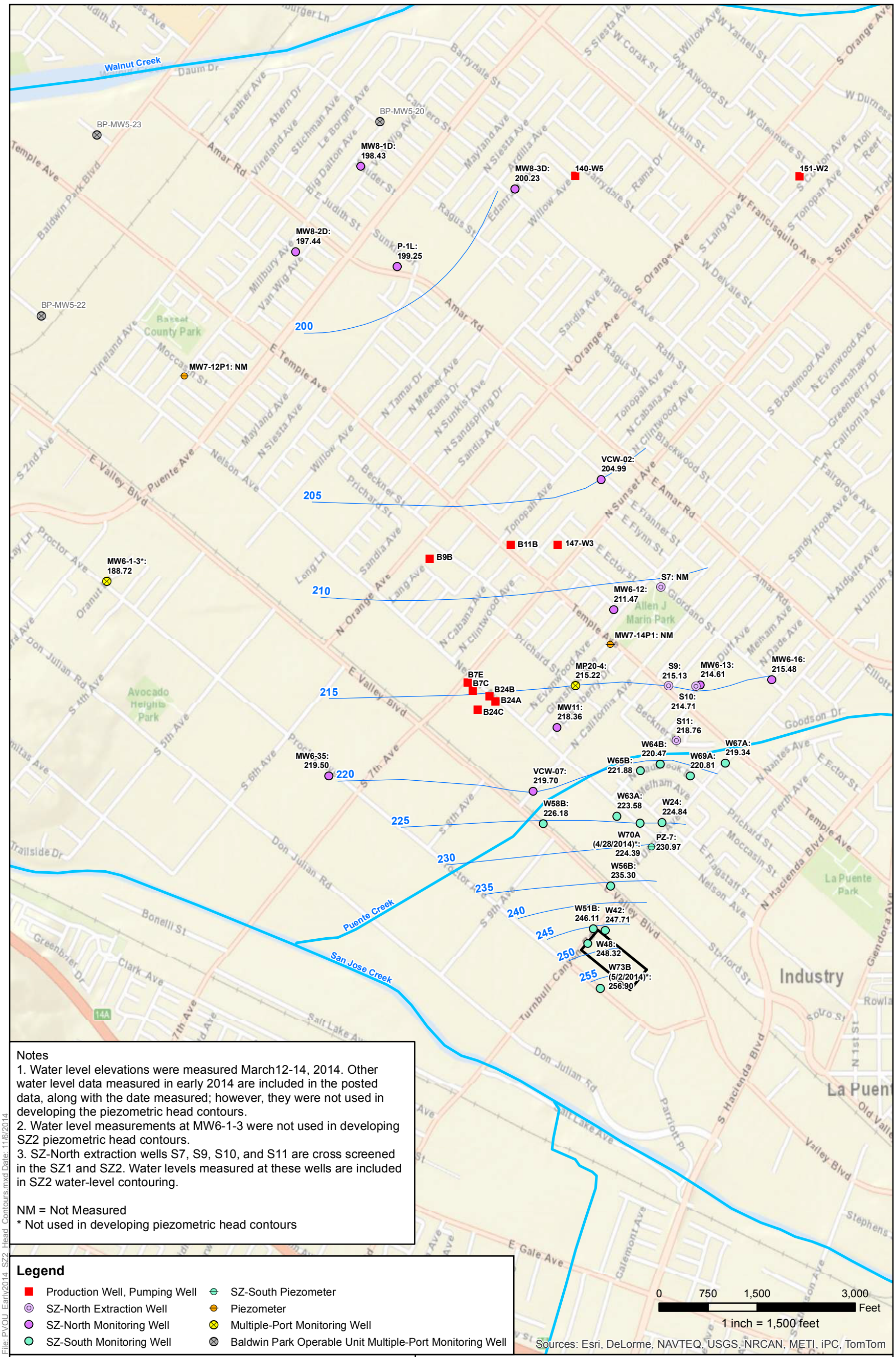


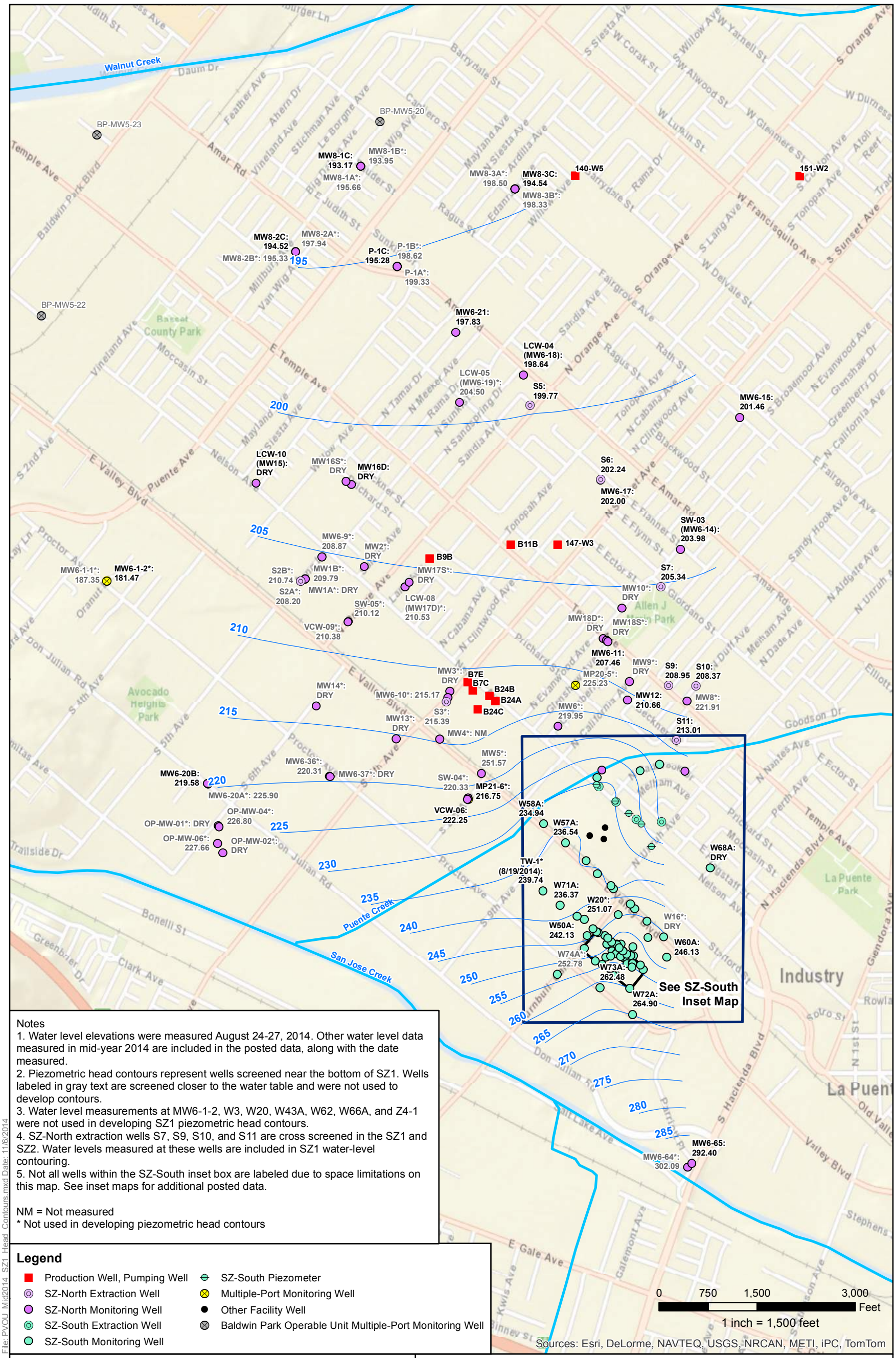
File: PVOU_Early2014_SZ2_Head_Contours.mxd Date: 11/6/2014

CDM Smith

Figure 7
Piezometric Head Contours
Shallow Zone (SZ2)
Early 2014 Semi-Annual Monitoring Event

Puente Valley Operable Unit

11/6/2014



Notes
1. Water level elevations were measured August 24-27, 2014. Other water level data measured in mid-year 2014 are included in the posted data, along with the date measured.
2. Piezometric head contours represent wells screened near the bottom of SZ1. Wells labeled in gray text are screened closer to the water table and were not used to develop contours.
3. Water level measurements at MW6-1-2, W3, W20, W43A, W62, W66A, and Z4-1 were not used in developing SZ1 piezometric head contours.
4. SZ-North extraction wells S7, S9, S10, and S11 are cross screened in the SZ1 and SZ2. Water levels measured at these wells are included in SZ1 water-level contouring.
5. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional posted data.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

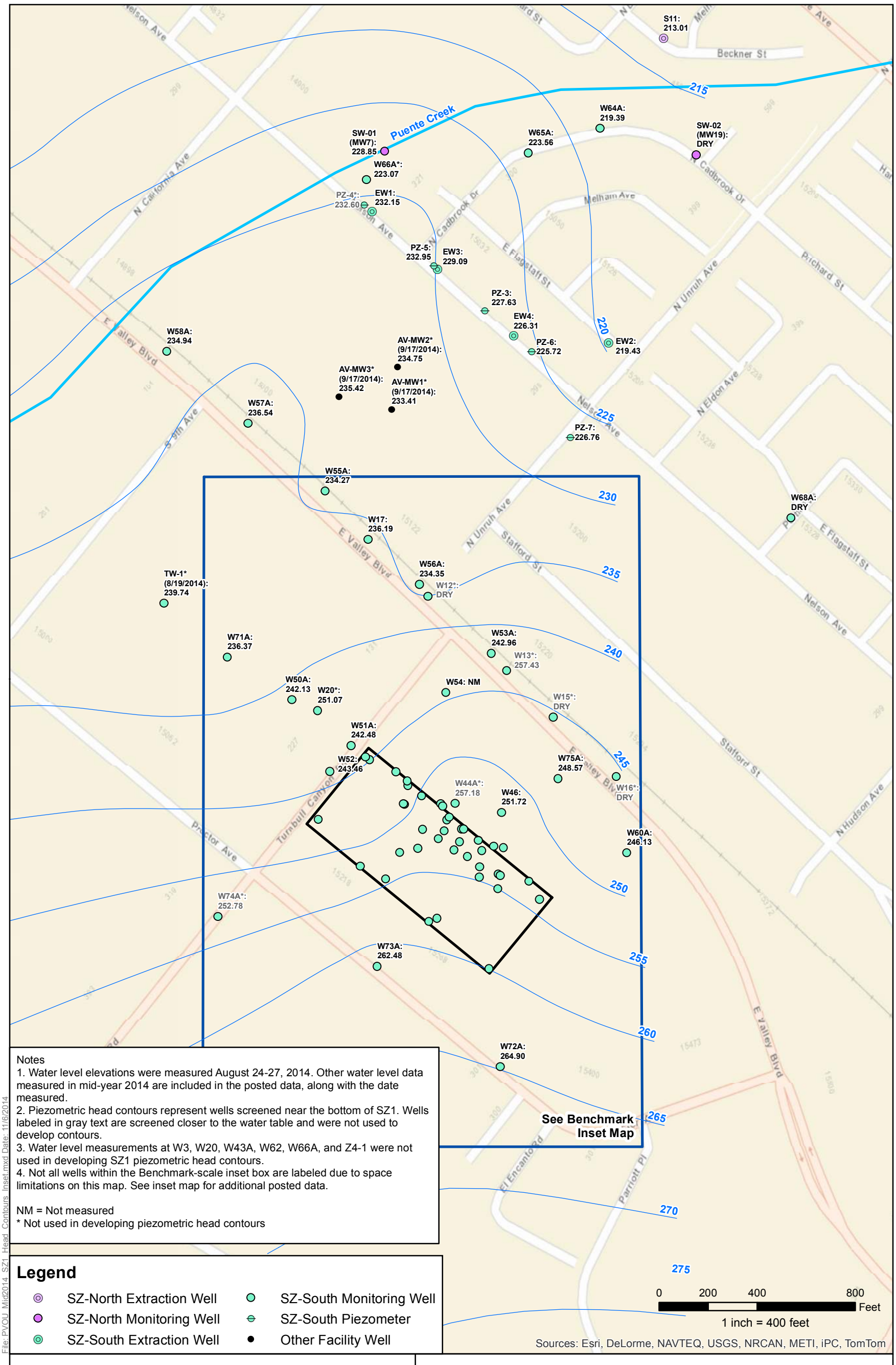
Figure 8-1
Piezometric Head Contours
Shallow Zone (SZ1)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N

File: PVOU_Mid2014_SZ1_Head_Contours.mxd Date: 11/6/2014



Notes
1. Water level elevations were measured August 24-27, 2014. Other water level data measured in mid-year 2014 are included in the posted data, along with the date measured.
2. Piezometric head contours represent wells screened near the bottom of SZ1. Wells labeled in gray text are screened closer to the water table and were not used to develop contours.
3. Water level measurements at W3, W20, W43A, W62, W66A, and Z4-1 were not used in developing SZ1 piezometric head contours.
4. Not all wells within the Benchmark-scale inset box are labeled due to space limitations on this map. See inset map for additional posted data.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well

SZ1 Piezometric Head Contours (ft NAVD 88)
Puente Creek
Former TRW Benchmark Technology Facility

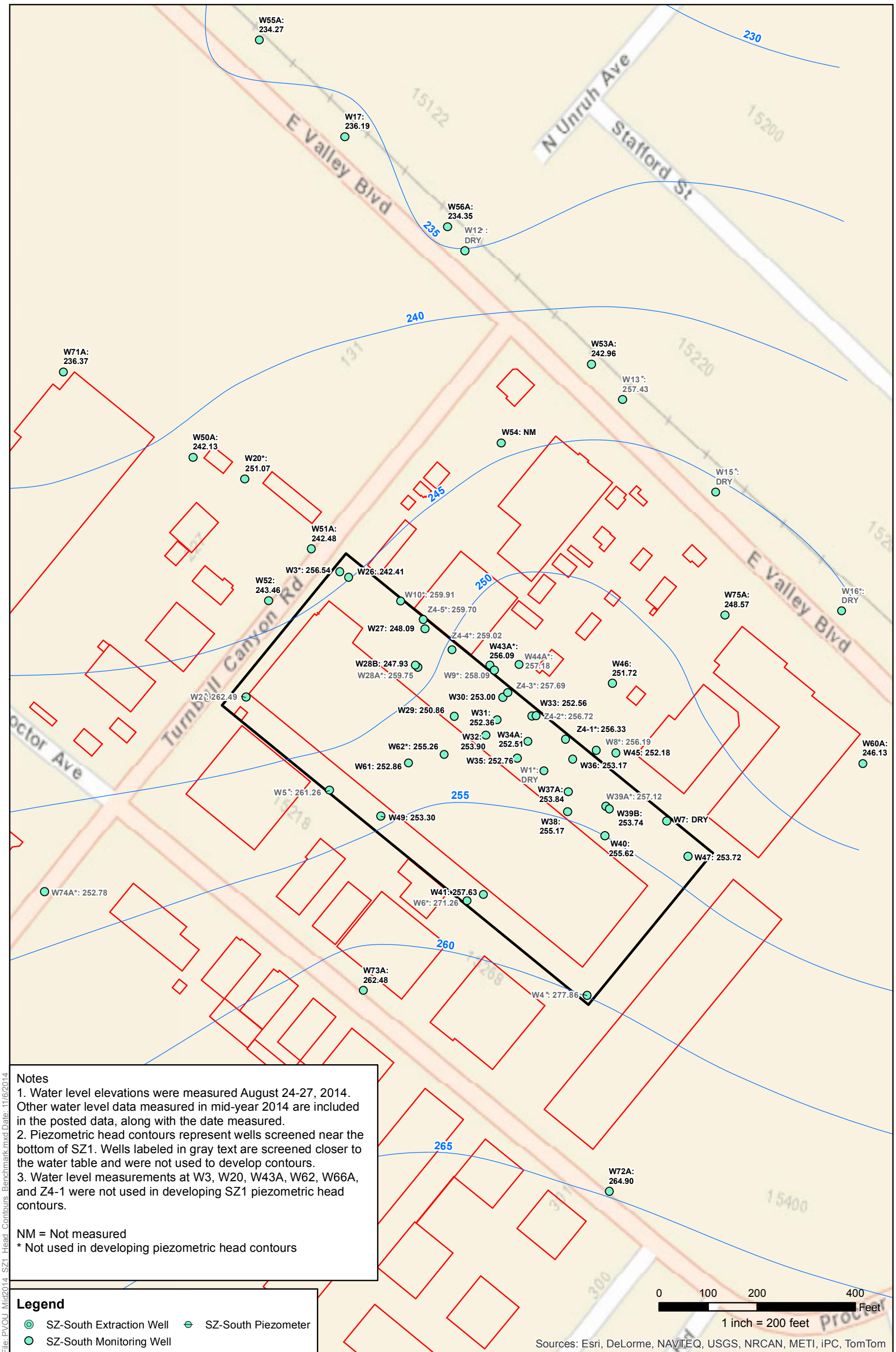
CDM Smith

Figure 8-2
Piezometric Head Contours
Shallow Zone (SZ1) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit
11/6/2014

