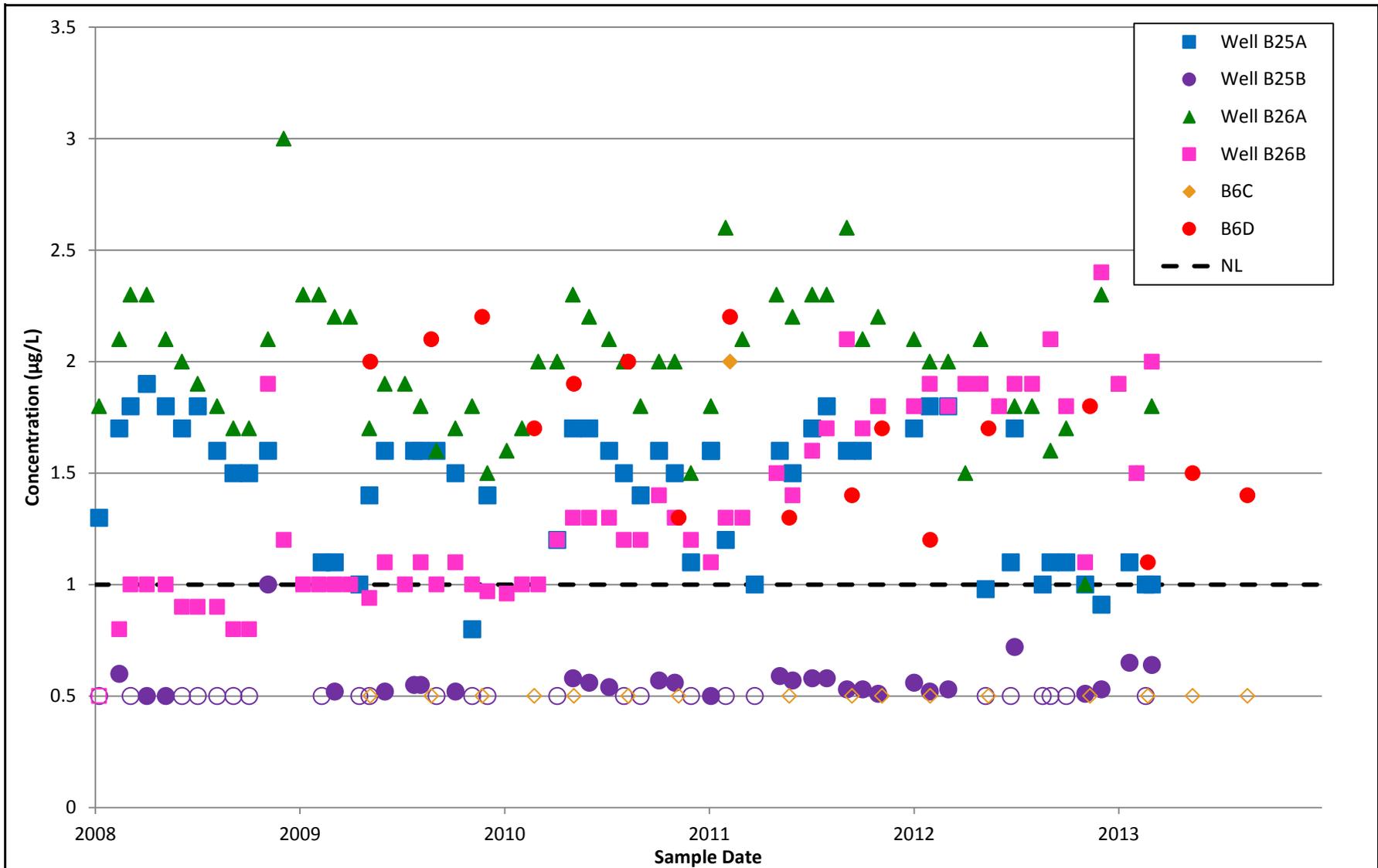
Note: Open symbols signify non-detects.



1,2-DCA CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-15**



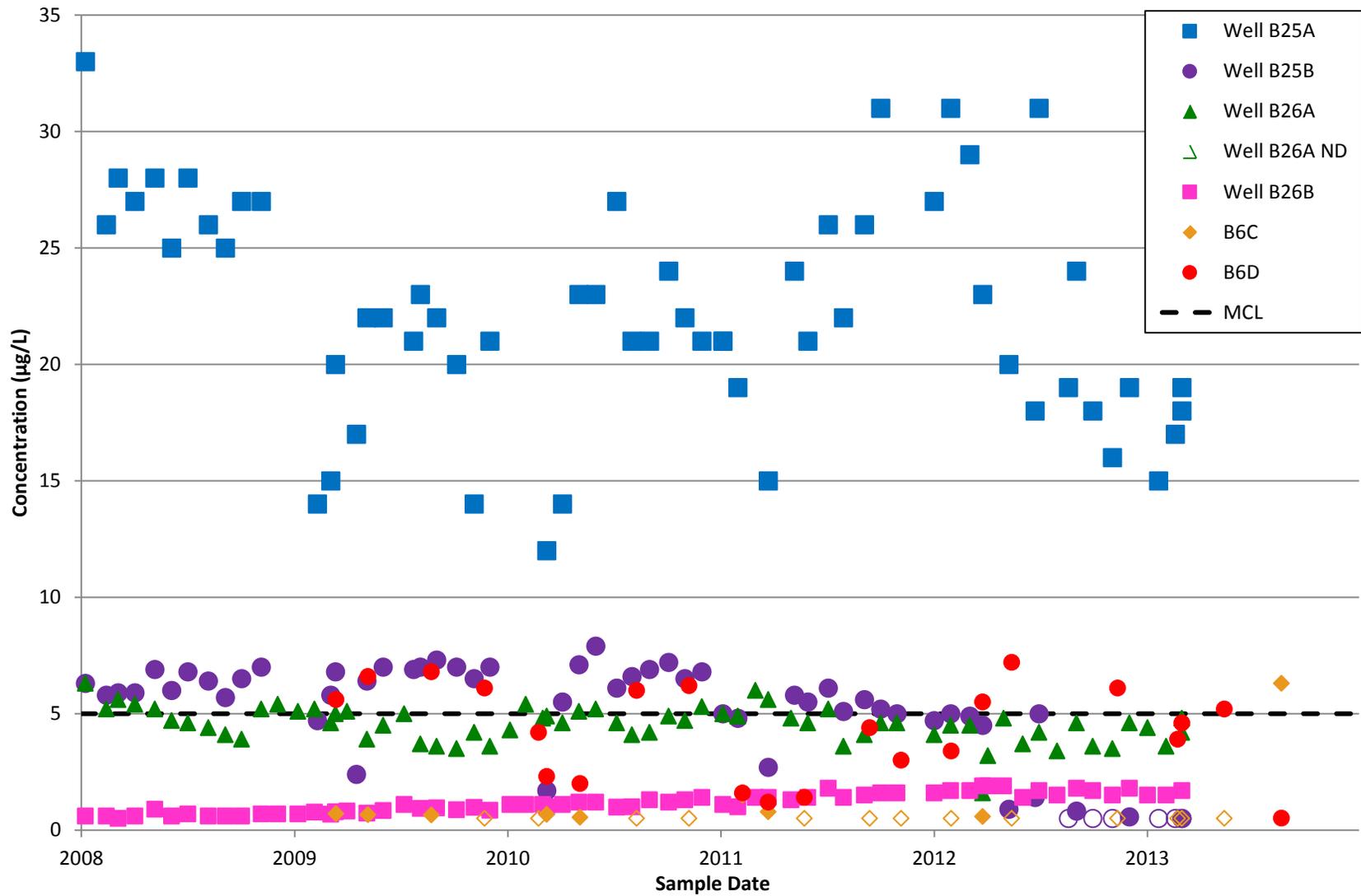
Note: Open symbols signify non-detects.