N

File: PVOU_Mid2014_SZ1_Head_Contours_Inset.mxd Date: 11/6/2014



Notes
1. Water level elevations were measured August 24-27, 2014. Other water level data measured in mid-year 2014 are included in the posted data, along with the date measured.
2. Piezometric head contours represent wells screened near the bottom of SZ1. Wells labeled in gray text are screened closer to the water table and were not used to develop contours.
3. Water level measurements at W3, W20, W43A, W62, W66A, and Z4-1 were not used in developing SZ1 piezometric head contours.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- SZ-South Extraction Well
- SZ-South Piezometer
- SZ-South Monitoring Well
- SZ1 Piezometric Head Contours (ft NAVD 88) Dashed lines are approximate
- Former TRW Benchmark Technology Facility
- Building Outline

CDM Smith

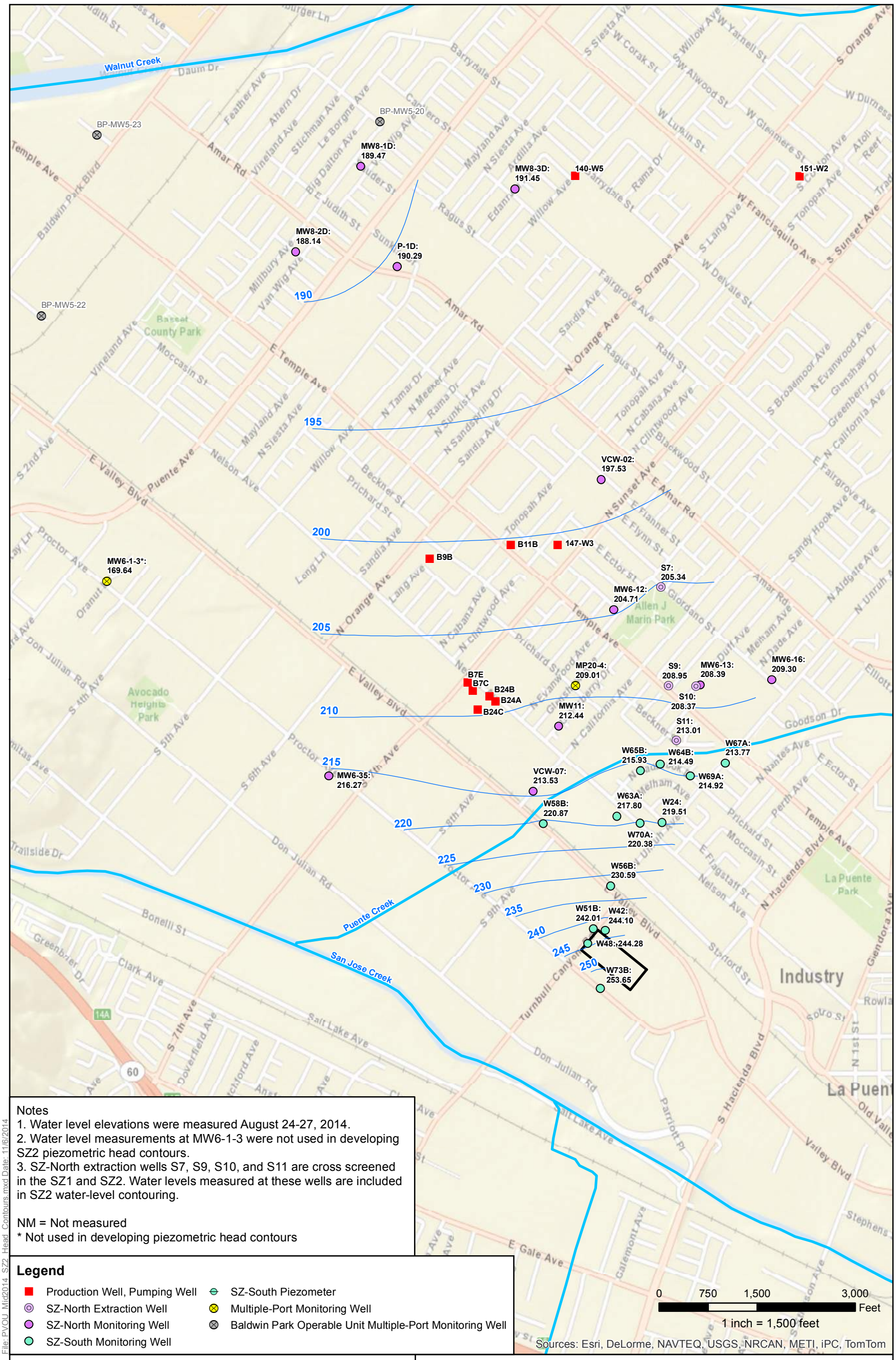
Figure 8-3
Piezometric Head Contours
Shallow Zone (SZ1) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N

File: PVOU_Mid2014_SZ1_Head_Contours_Benchmark.mxd Date: 11/6/2014



Notes
1. Water level elevations were measured August 24-27, 2014.
2. Water level measurements at MW6-1-3 were not used in developing SZ2 piezometric head contours.
3. SZ-North extraction wells S7, S9, S10, and S11 are cross screened in the SZ1 and SZ2. Water levels measured at these wells are included in SZ2 water-level contouring.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- SZ2 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

File: PVOU_Mid2014_SZ2_Head_Contours.mxd Date: 11/6/2014

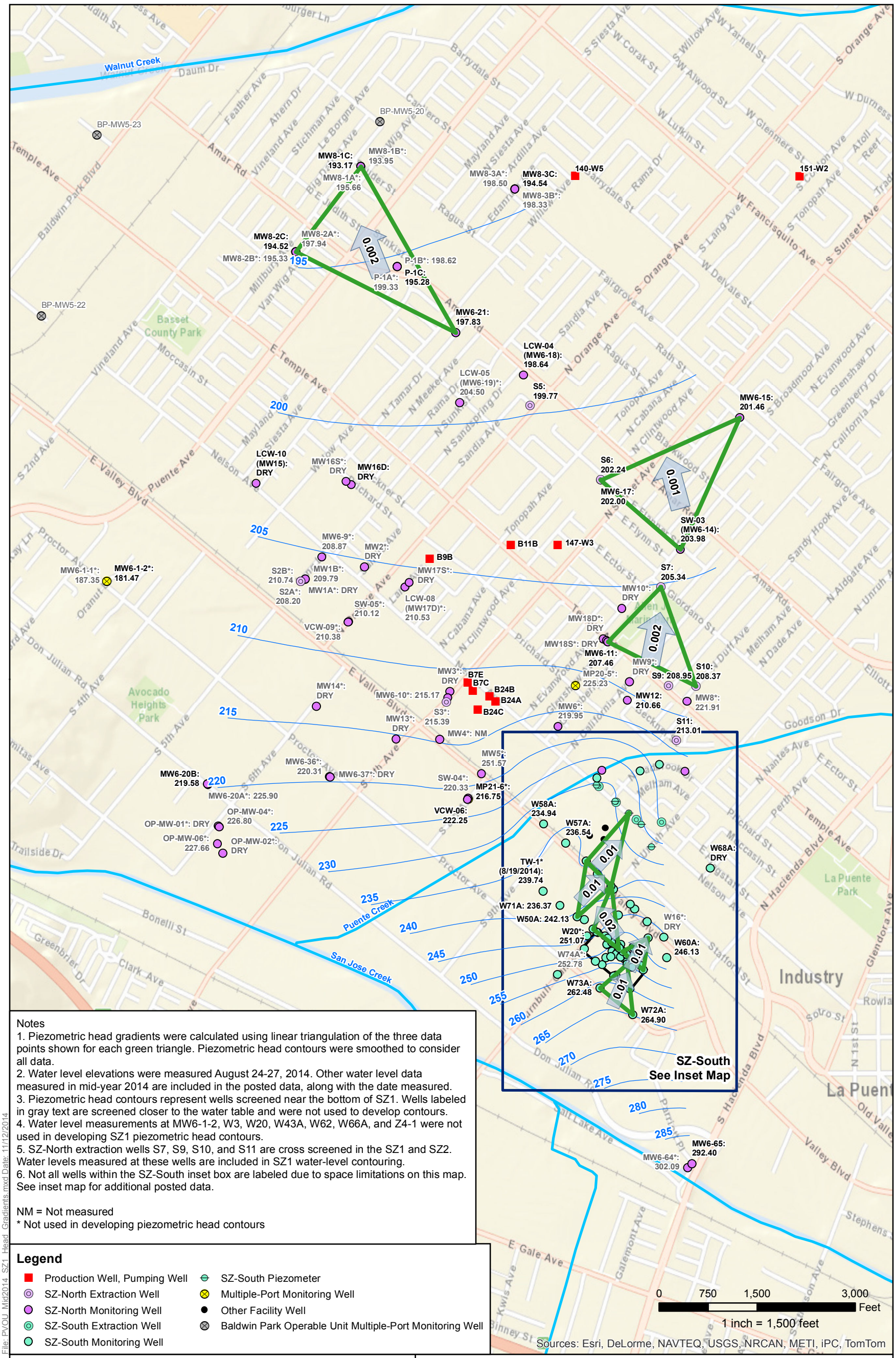
CDM Smith

Figure 8-4
Piezometric Head Contours
Shallow Zone (SZ2)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014. Other water level data measured in mid-year 2014 are included in the posted data, along with the date measured.
3. Piezometric head contours represent wells screened near the bottom of SZ1. Wells labeled in gray text are screened closer to the water table and were not used to develop contours.
4. Water level measurements at MW6-1-2, W3, W20, W43A, W62, W66A, and Z4-1 were not used in developing SZ1 piezometric head contours.
5. SZ-North extraction wells S7, S9, S10, and S11 are cross screened in the SZ1 and SZ2. Water levels measured at these wells are included in SZ1 water-level contouring.
6. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset map for additional posted data.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

CDM Smith

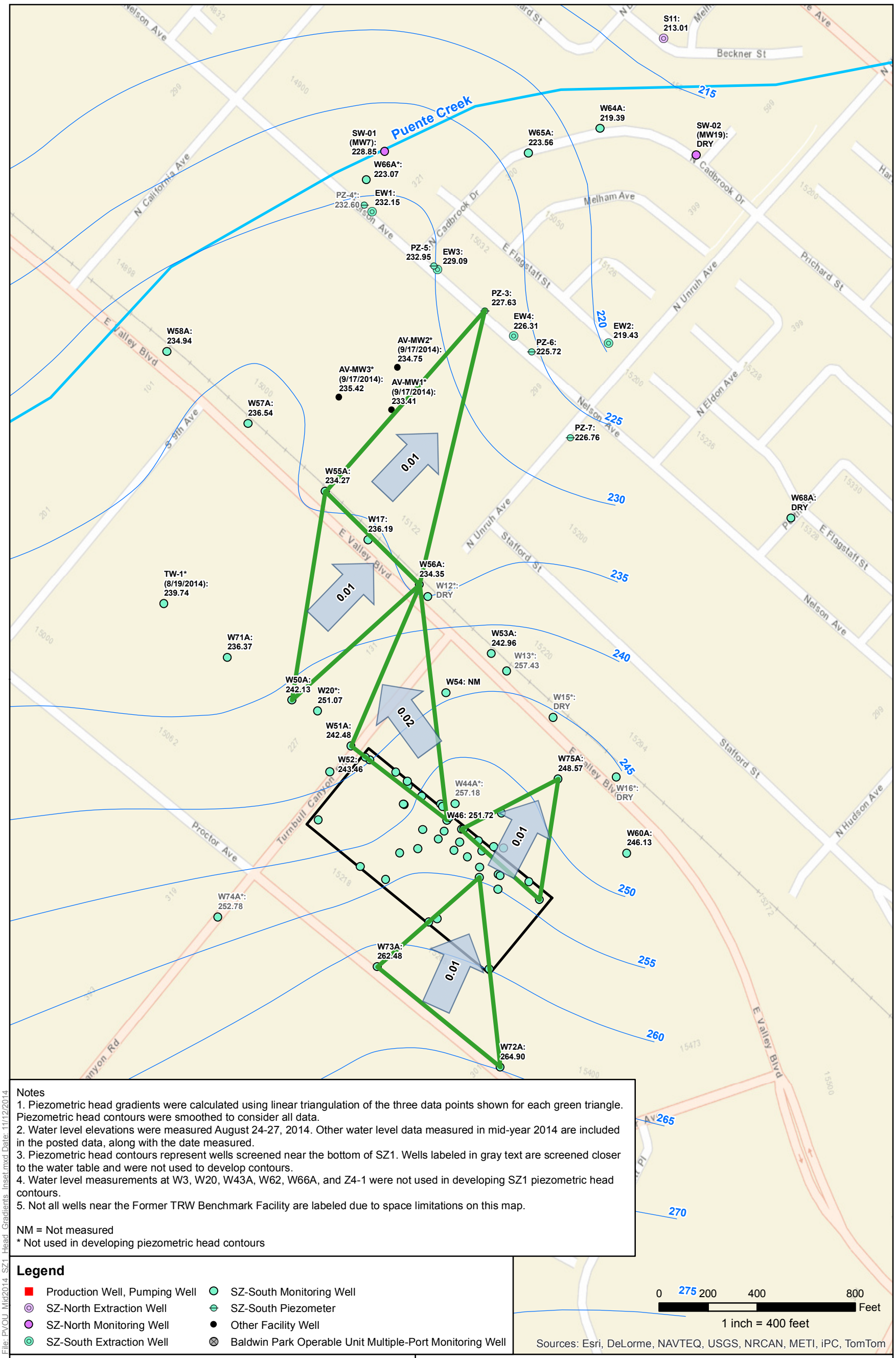
Figure 8-5
Piezometric Head Contours and Gradients Shallow Zone (SZ1) 2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/12/2014

N

File: PVOU_Mid2014_SZ1_Head_Gradients.mxd Date: 11/12/2014



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014. Other water level data measured in mid-year 2014 are included in the posted data, along with the date measured.
3. Piezometric head contours represent wells screened near the bottom of SZ1. Wells labeled in gray text are screened closer to the water table and were not used to develop contours.
4. Water level measurements at W3, W20, W43A, W62, W66A, and Z4-1 were not used in developing SZ1 piezometric head contours.
5. Not all wells near the Former TRW Benchmark Facility are labeled due to space limitations on this map.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