1,4-DIOXANE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-16**



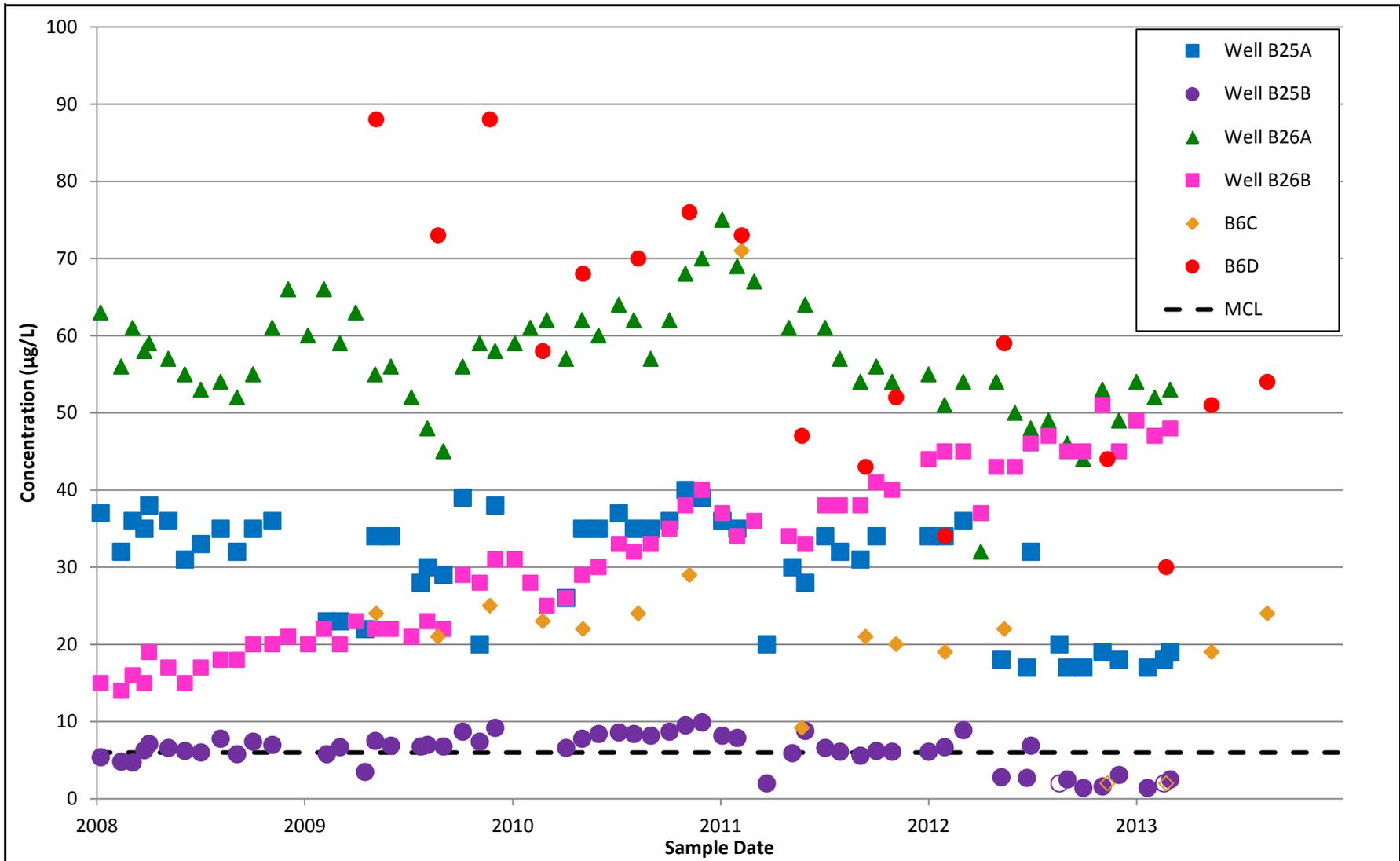
Note: Open symbols signify non-detects.



TETRACHLOROETHENE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-17**



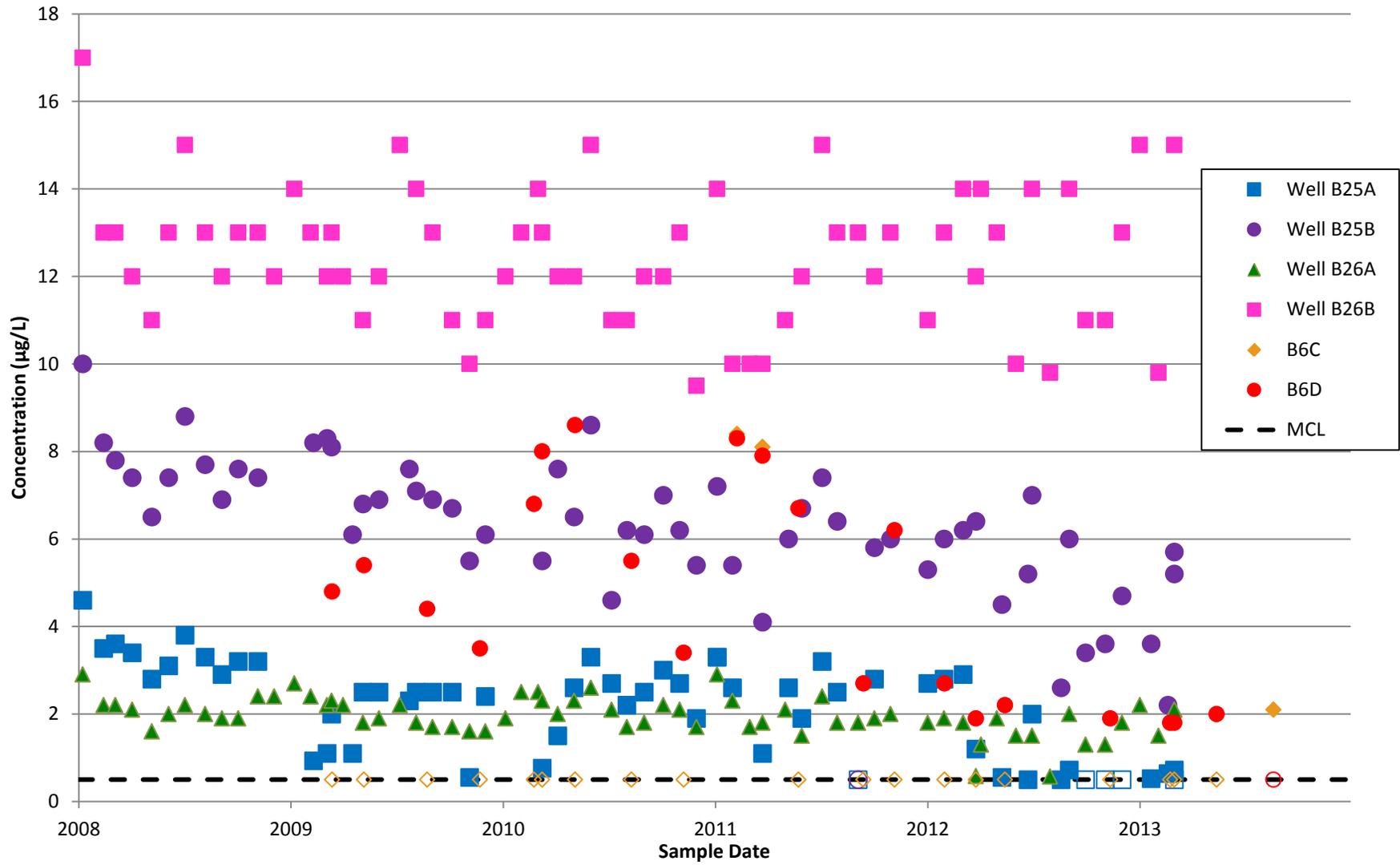
Note: Open symbols signify non-detects.



PERCHLORATE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-18**



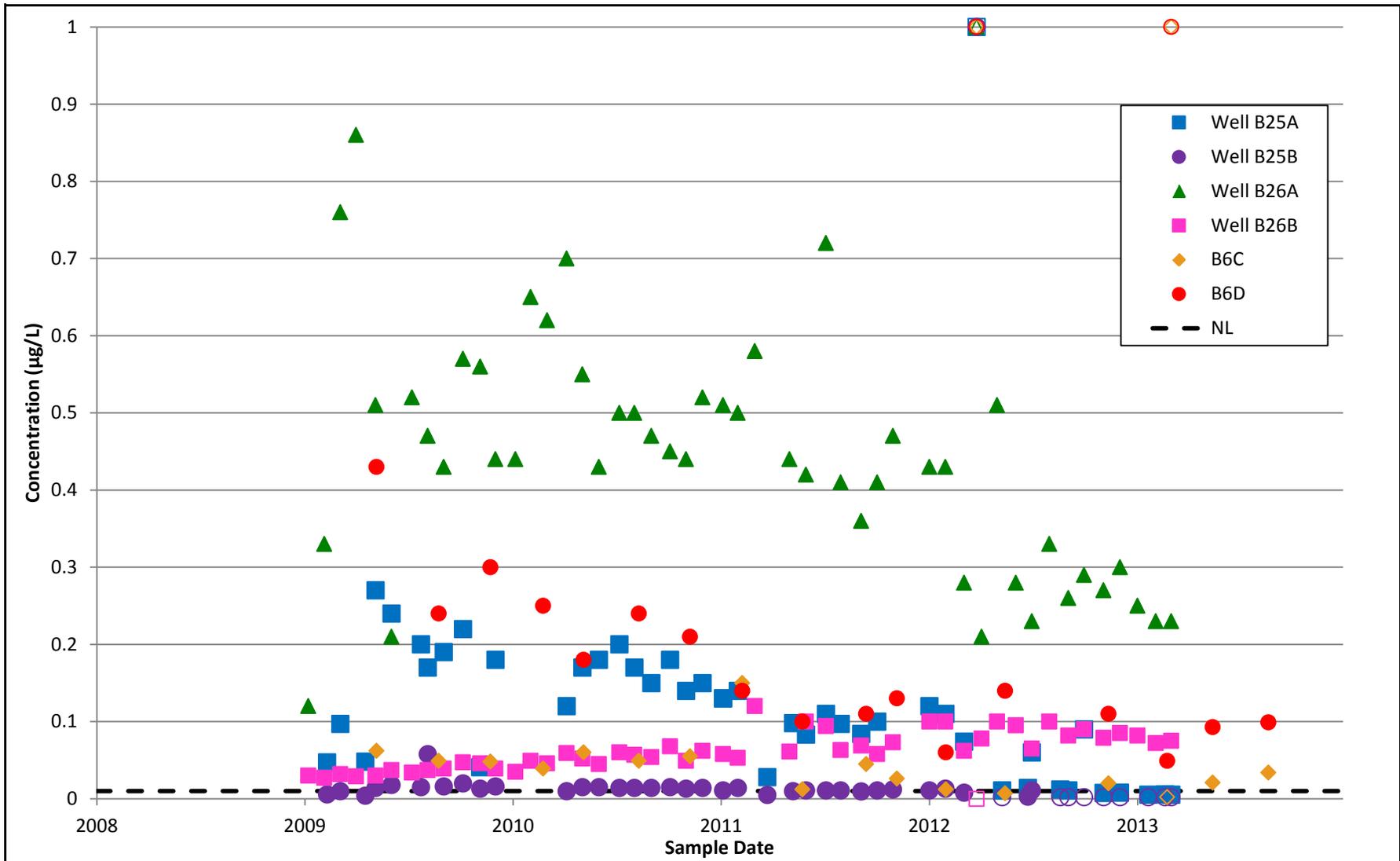
Note: Open symbols signify non-detects.