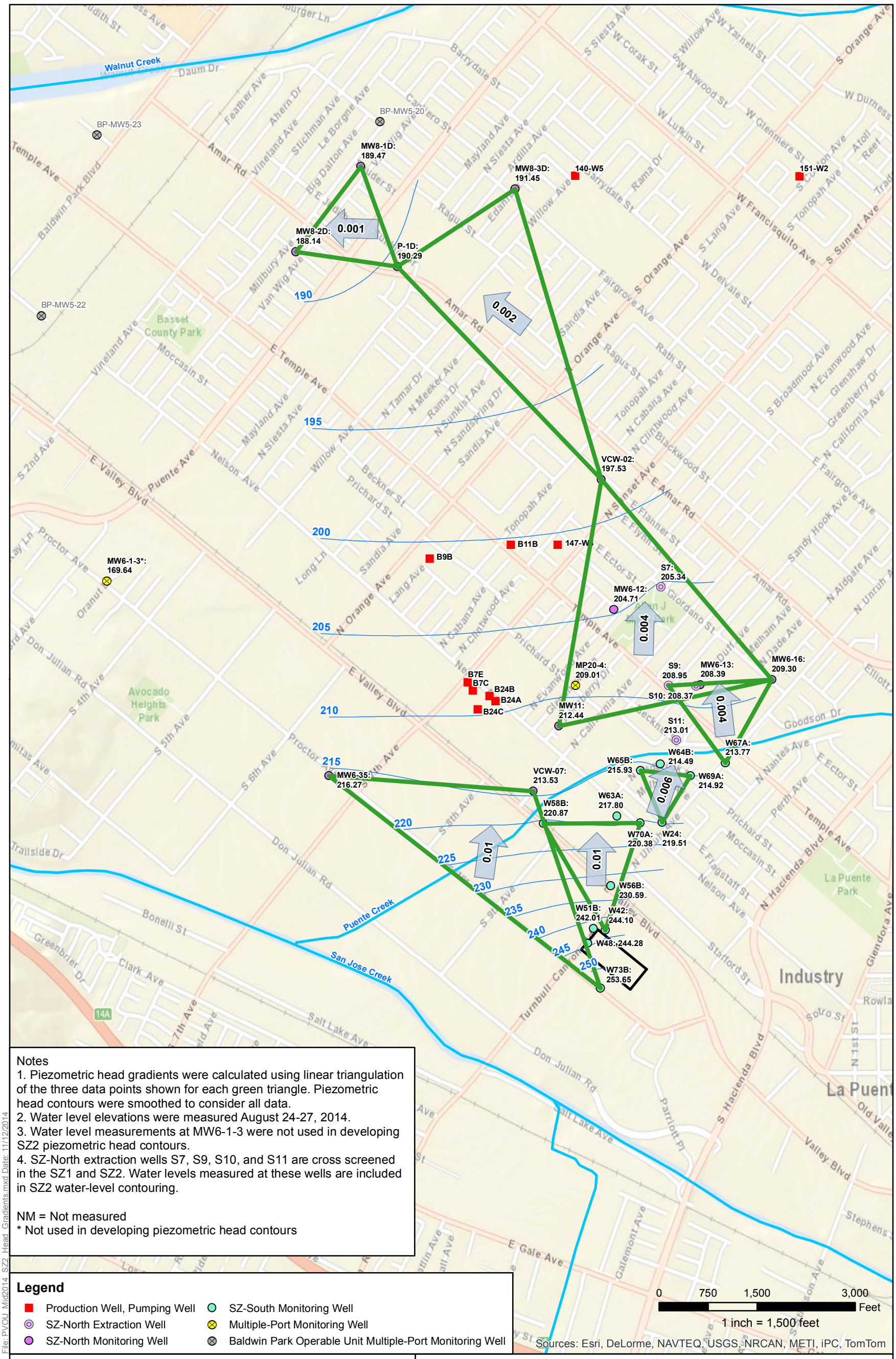
CDM Smith

Figure 8-6
Piezometric Head Contours and Gradients
Shallow Zone (SZ1) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit
11/12/2014

N

File: PVOU_Mid2014_SZ1_Head_Gradients_Inset.mxd Date: 11/12/2014



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014.
3. Water level measurements at MW6-1-3 were not used in developing SZ2 piezometric head contours.
4. SZ-North extraction wells S7, S9, S10, and S11 are cross screened in the SZ1 and SZ2. Water levels measured at these wells are included in SZ2 water-level contouring.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Monitoring Well
- Multiple-Port Monitoring Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- SZ2 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

CDM Smith

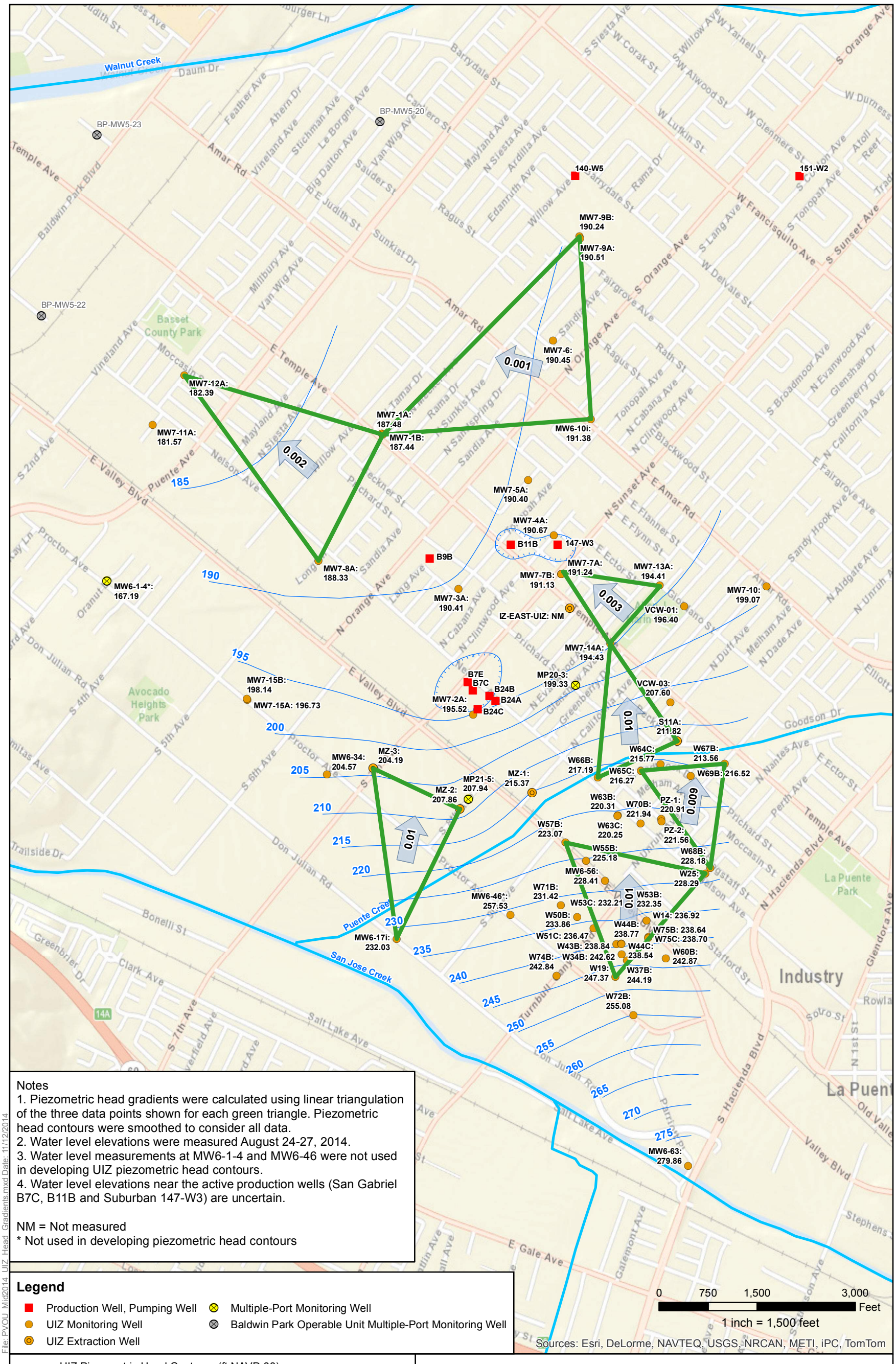
Figure 8-7
Piezometric Head Contours and Gradients
Shallow Zone (SZ2)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/12/2014

N

File: PVOU_Mid2014_SZ2_Head_Gradients.mxd Date: 11/12/2014



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014.
3. Water level measurements at MW6-1-4 and MW6-46 were not used in developing UIZ piezometric head contours.
4. Water level elevations near the active production wells (San Gabriel B7C, B11B and Suburban 147-W3) are uncertain.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- UIZ Monitoring Well
- UIZ Extraction Well
- Multiple-Port Monitoring Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- UIZ Piezometric Head Contours (ft NAVD 88)
- Closely spaced piezometric head contours
- Puente Creek, San Jose Creek, and Walnut Creek
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

CDM Smith

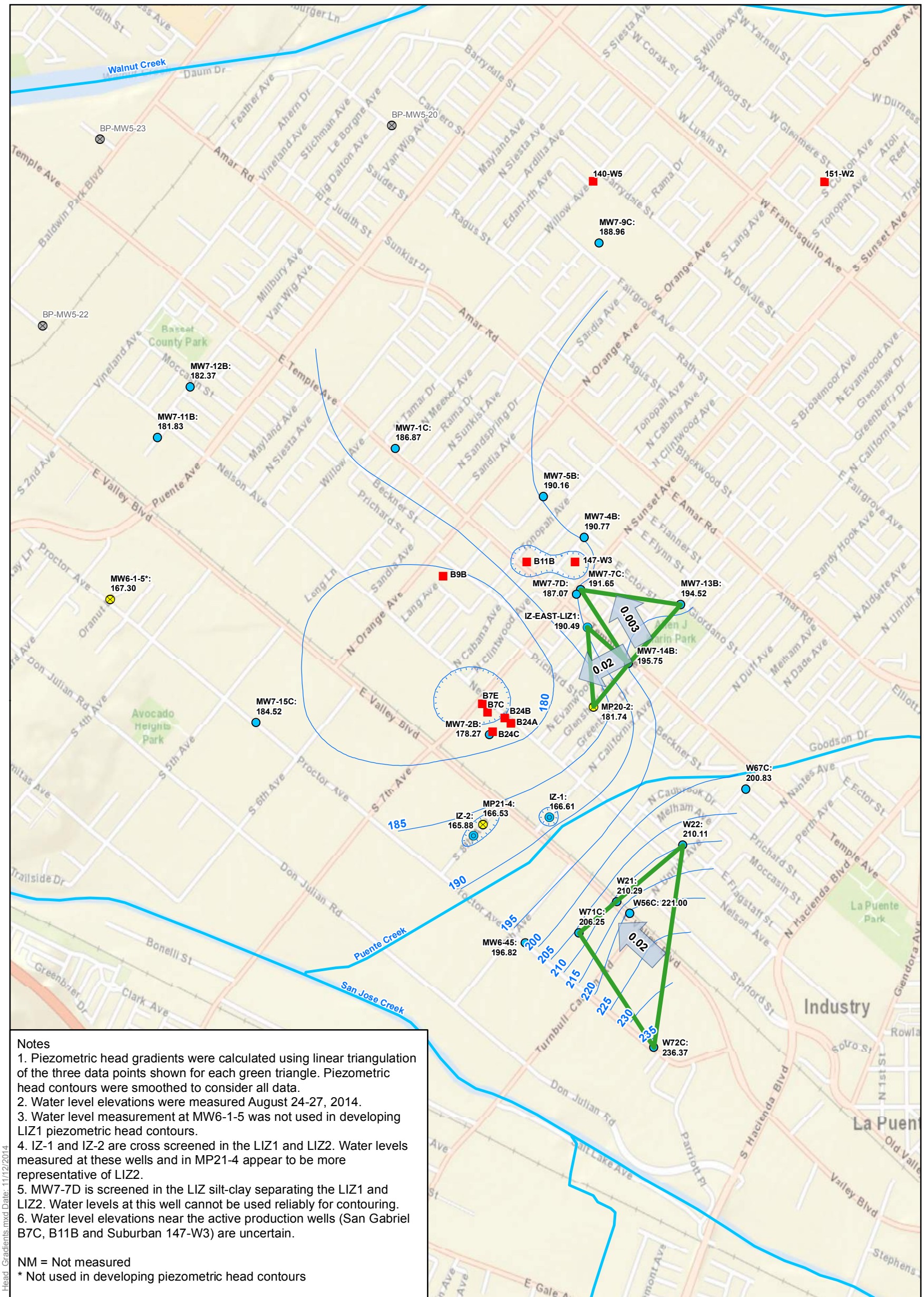
Figure 9
Piezometric Head Contours and Gradients
Upper Intermediate Zone (UIZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/12/2014

N

File: PVOU_Mid2014_UIZ_Head_Gradients.mxd Date: 11/12/2014



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014.
3. Water level measurement at MW6-1-5 was not used in developing LIZ1 piezometric head contours.
4. IZ-1 and IZ-2 are cross screened in the LIZ1 and LIZ2. Water levels measured at these wells and in MP21-4 appear to be more representative of LIZ2.
5. MW7-7D is screened in the LIZ silt-clay separating the LIZ1 and LIZ2. Water levels at this well cannot be used reliably for contouring.
6. Water level elevations near the active production wells (San Gabriel B7C, B11B and Suburban 147-W3) are uncertain.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- LIZ Extraction Well
- LIZ Monitoring Well
- Multiple-Port Monitoring Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- LIZ1 Piezometric Head Contours (ft NAVD 88)
- Closely spaced piezometric head contours
- Puente Creek, San Jose Creek, and Walnut Creek
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

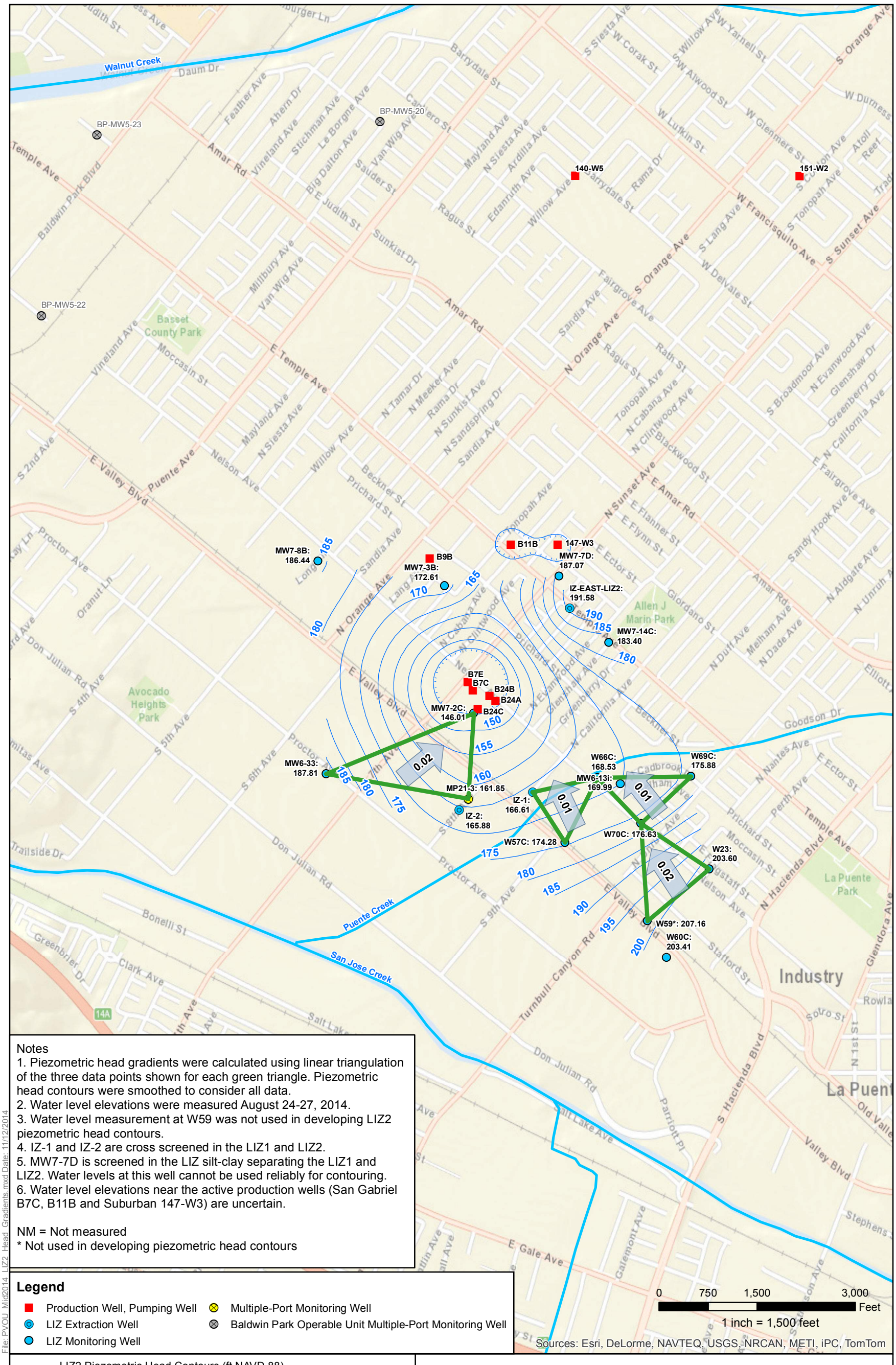
CDM Smith

Figure 10-1
Piezometric Head Contours and Gradients
Lower Intermediate Zone (LIZ1)
2014 Annual Comprehensive Event

Puente Valley Operable Unit
11/12/2014

N

File: PVOU_Mid2014_LIZ1_Head_Gradients.mxd Date: 11/12/2014



Notes
1. Piezometric head gradients were calculated using linear triangulation of the three data points shown for each green triangle. Piezometric head contours were smoothed to consider all data.
2. Water level elevations were measured August 24-27, 2014.
3. Water level measurement at W59 was not used in developing LIZ2 piezometric head contours.
4. IZ-1 and IZ-2 are cross screened in the LIZ1 and LIZ2.
5. MW7-7D is screened in the LIZ silt-clay separating the LIZ1 and LIZ2. Water levels at this well cannot be used reliably for contouring.
6. Water level elevations near the active production wells (San Gabriel B7C, B11B and Suburban 147-W3) are uncertain.

NM = Not measured
* Not used in developing piezometric head contours

Legend

- Production Well, Pumping Well
- LIZ Extraction Well
- LIZ Monitoring Well
- Multiple-Port Monitoring Well
- Baldwin Park Operable Unit Multiple-Port Monitoring Well
- LIZ2 Piezometric Head Contours (ft NAVD 88)
- Closely spaced piezometric head contours
- Puente Creek, San Jose Creek, and Walnut Creek
- Estimated groundwater flow direction and gradient
- Wells used to calculate posted gradients

CDM Smith

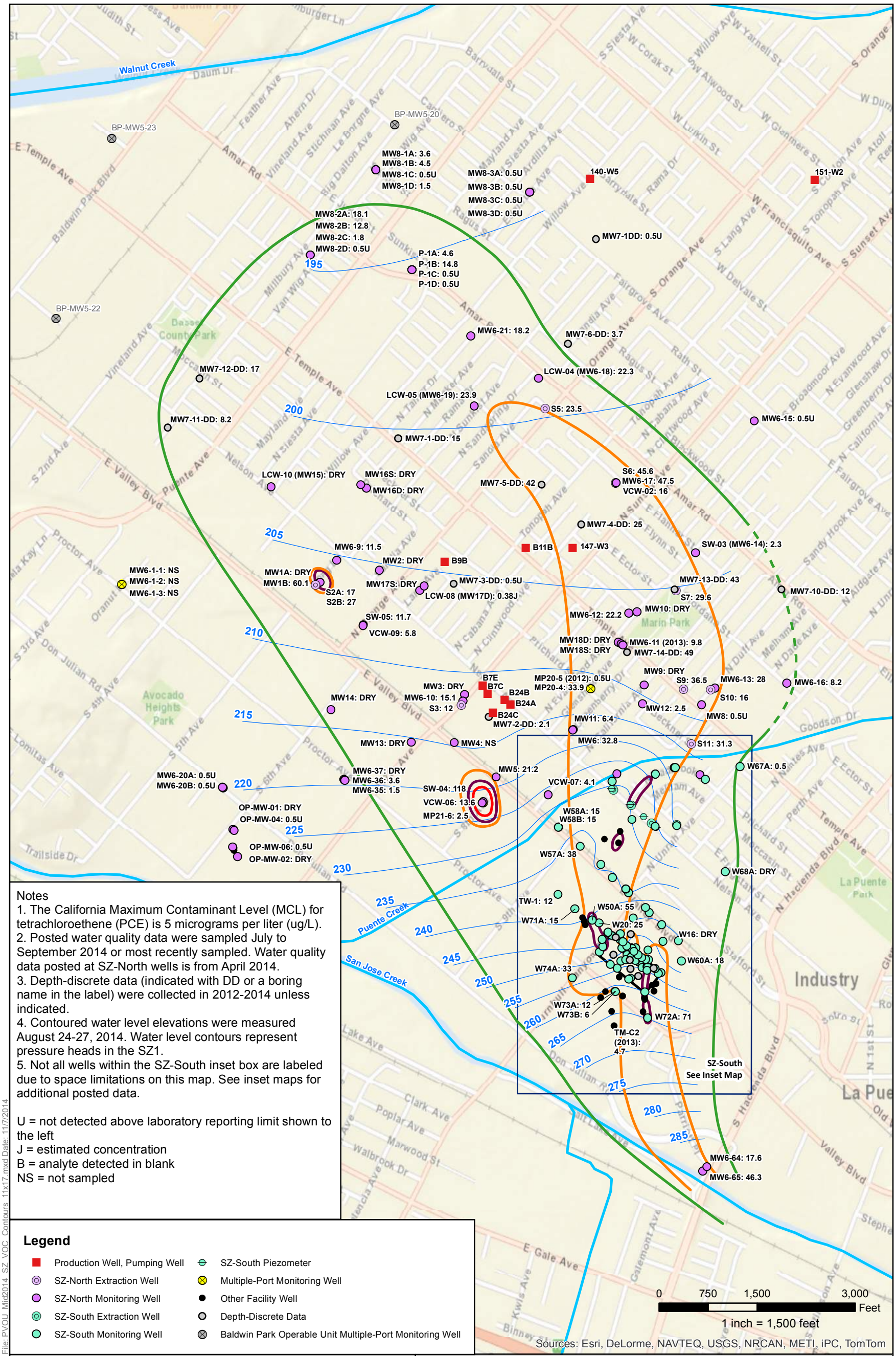
Figure 10-2
Piezometric Head Contours and Gradients
Lower Intermediate Zone (LIZ2)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/12/2014

N

File: PVOU_Mid2014_LIZ2_Head_Gradients.mxd Date: 11/12/2014



Notes
1. The California Maximum Contaminant Level (MCL) for tetrachloroethene (PCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Depth-Discrete Data
- Baldwin Park Operable Unit Multiple-Port Monitoring Well

PCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L

Dashed lines are approximate

- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

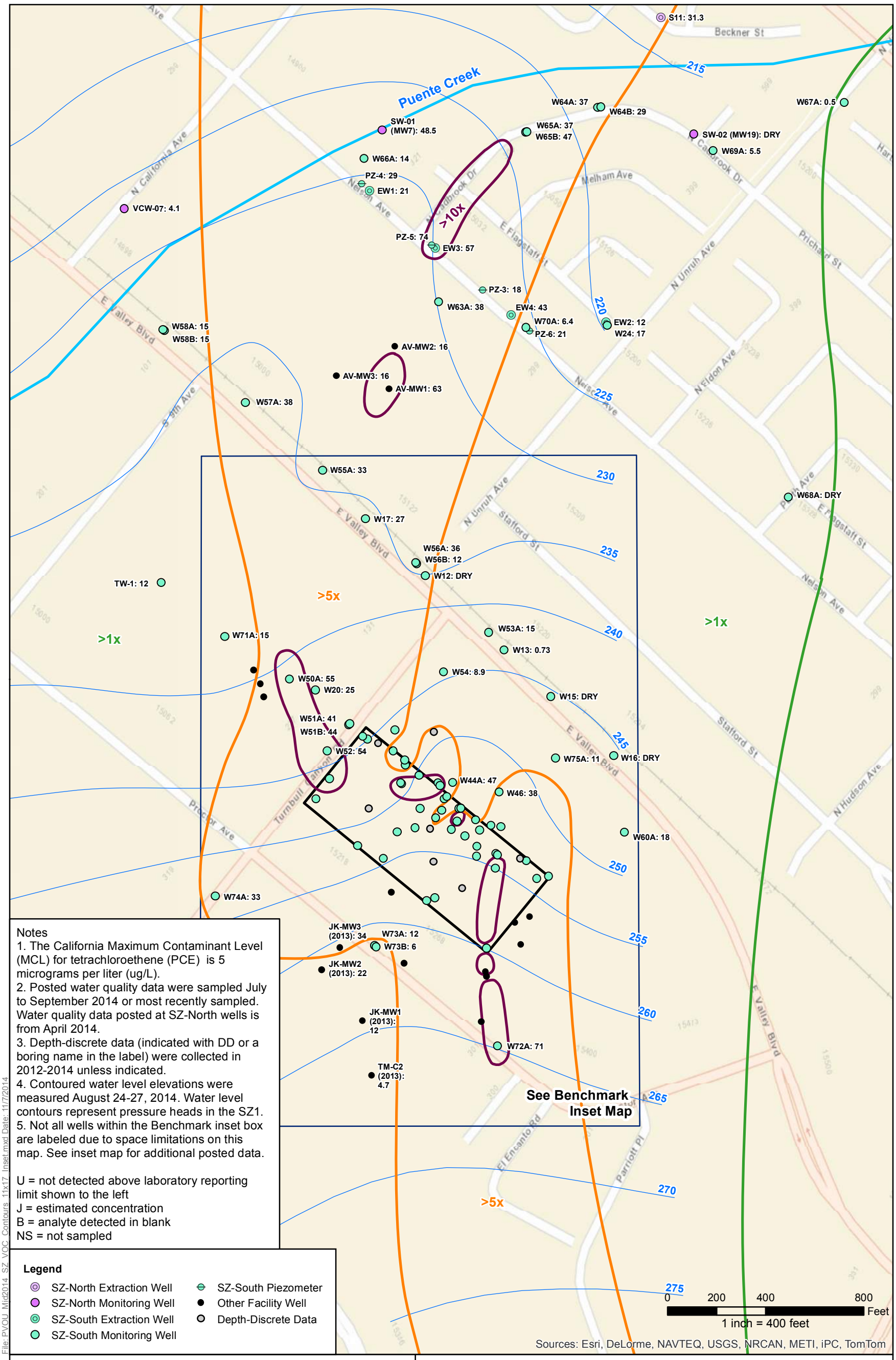
Figure 11-1
PCE Isoconcentration Contours
Shallow Zone (SZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for tetrachloroethene (PCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Depth-Discrete Data

PCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility

CDM Smith

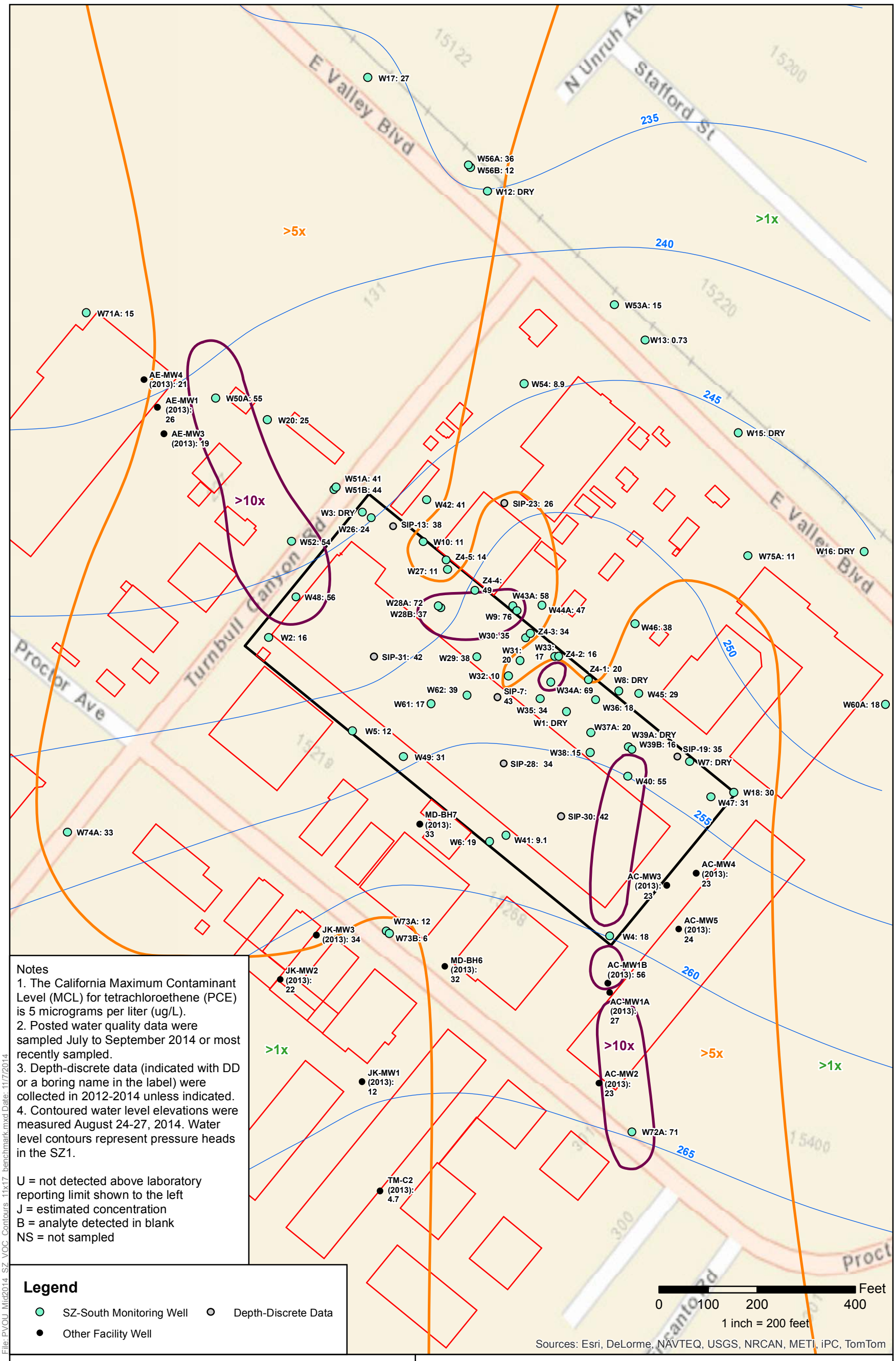
Figure 11-2
PCE Isoconcentration Contours
Shallow Zone (SZ) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_Inset.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for tetrachloroethene (PCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-South Monitoring Well
- Depth-Discrete Data
- Other Facility Well

PCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Former TRW Benchmark Technology Facility
- Building Outline