CARBON TETRACHLORIDE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-19**



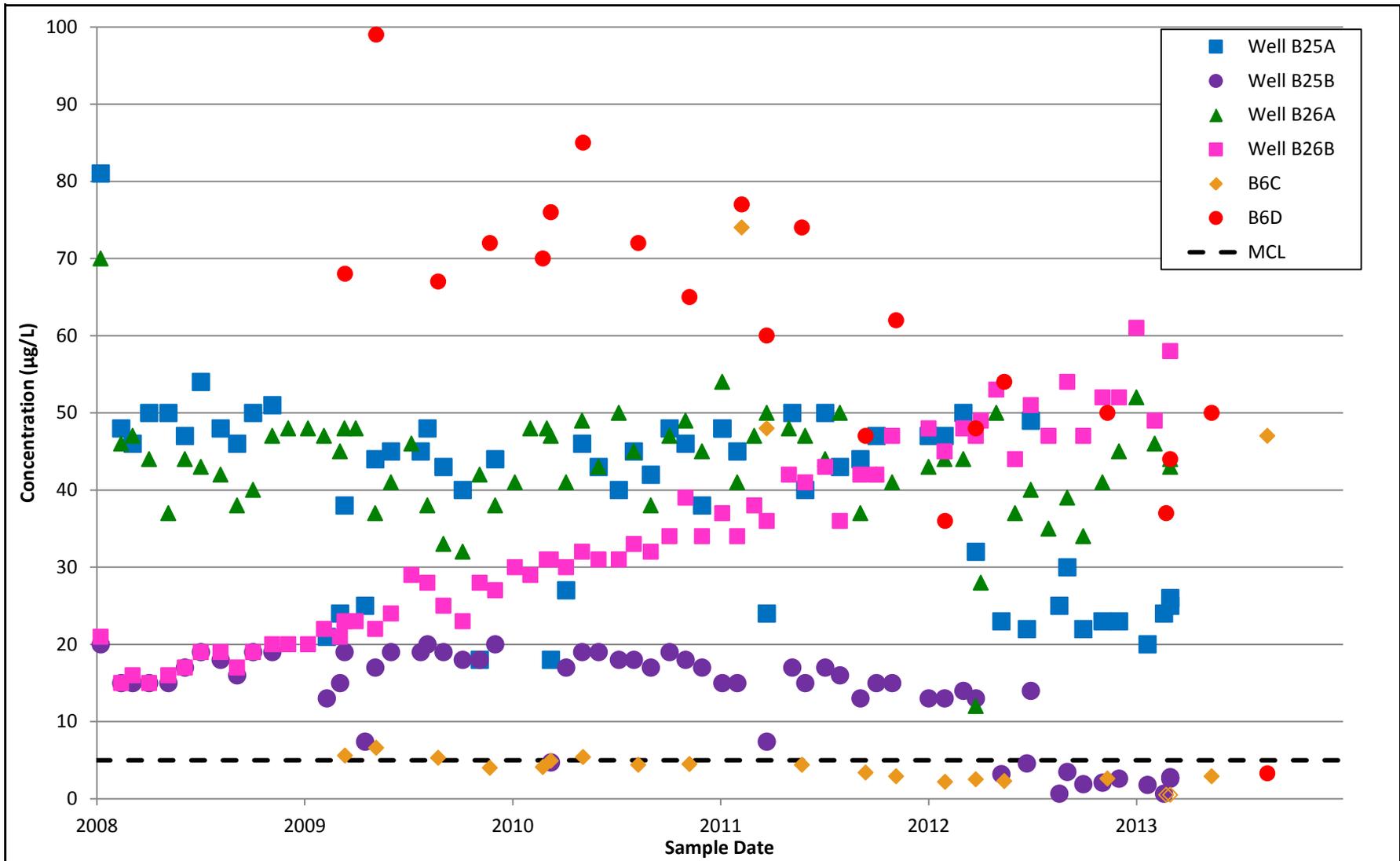
Note: Open symbols signify non-detects.



N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-20**



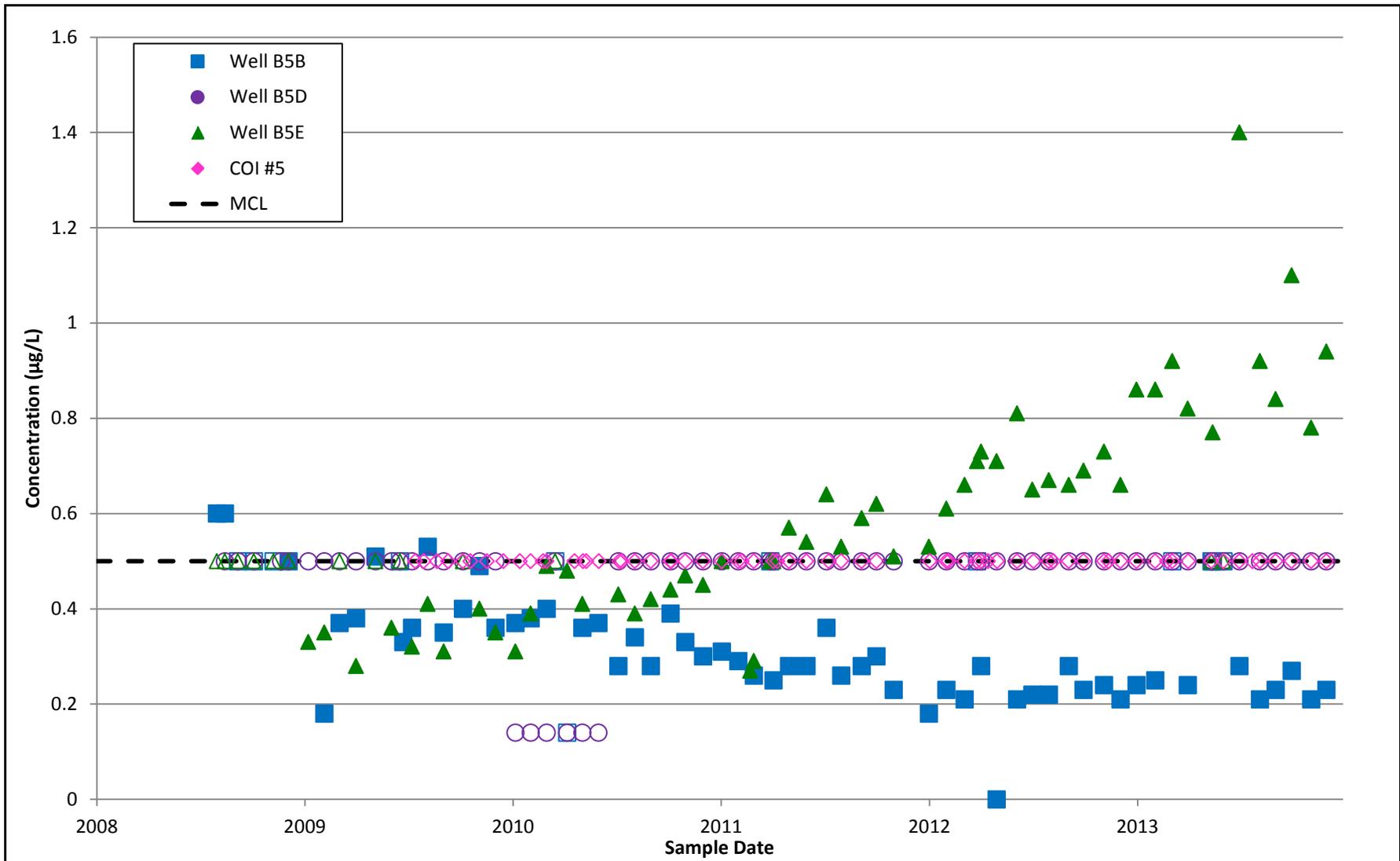
Note: Open symbols signify non-detects.