CDM Smith

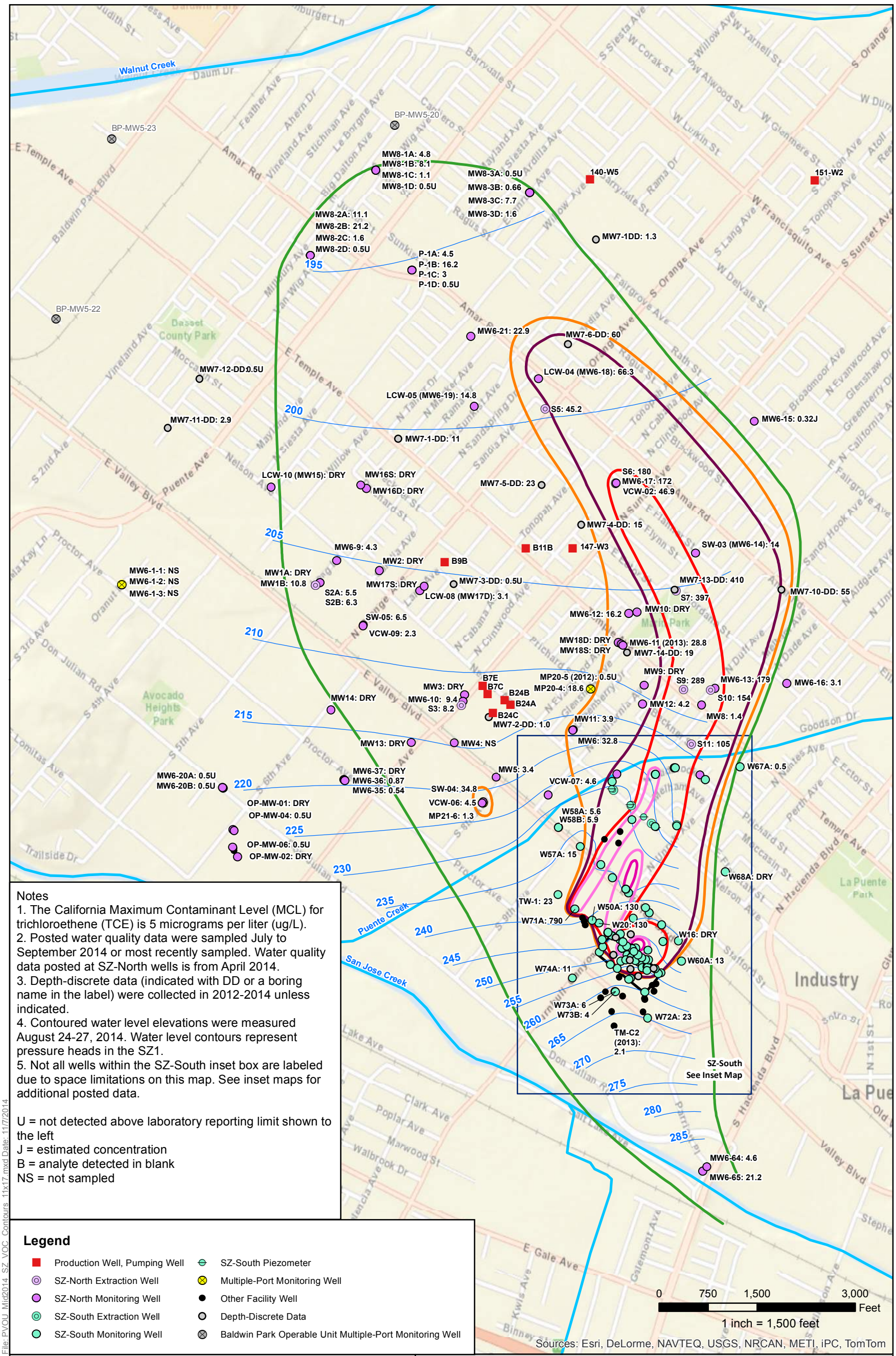
Figure 11-3
PCE Isoconcentration Contours
Shallow Zone (SZ) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_benchmark.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for trichloroethene (TCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Depth-Discrete Data
- Baldwin Park Operable Unit Multiple-Port Monitoring Well

TCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L

- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

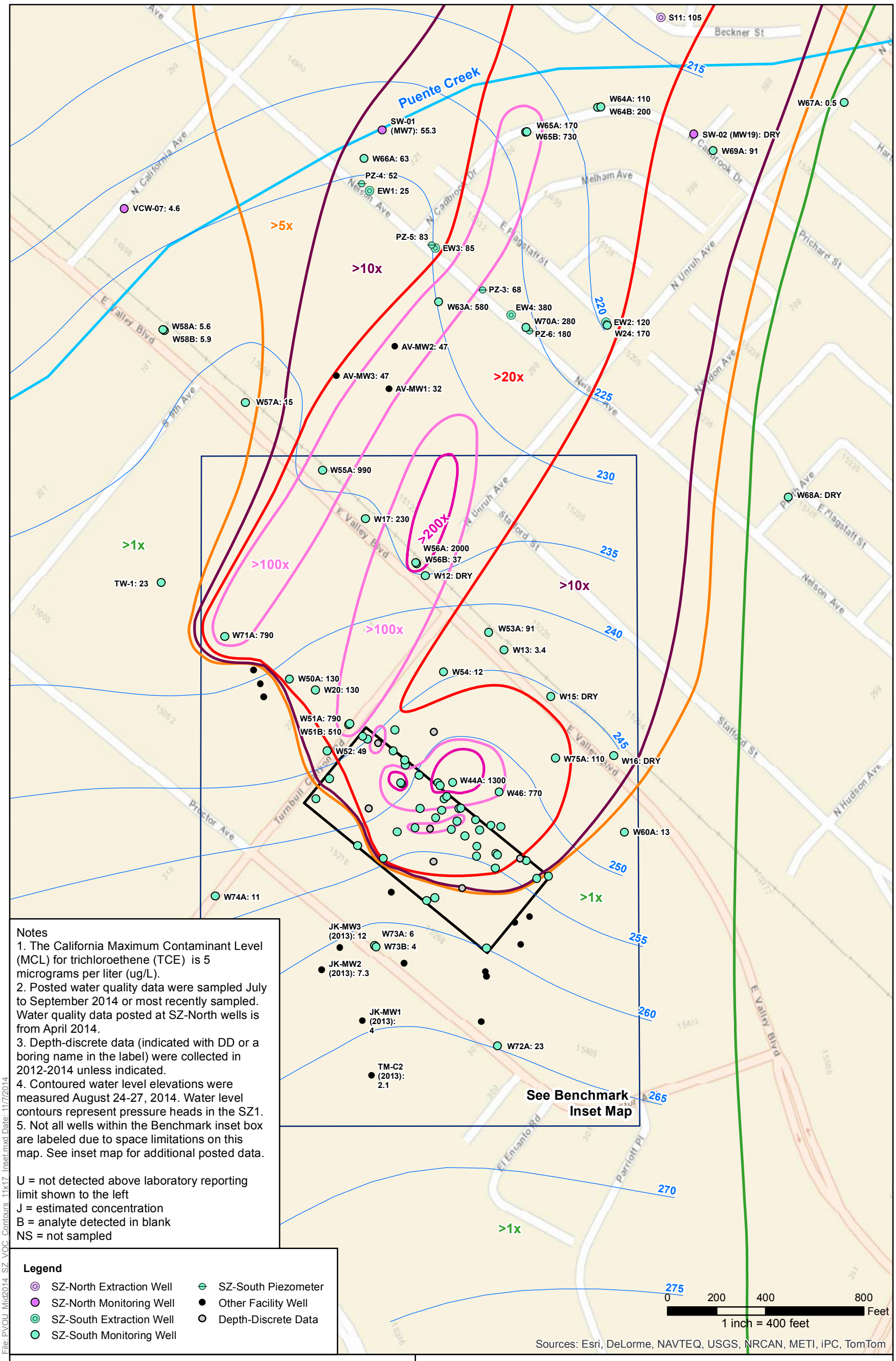
Figure 12-1
TCE Isoconcentration Contours
Shallow Zone (SZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for trichloroethene (TCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Depth-Discrete Data

TCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility

CDM Smith

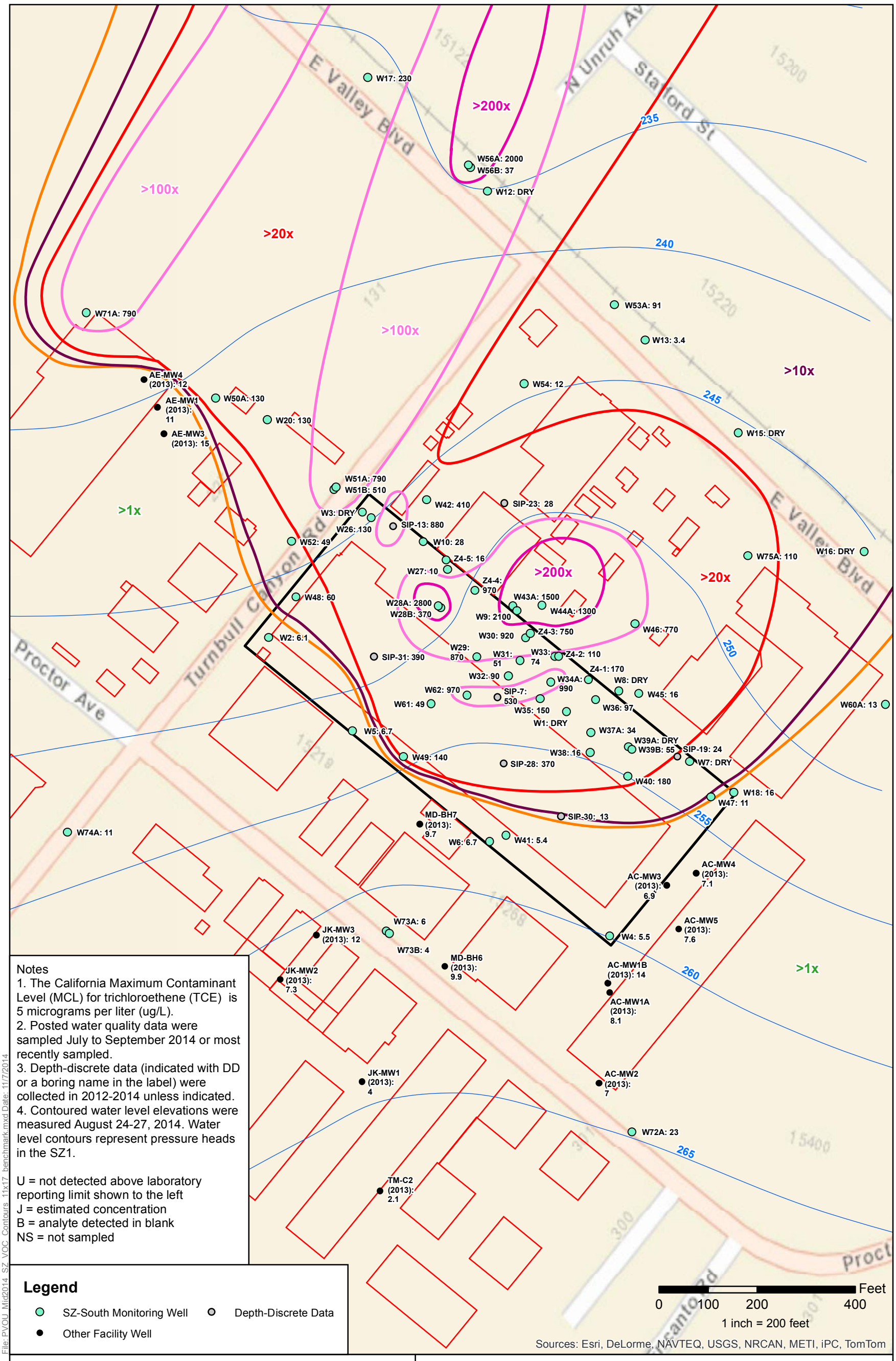
Figure 12-2
TCE Isoconcentration Contours
Shallow Zone (SZ) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_Inset.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for trichloroethene (TCE) is 5 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-South Monitoring Well
- Depth-Discrete Data
- Other Facility Well

TCE Isoconcentration Contours

- 1x MCL, 5 ug/L
- 5x MCL, 25 ug/L
- 10x MCL, 50 ug/L
- 20x MCL, 100 ug/L
- 100x MCL, 500 ug/L
- 200x MCL, 1,000 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Former TRW Benchmark Technology Facility
- Building Outline

CDM Smith

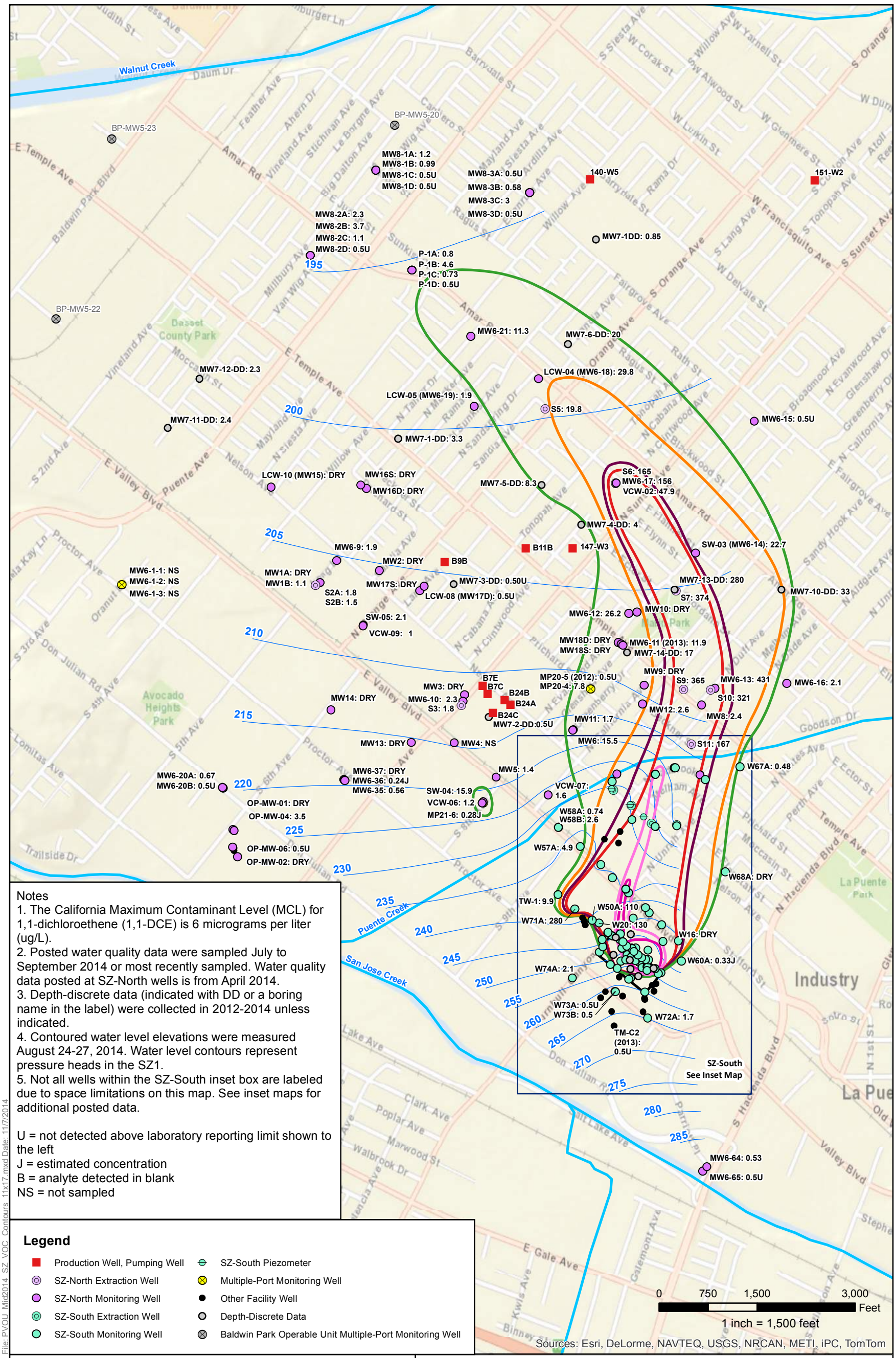
Figure 12-3
TCE Isoconcentration Contours
Shallow Zone (SZ) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_benchmark.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for 1,1-dichloroethene (1,1-DCE) is 6 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Depth-Discrete Data
- Baldwin Park Operable Unit Multiple-Port Monitoring Well