TRICHLOROETHENE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B6 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-21**



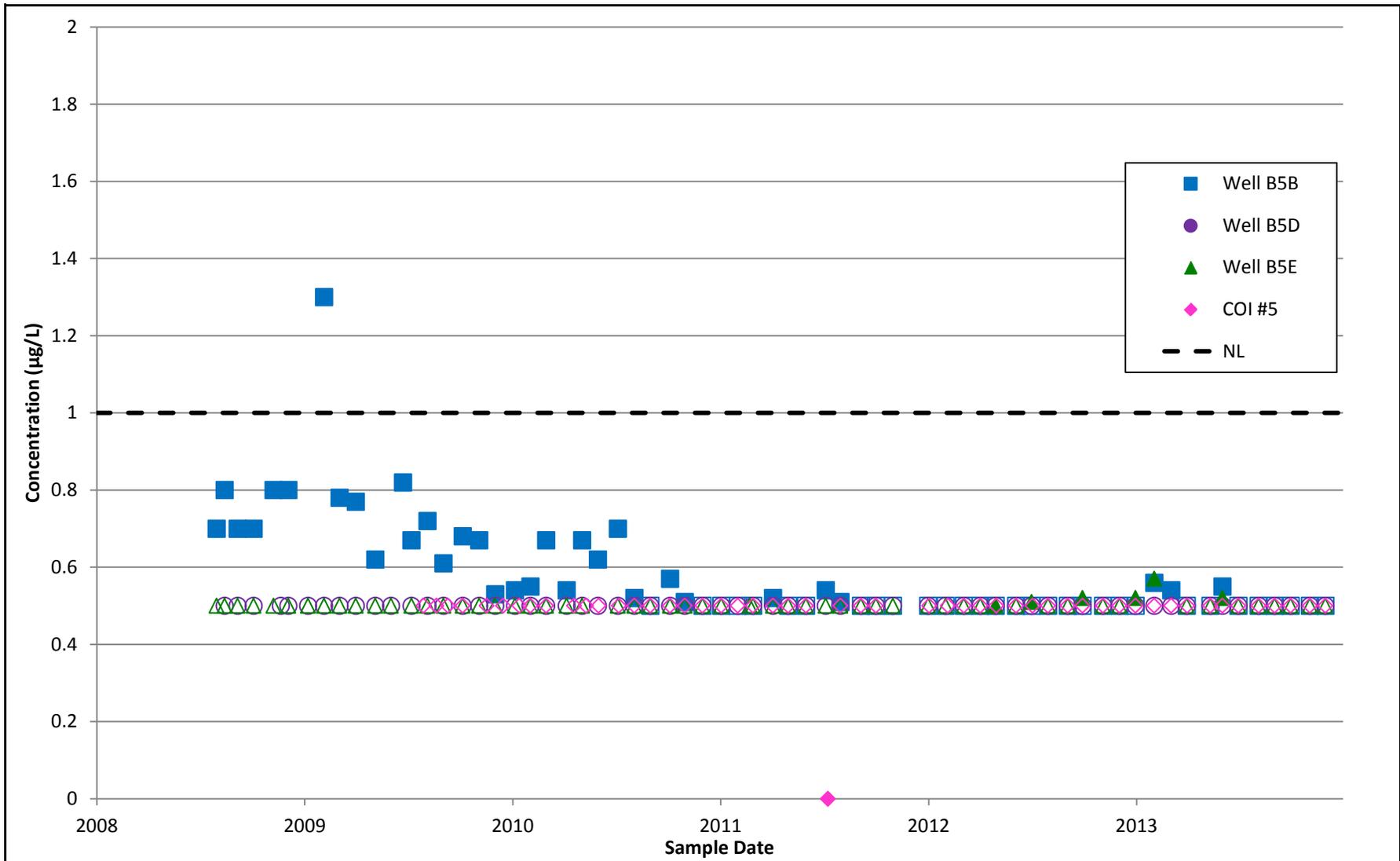
Note: Open symbols signify non-detects.



1,2-DCA CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

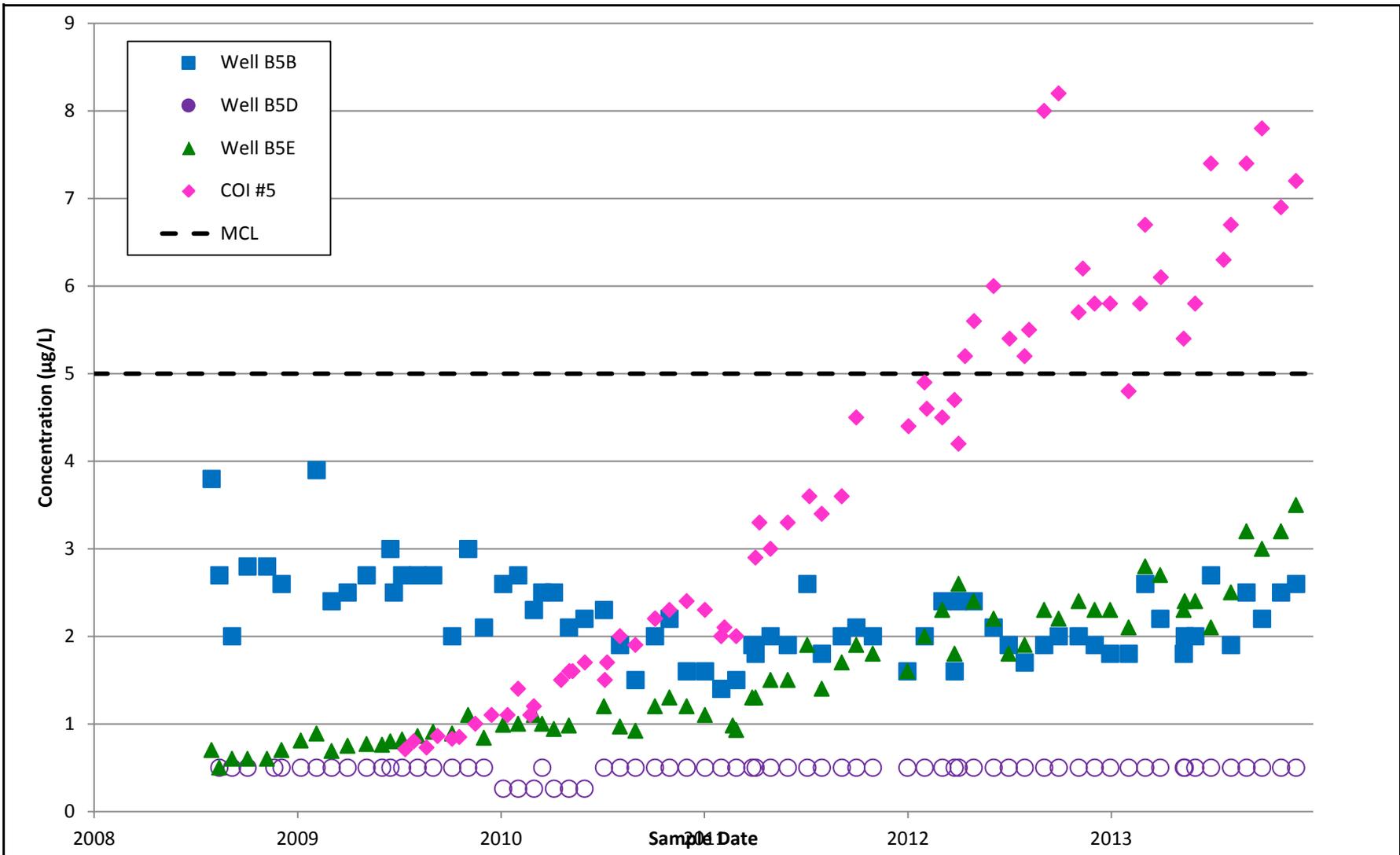
Project No.

Figure  
**B-22**



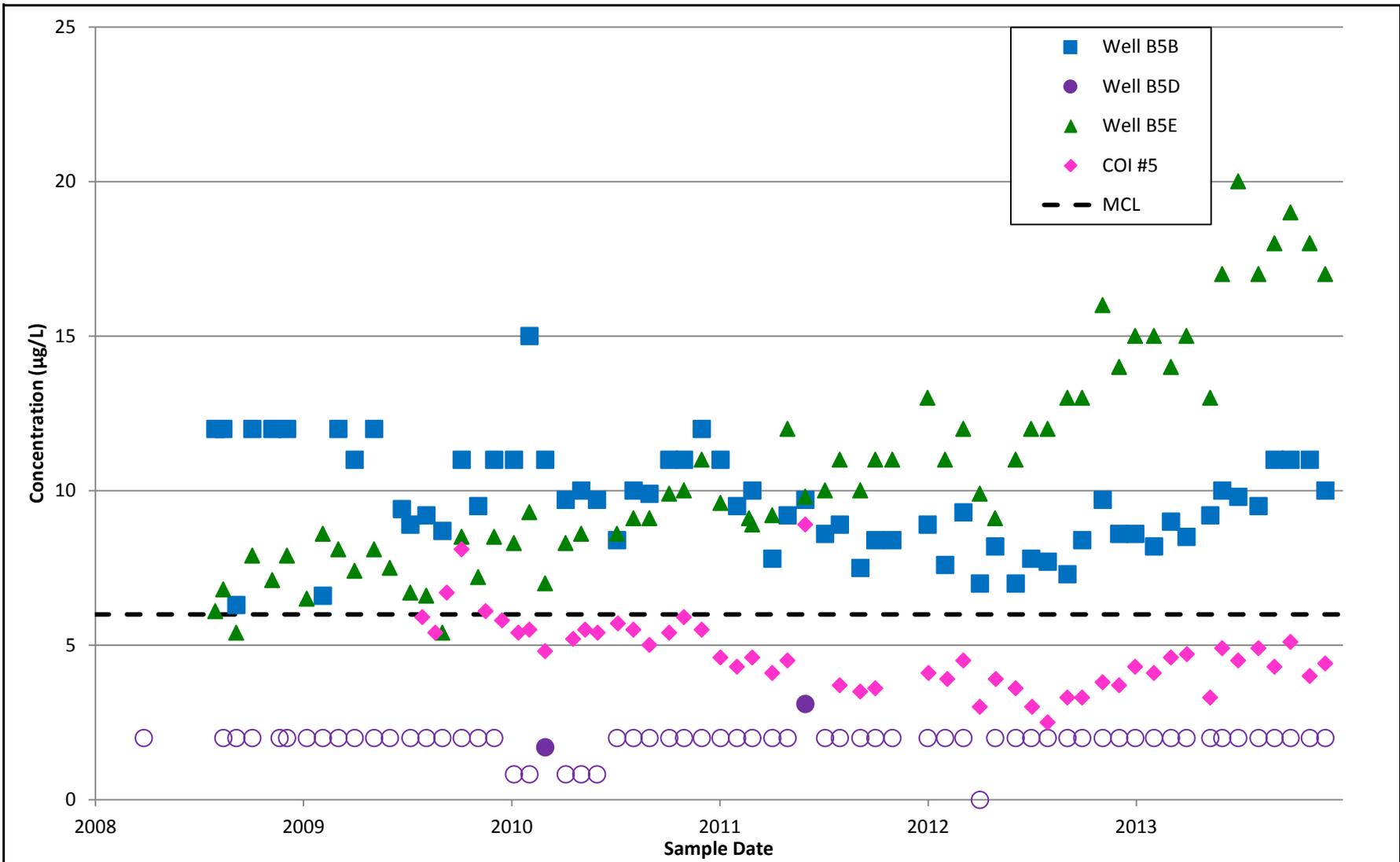
Note: Open symbols signify non-detects.