1,1-DCE Isoconcentration Contours

- 1x MCL, 6 ug/L
- 5x MCL, 30 ug/L
- 10x MCL, 60 ug/L
- 20x MCL, 120 ug/L
- 100x MCL, 600 ug/L
- 200x MCL, 1,200 ug/L

- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

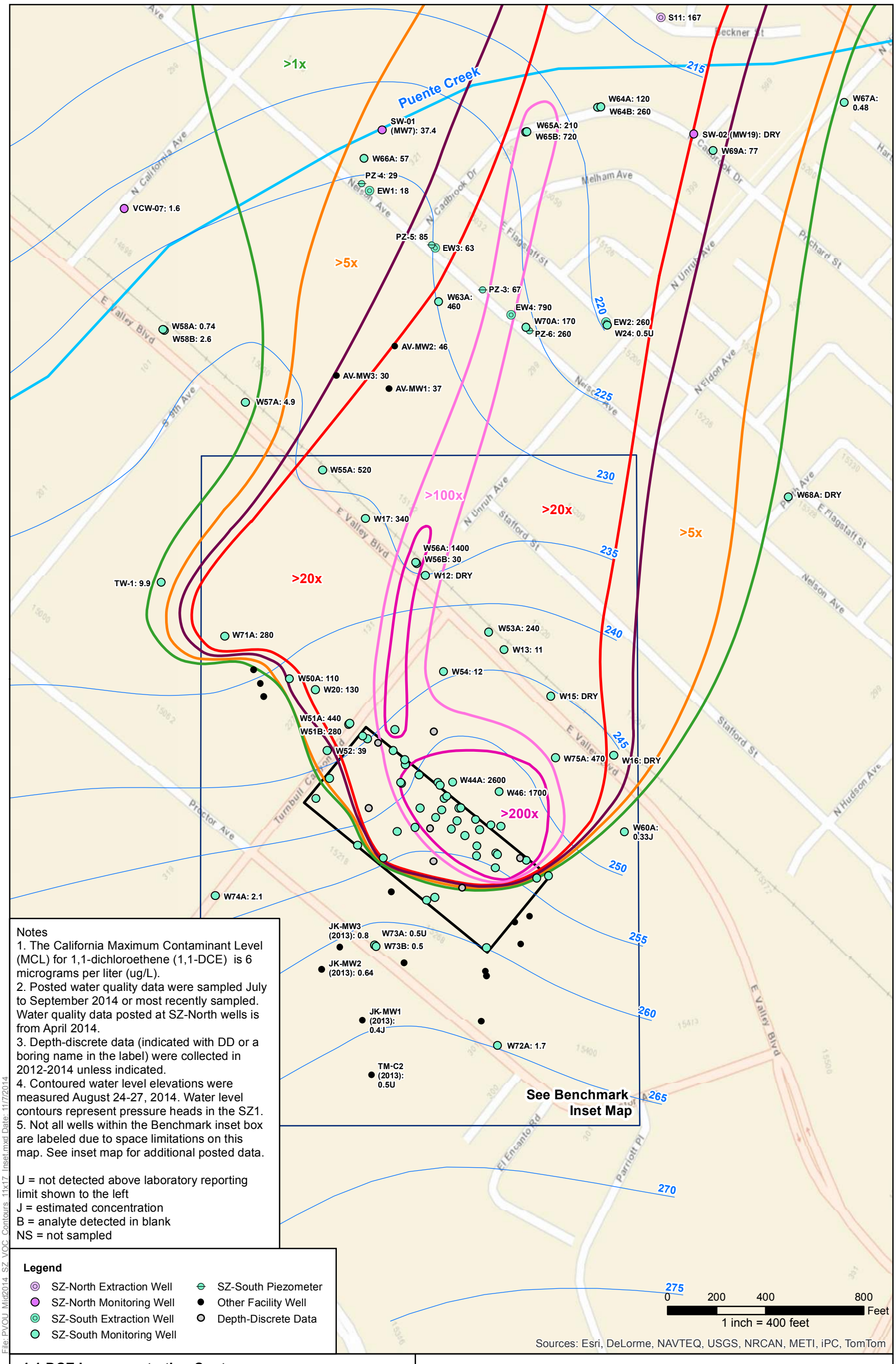
Figure 13-1
1,1-DCE Isoconcentration Contours
Shallow Zone (SZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for 1,1-dichloroethene (1,1-DCE) is 6 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Depth-Discrete Data

1,1-DCE Isoconcentration Contours

- 1x MCL, 6 ug/L
- 5x MCL, 30 ug/L
- 10x MCL, 60 ug/L
- 20x MCL, 120 ug/L
- 100x MCL, 600 ug/L
- 200x MCL, 1,200 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility

CDM Smith

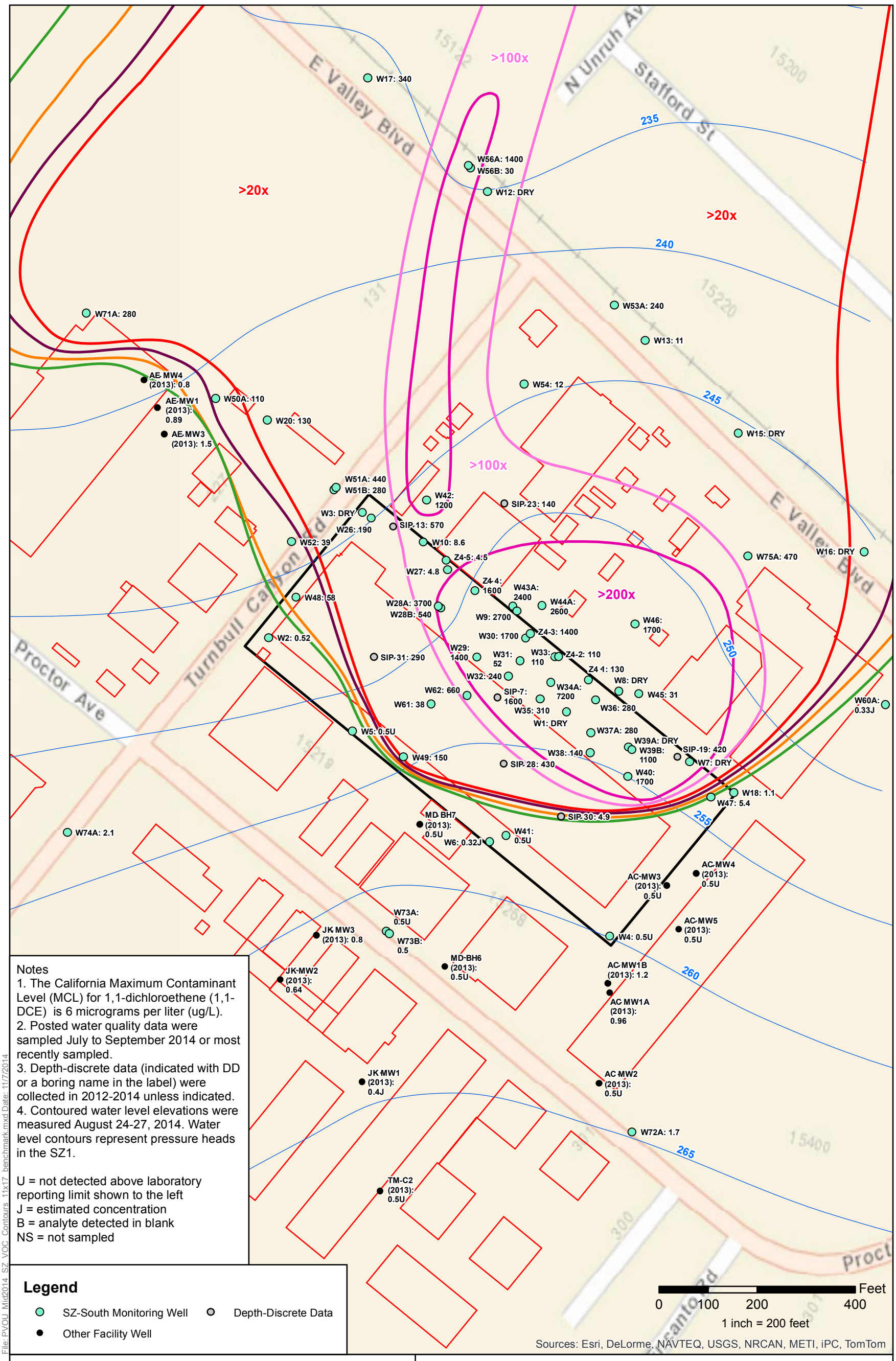
Figure 13-2
1,1-DCE Isoconcentration Contours Shallow Zone (SZ) SZ-South Inset 2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_Inset.mxd Date: 11/7/2014



Notes
1. The California Maximum Contaminant Level (MCL) for 1,1-dichloroethene (1,1-DCE) is 6 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-South Monitoring Well
- Depth-Discrete Data
- Other Facility Well

1,1-DCE Isoconcentration Contours

- 1x MCL, 6 ug/L
- 5x MCL, 30 ug/L
- 10x MCL, 60 ug/L
- 20x MCL, 120 ug/L
- 100x MCL, 600 ug/L
- 200x MCL, 1,200 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Former TRW Benchmark Technology Facility
- Building Outline

CDM Smith

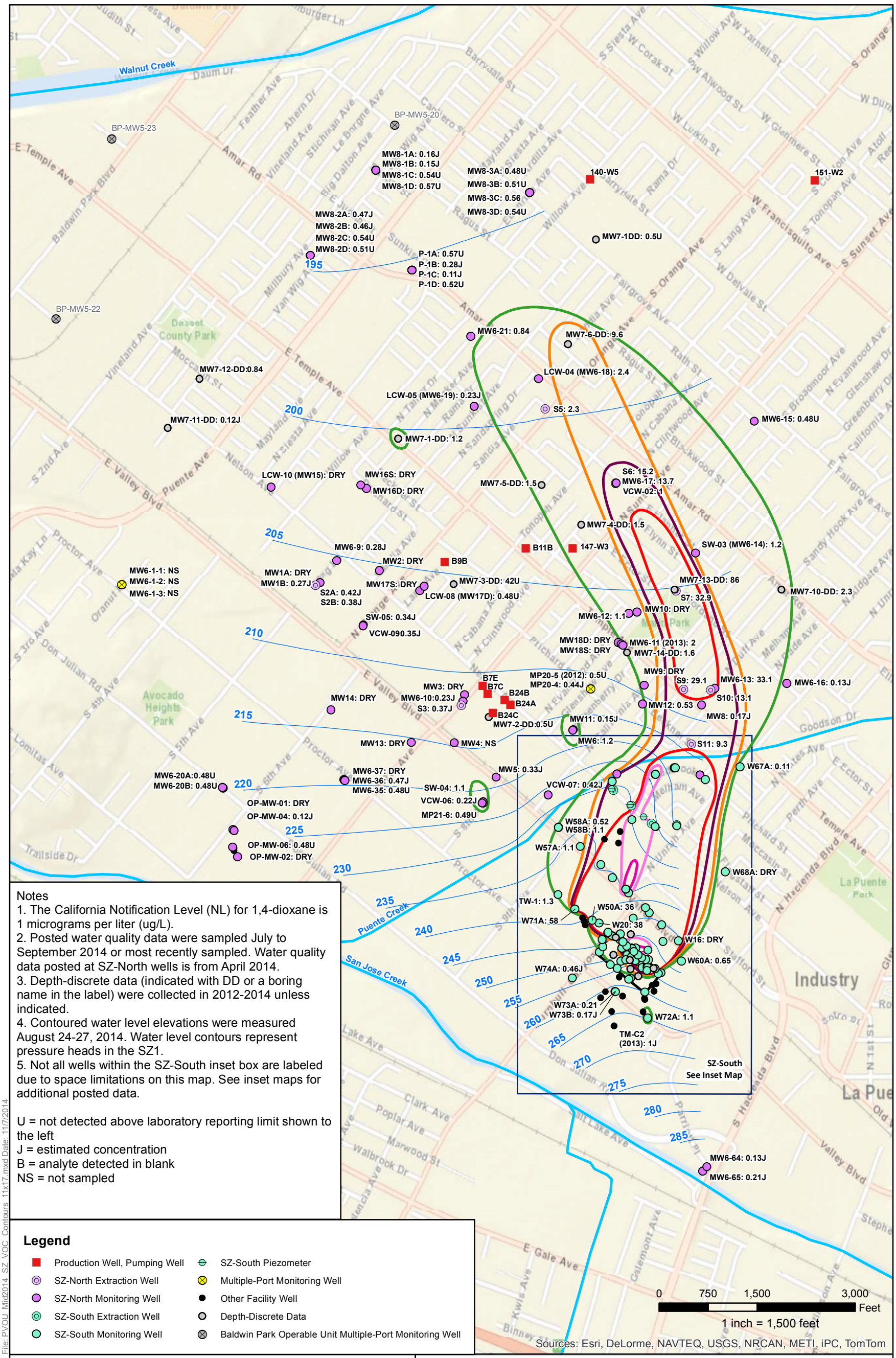
Figure 13-3
1,1-DCE Isoconcentration Contours
Shallow Zone (SZ) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_benchmark.mxd Date: 11/7/2014



Notes
1. The California Notification Level (NL) for 1,4-dioxane is 1 micrograms per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Depth-Discrete Data
- Baldwin Park Operable Unit Multiple-Port Monitoring Well

1,4-Dioxane Isoconcentration Contours

- 1x NL, 1 ug/L
- 5x NL, 5 ug/L
- 10x NL, 10 ug/L
- 20x NL, 20 ug/L
- 100x NL, 100 ug/L
- 200x NL, 200 ug/L

- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek, and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

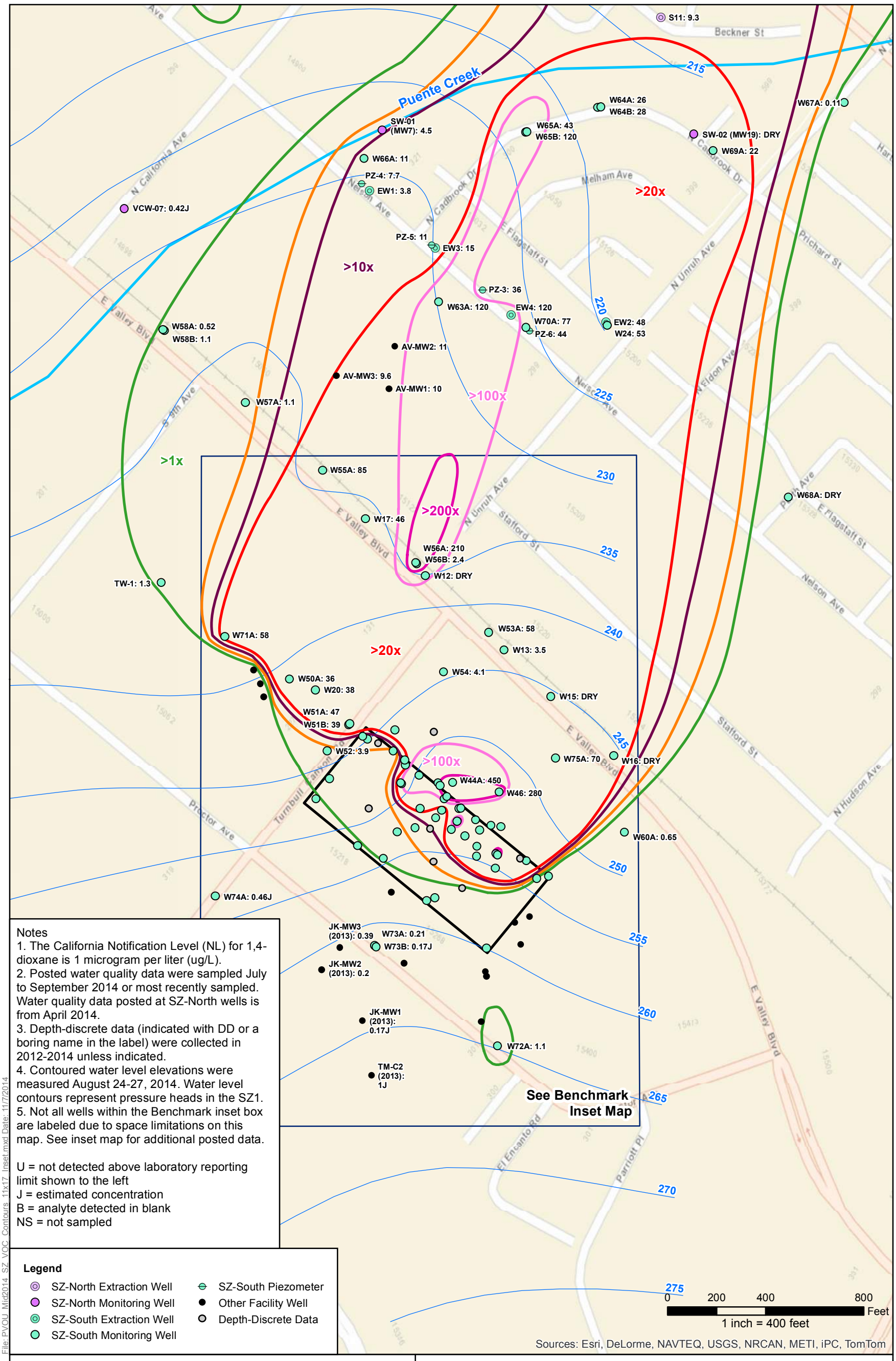
Figure 14-1
1,4-Dioxane Isoconcentration Contours
Shallow Zone (SZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17.mxd Date: 11/7/2014



Notes
1. The California Notification Level (NL) for 1,4-dioxane is 1 microgram per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled. Water quality data posted at SZ-North wells is from April 2014.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
5. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Depth-Discrete Data

1,4-Dioxane Isoconcentration Contours

- 1x NL, 1 ug/L
- 5x NL, 5 ug/L
- 10x NL, 10 ug/L
- 20x NL, 20 ug/L
- 100x NL, 100 ug/L
- 200x NL, 200 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility

CDM Smith

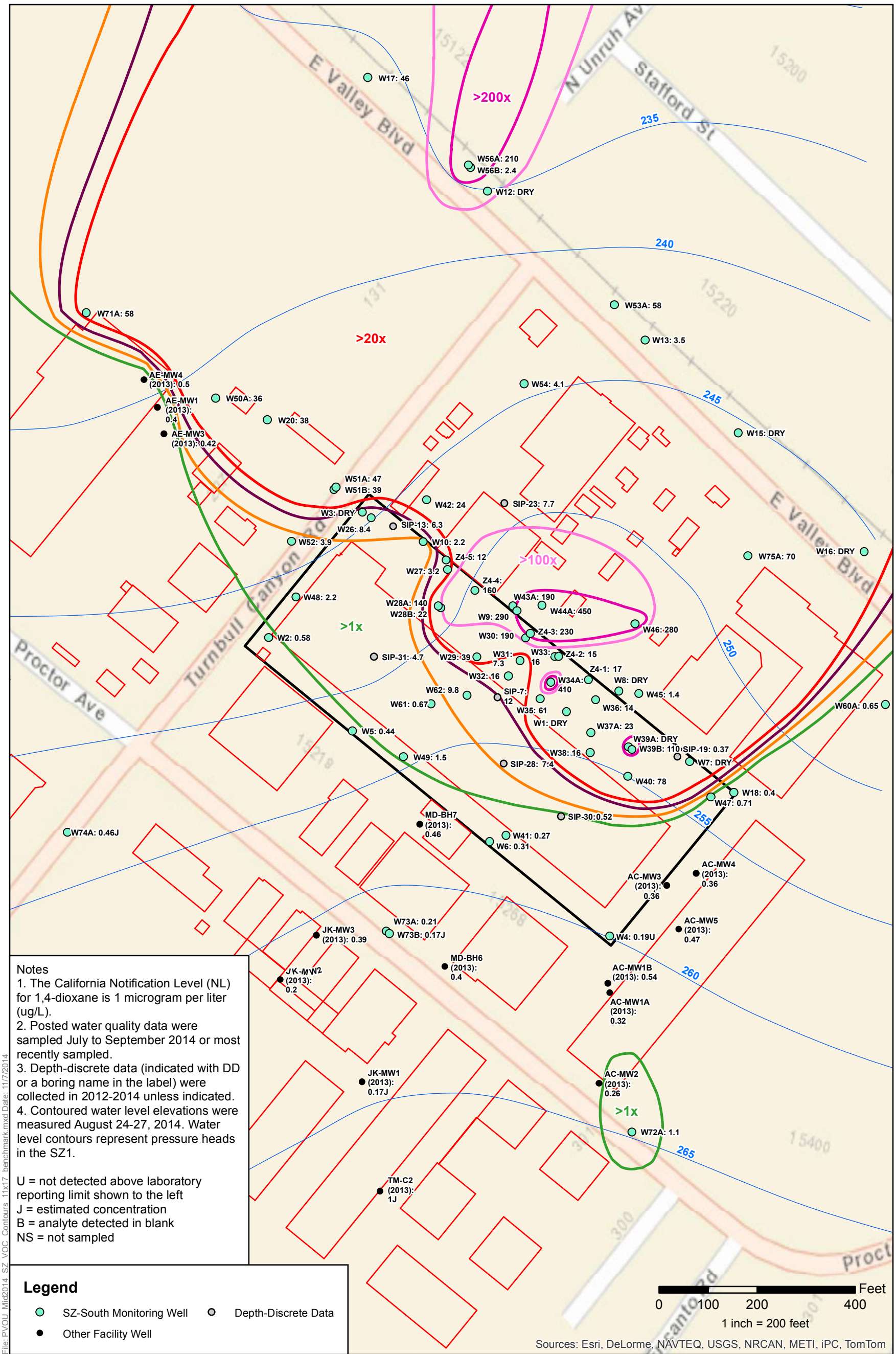
Figure 14-2
1,4-Dioxane Isoconcentration Contours
Shallow Zone (SZ) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_Inset.mxd Date: 11/7/2014



Notes
1. The California Notification Level (NL) for 1,4-dioxane is 1 microgram per liter (ug/L).
2. Posted water quality data were sampled July to September 2014 or most recently sampled.
3. Depth-discrete data (indicated with DD or a boring name in the label) were collected in 2012-2014 unless indicated.
4. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.

U = not detected above laboratory reporting limit shown to the left
J = estimated concentration
B = analyte detected in blank
NS = not sampled

Legend

- SZ-South Monitoring Well
- Depth-Discrete Data
- Other Facility Well

1,4-Dioxane Isoconcentration Contours

- 1x NL, 1 ug/L
- 5x NL, 5 ug/L
- 10x NL, 10 ug/L
- 20x NL, 20 ug/L
- 100x NL, 100 ug/L
- 200x NL, 200 ug/L
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Former TRW Benchmark Technology Facility
- Building Outline

CDM Smith

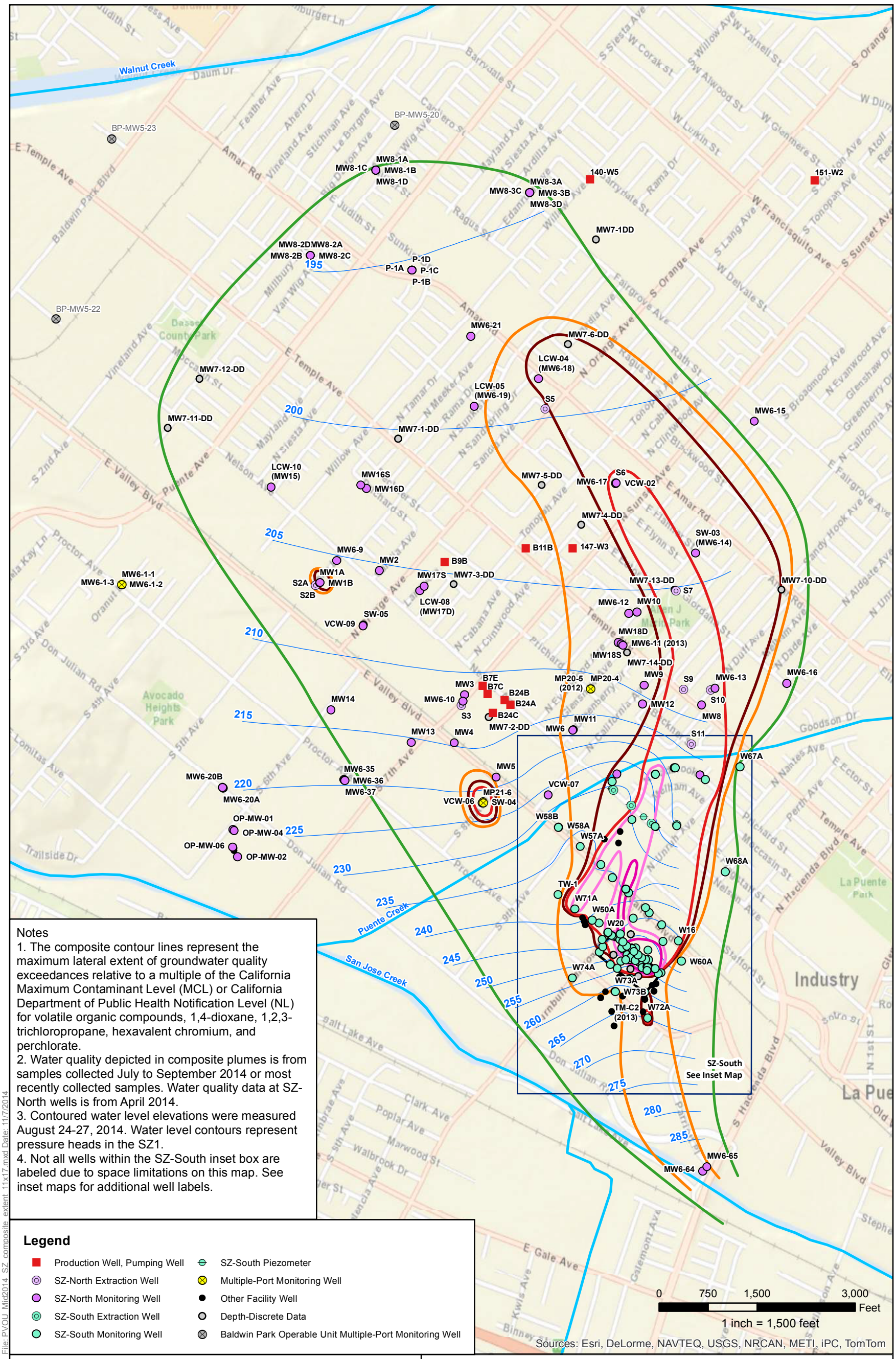
Figure 14-3
1,4-Dioxane Isoconcentration Contours
Shallow Zone (SZ) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_VOC_Contours_11x17_benchmark.mxd Date: 11/7/2014



Notes
1. The composite contour lines represent the maximum lateral extent of groundwater quality exceedances relative to a multiple of the California Maximum Contaminant Level (MCL) or California Department of Public Health Notification Level (NL) for volatile organic compounds, 1,4-dioxane, 1,2,3-trichloropropane, hexavalent chromium, and perchlorate.
2. Water quality depicted in composite plumes is from samples collected July to September 2014 or most recently collected samples. Water quality data at SZ-North wells is from April 2014.
3. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
4. Not all wells within the SZ-South inset box are labeled due to space limitations on this map. See inset maps for additional well labels.

Legend

- Production Well, Pumping Well
- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Multiple-Port Monitoring Well
- Other Facility Well
- Depth-Discrete Data
- Baldwin Park Operable Unit Multiple-Port Monitoring Well

Composite Extent

- 1x MCL or NL
- 5x MCL or NL
- 10x MCL or NL
- 20x MCL or NL
- 100x MCL or NL
- 200x MCL or NL
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek, San Jose Creek and Walnut Creek
- Former TRW Benchmark Technology Facility

CDM Smith

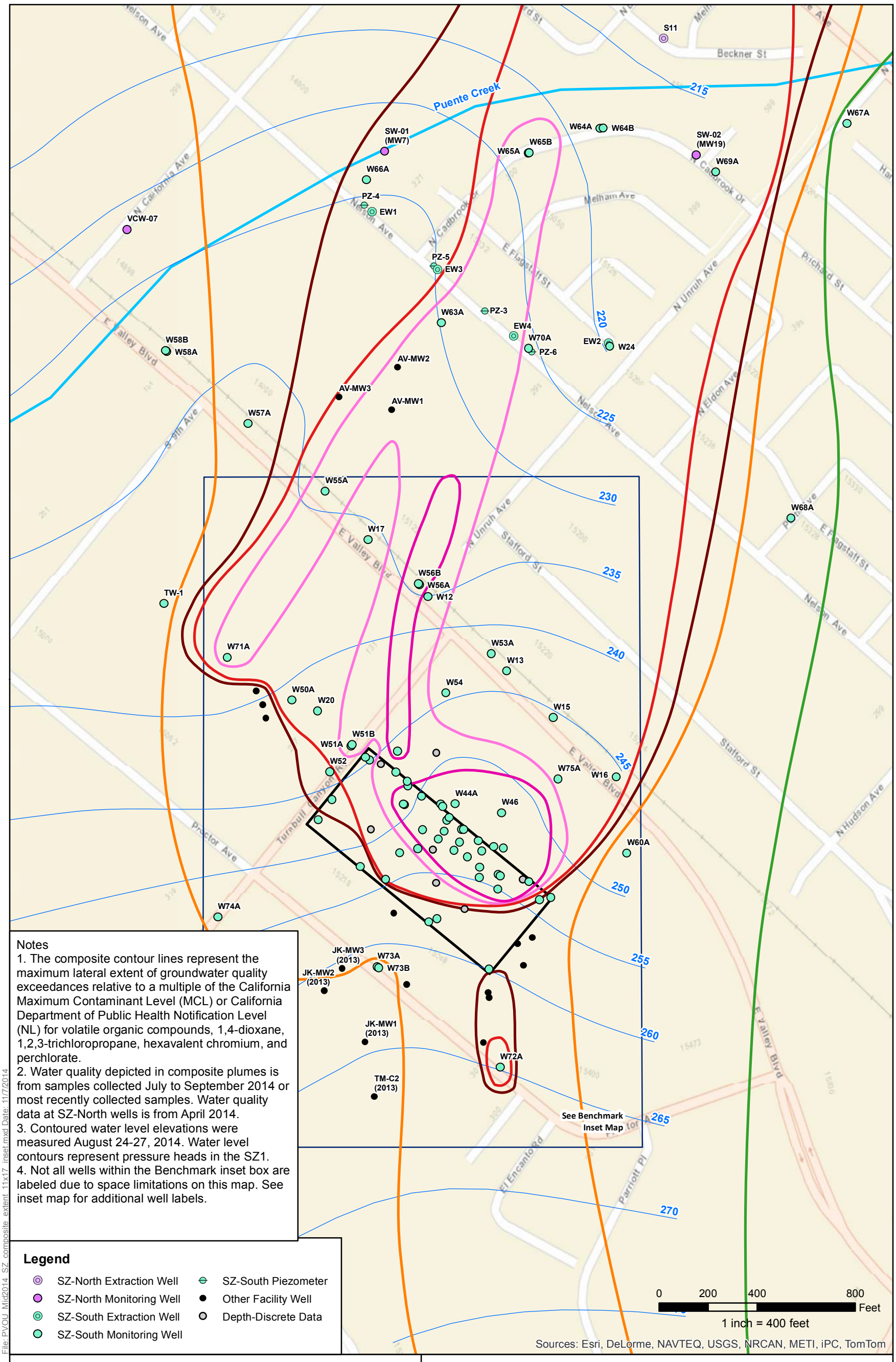
Figure 15-1
Composite Plume
Shallow Zone (SZ)
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_composite_extent_11x17.mxd Date: 11/7/2014



Notes
1. The composite contour lines represent the maximum lateral extent of groundwater quality exceedances relative to a multiple of the California Maximum Contaminant Level (MCL) or California Department of Public Health Notification Level (NL) for volatile organic compounds, 1,4-dioxane, 1,2,3-trichloropropane, hexavalent chromium, and perchlorate.
2. Water quality depicted in composite plumes is from samples collected July to September 2014 or most recently collected samples. Water quality data at SZ-North wells is from April 2014.
3. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1.
4. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional well labels.