	<p>1,4-DIOXANE CONCENTRATIONS, RAW WATER          SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)          Baldwin Park Operable Unit          San Gabriel Valley, California</p>	Project No.
		Figure <b>B-23</b>



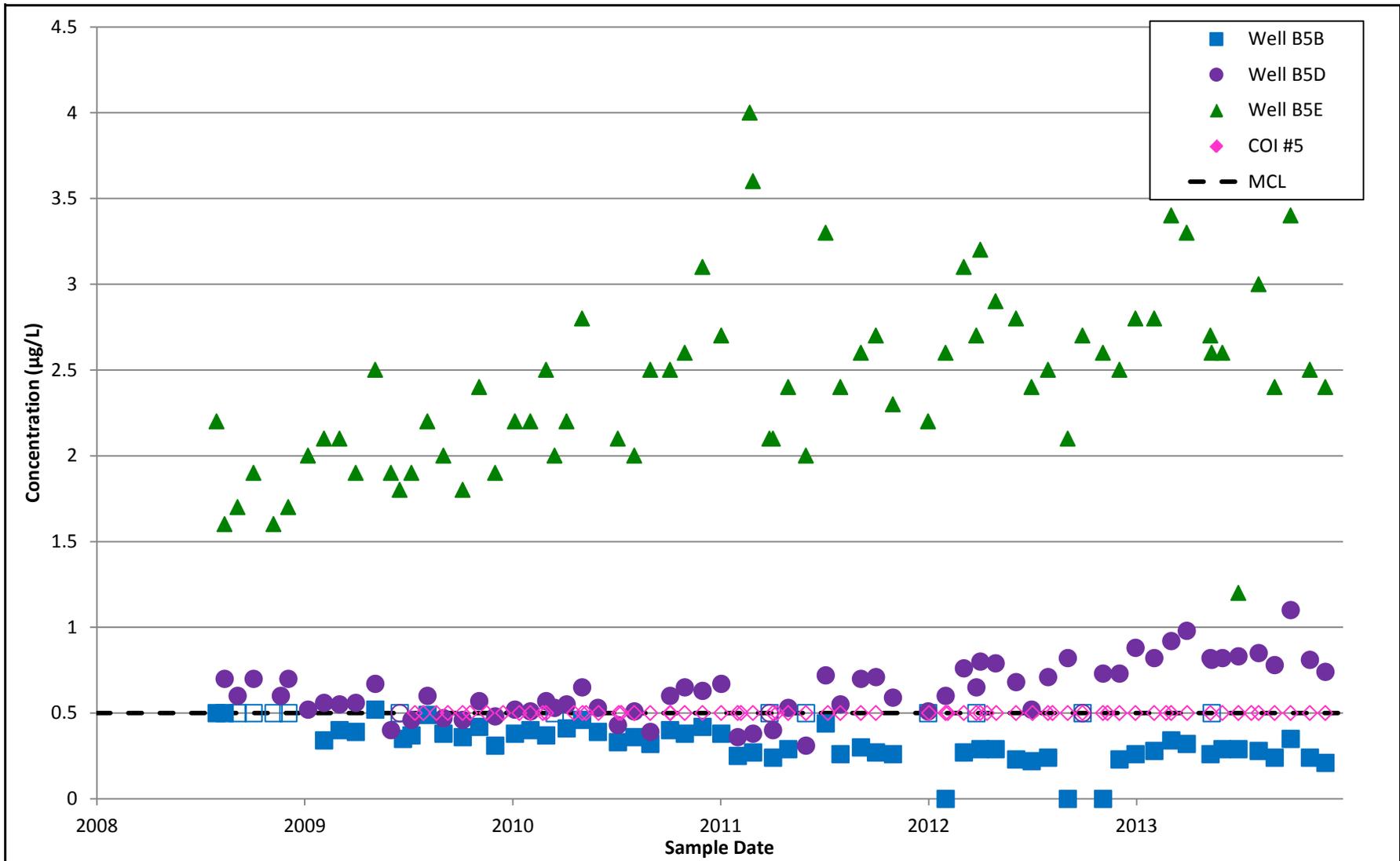
Note: Open symbols signify non-detects.

	<p>TETRACHLOROETHENE CONCENTRATIONS, RAW WATER  SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  Baldwin Park Operable Unit  San Gabriel Valley, California</p>	<p>Project No.</p>
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Note: Open symbols signify non-detects.

	<p>PERCHLORATE CONCENTRATIONS, RAW WATER  SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  Baldwin Park Operable Unit  San Gabriel Valley, California</p>	Project No.
		Figure <b>B-25</b>



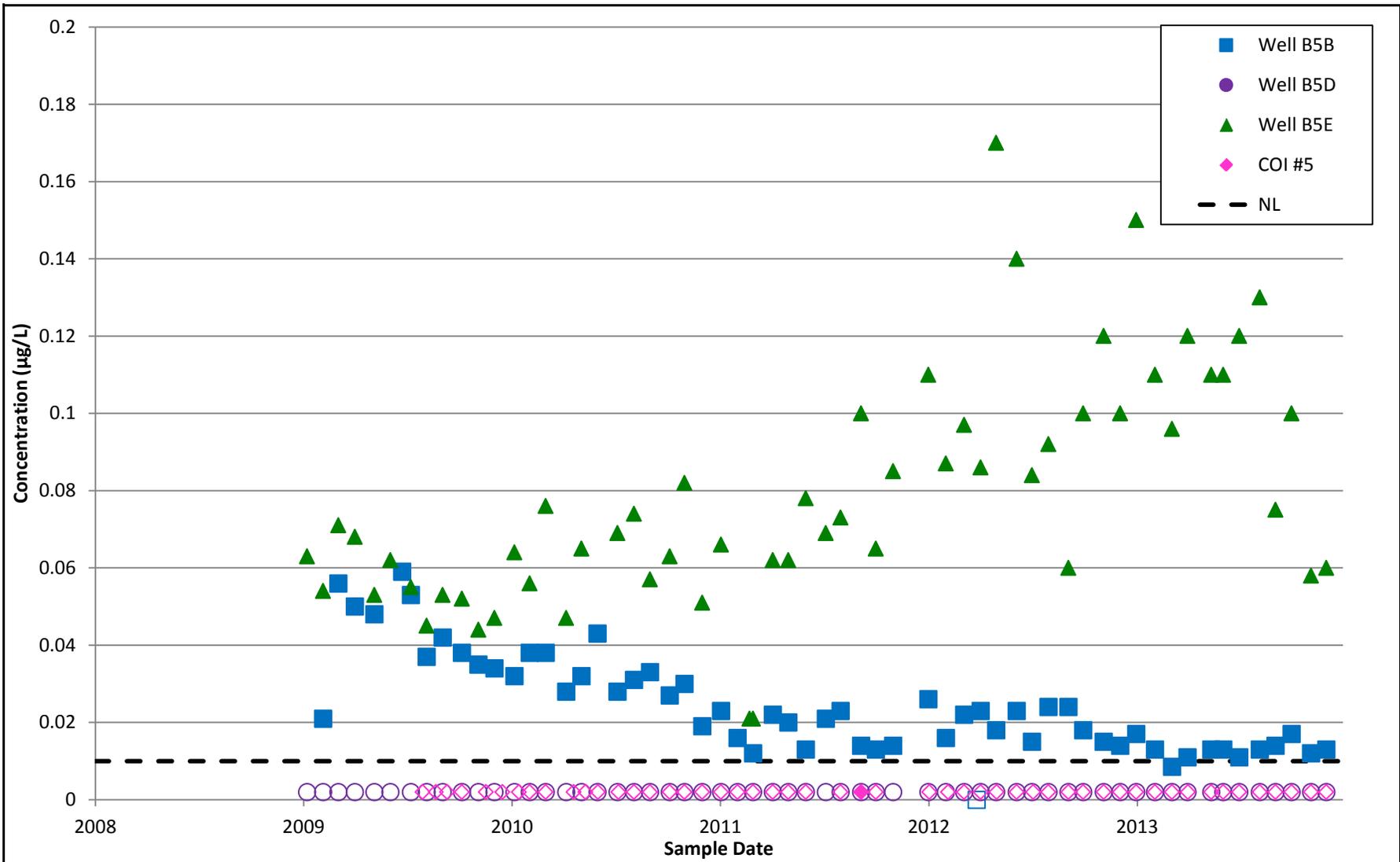
Note: Open symbols signify non-detects.



CARBON TETRACHLORIDE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-26**



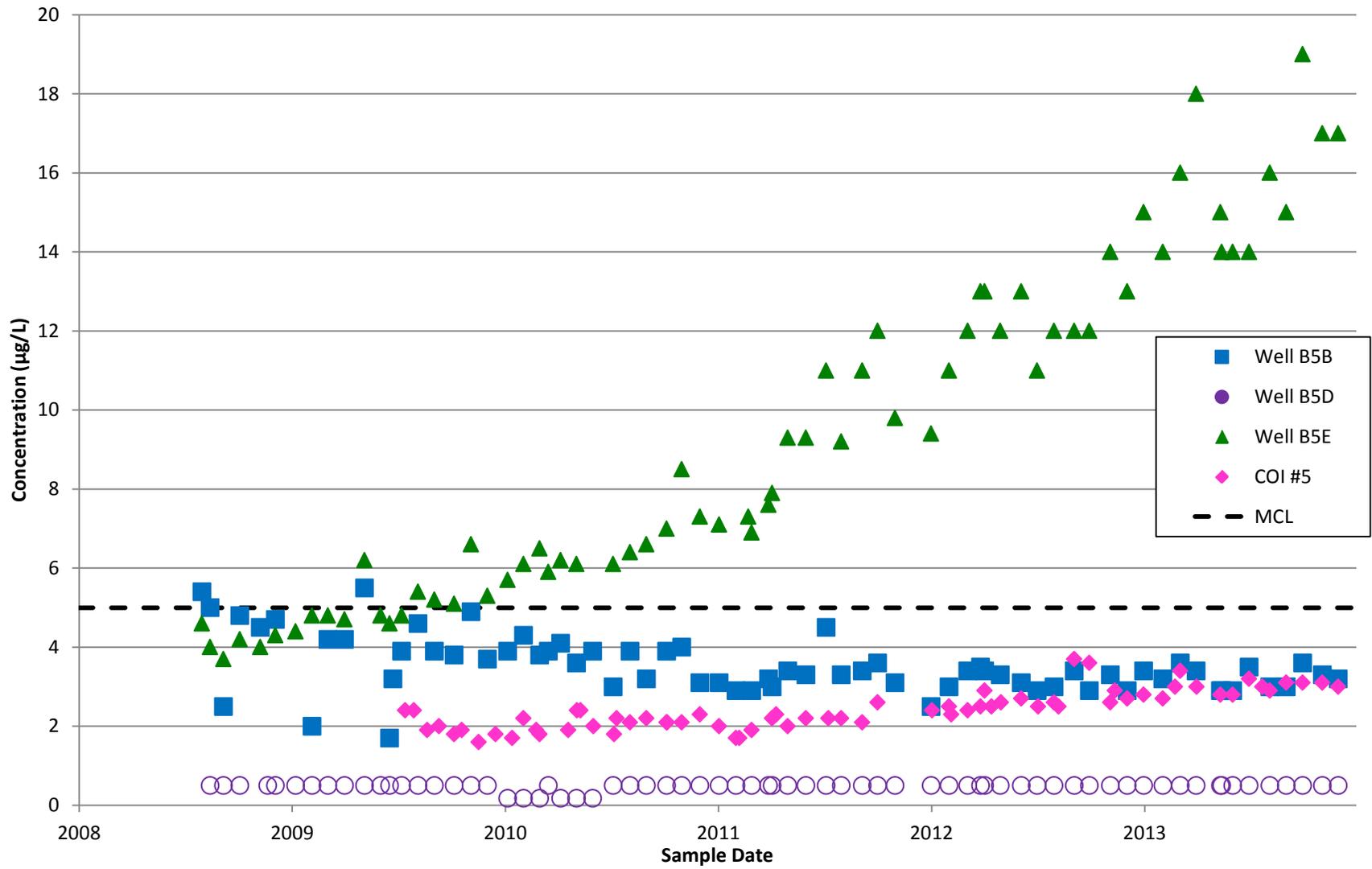
Note: Open symbols signify non-detects.



N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-27**



Note: Open symbols signify non-detects.



TRICHLOROETHENE CONCENTRATIONS, RAW WATER  
 SAN GABRIEL VALLEY WATER COMPANY PLANT B5 (2008 - 2013)  
 Baldwin Park Operable Unit  
 San Gabriel Valley, California

Project No.

Figure  
**B-28**