Legend

- SZ-North Extraction Well
- SZ-North Monitoring Well
- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- Other Facility Well
- Depth-Discrete Data

Composite Extent

- 1x MCL or NL
- 5x MCL or NL
- 10x MCL or NL
- 20x MCL or NL
- 100x MCL or NL
- 200x MCL or NL
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Puente Creek
- Former TRW Benchmark Technology Facility

CDM Smith

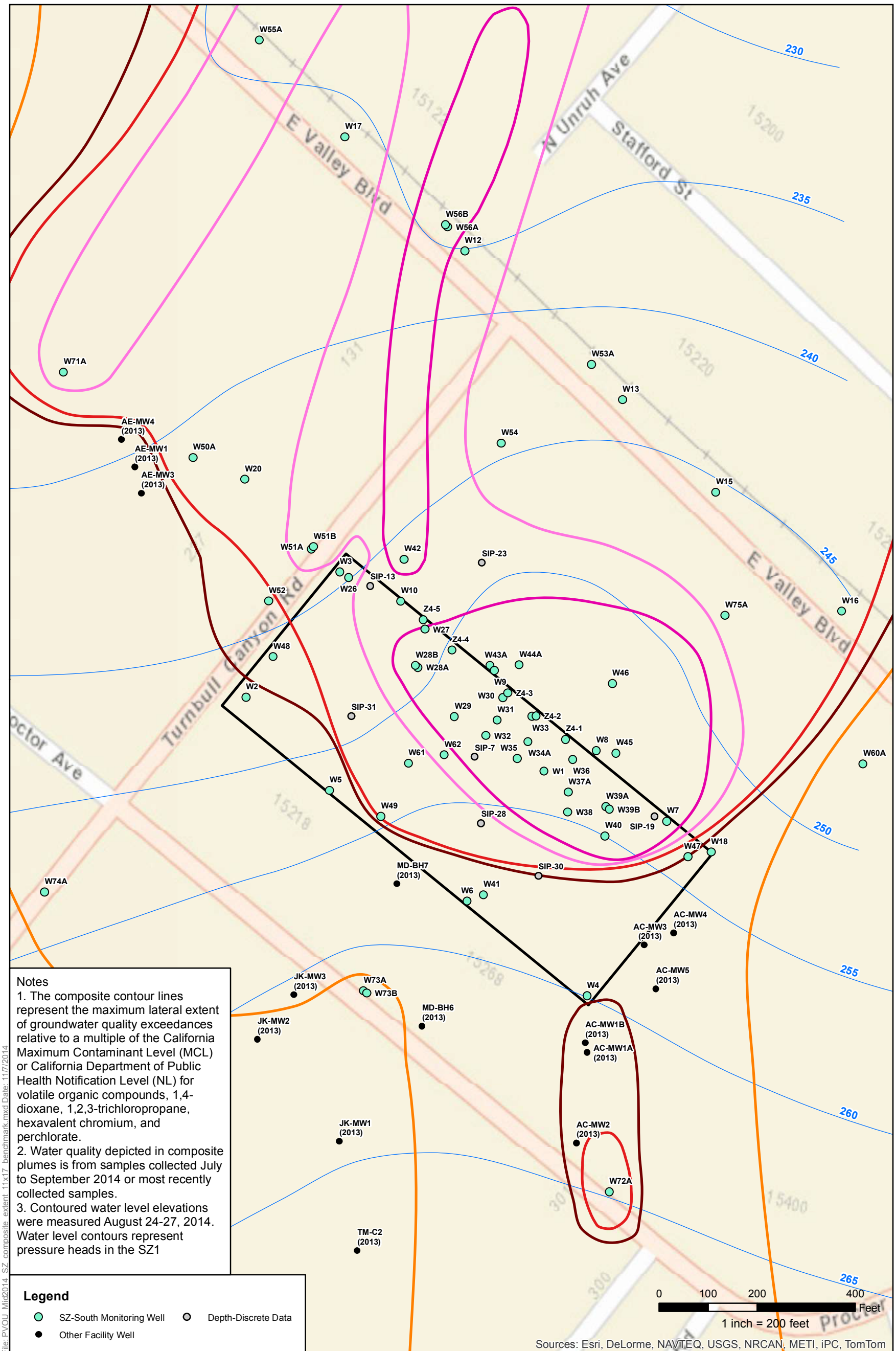
Figure 15-2
Composite Plume
Shallow Zone (SZ) SZ-South Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_composite_extent_11x17_inset.mxd Date: 11/7/2014



Notes
1. The composite contour lines represent the maximum lateral extent of groundwater quality exceedances relative to a multiple of the California Maximum Contaminant Level (MCL) or California Department of Public Health Notification Level (NL) for volatile organic compounds, 1,4-dioxane, 1,2,3-trichloropropane, hexavalent chromium, and perchlorate.
2. Water quality depicted in composite plumes is from samples collected July to September 2014 or most recently collected samples.
3. Contoured water level elevations were measured August 24-27, 2014. Water level contours represent pressure heads in the SZ1

Legend

- SZ-South Monitoring Well
- Depth-Discrete Data
- Other Facility Well

Composite Extent

- 1x MCL or NL
- 5x MCL or NL
- 10x MCL or NL
- 20x MCL or NL
- 100x MCL or NL
- 200x MCL or NL
- SZ1 Piezometric Head Contours (ft NAVD 88)
- Former TRW Benchmark Technology Facility

CDM Smith

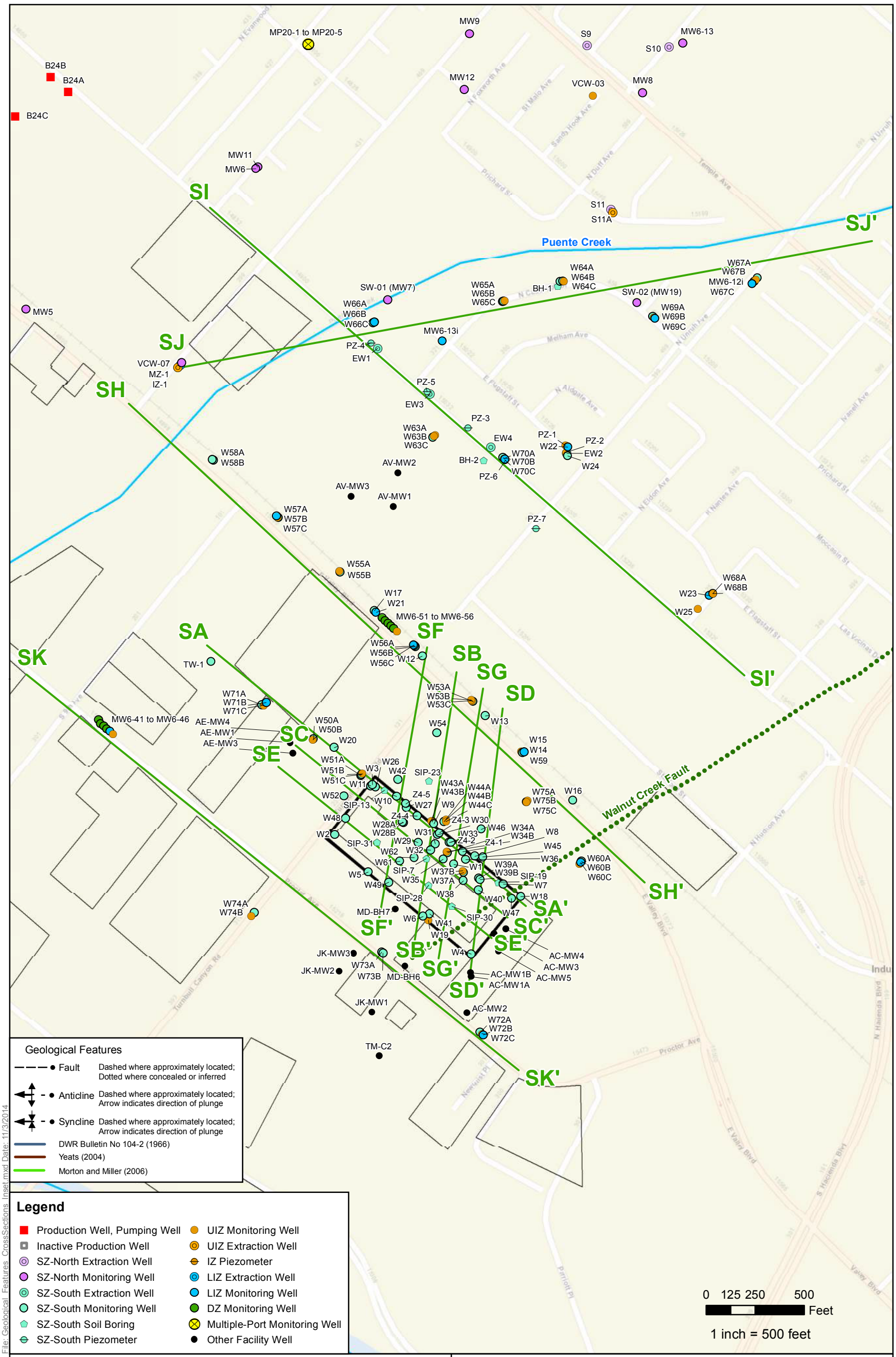
Figure 15-3
Composite Plume
Shallow Zone (SZ) Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/7/2014

N

File: PVOU_Mid2014_SZ_composite_extent_11x17_benchmark.mxd Date: 11/7/2014



SZ-South Cross Section

Puente Creek

Potentially Responsible Party Facility

Former TRW Benchmark Technology Facility

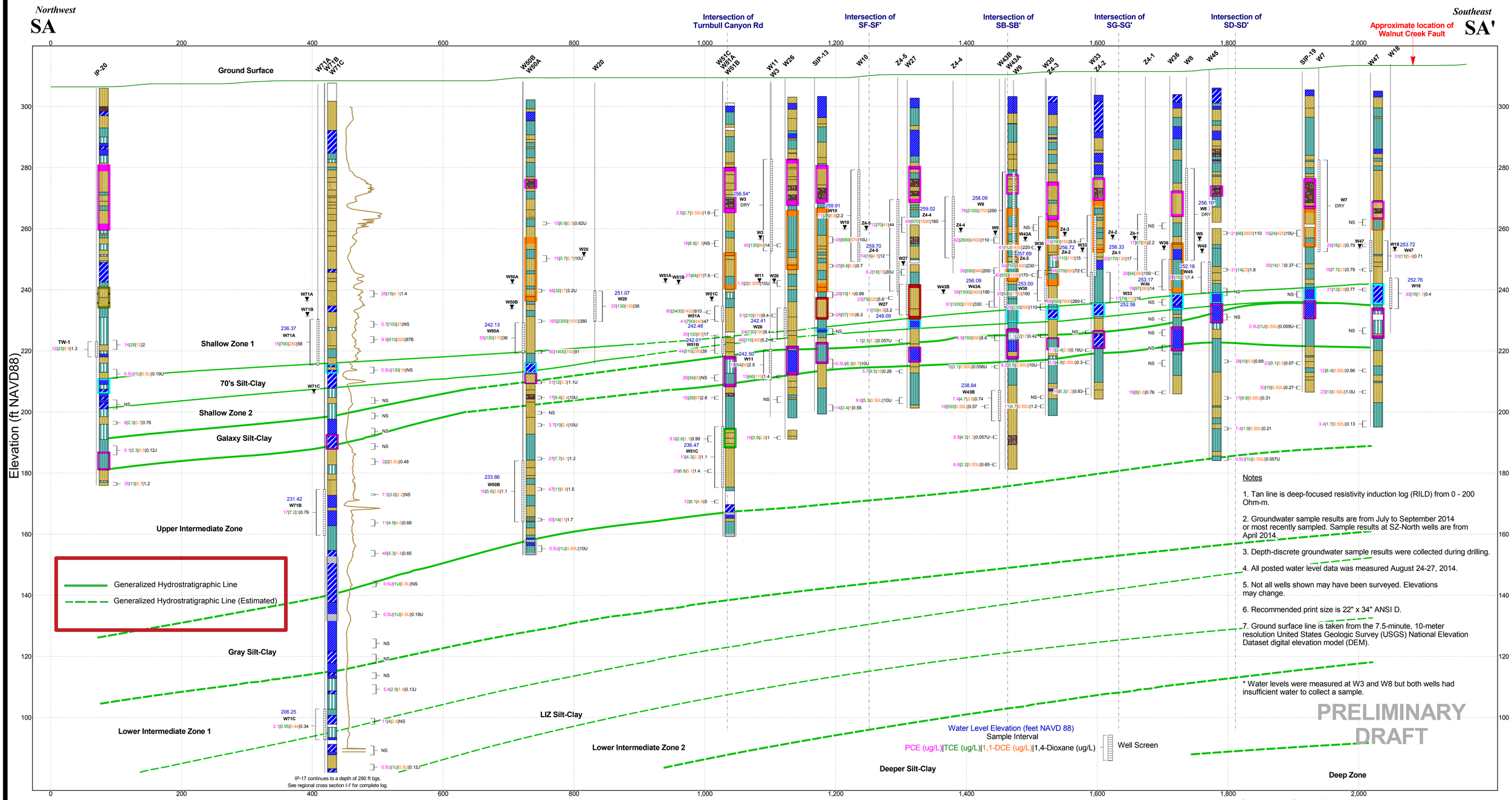
CDM Smith

Figure 16
SZ-South Cross Section Locations

Puente Valley Operable Unit

11/3/2014

N



Notes

1. Tan line is deep-focused resistivity induction log (RILD) from 0 - 200 Ohm-m.

2. Groundwater sample results are from July to September 2014 or most recently sampled. Sample results at SZ-North wells are from April 2014.

3. Depth-discrete groundwater sample results were collected during drilling.

4. All posted water level data was measured August 24-27, 2014.

5. Not all wells shown may have been surveyed. Elevations may change.

6. Recommended print size is 22" x 34" ANSI D.

7. Ground surface line is taken from the 7.5-minute, 10-meter resolution United States Geologic Survey (USGS) National Elevation Dataset digital elevation model (DEM).

* Water levels were measured at W3 and W8 but both wells had insufficient water to collect a sample.

Cross Section Location

N

USCS Well-graded Sand (SW)
USCS Poorly-graded Sand (SP)
USCS Silty Sand (SM)
USCS Silty Sand and Silty Clay (SM-SC)
USCS Clayey Sand (SC-SM)
USCS Clayey Sand (SC)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Poorly-graded Sand with Clay (SP-SC)
USCS Well-graded Sand with Clay (SW-SC)
USCS Well-graded Sand with Silt (SW-SM)
USCS Well-graded Gravel (GW)
USCS Poorly-graded Gravel (GP)
USCS Silty Gravel (GM)
USCS Well-graded Gravel with Silt (GW-GM)
USCS Elastic Silt (MH)
USCS Silt (ML)
USCS High Plasticity Clay (CH)
USCS Low Plasticity Clay (CL)
USCS Low Plasticity Silty Clay (CL-ML)
70S CLAY
SAND AND GRAVEL
SM/ML WITH CALCIUM CARBONATE NODULES
RED SM
GALAXY SILT-CLAY
GRAY ML/CL
SILT/SAND/GRAVEL
WELL GRADED SAND WITH GRAVEL

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
NS - not sampled
NR - no recovery
B - analyte detected in blank
NM - not measured

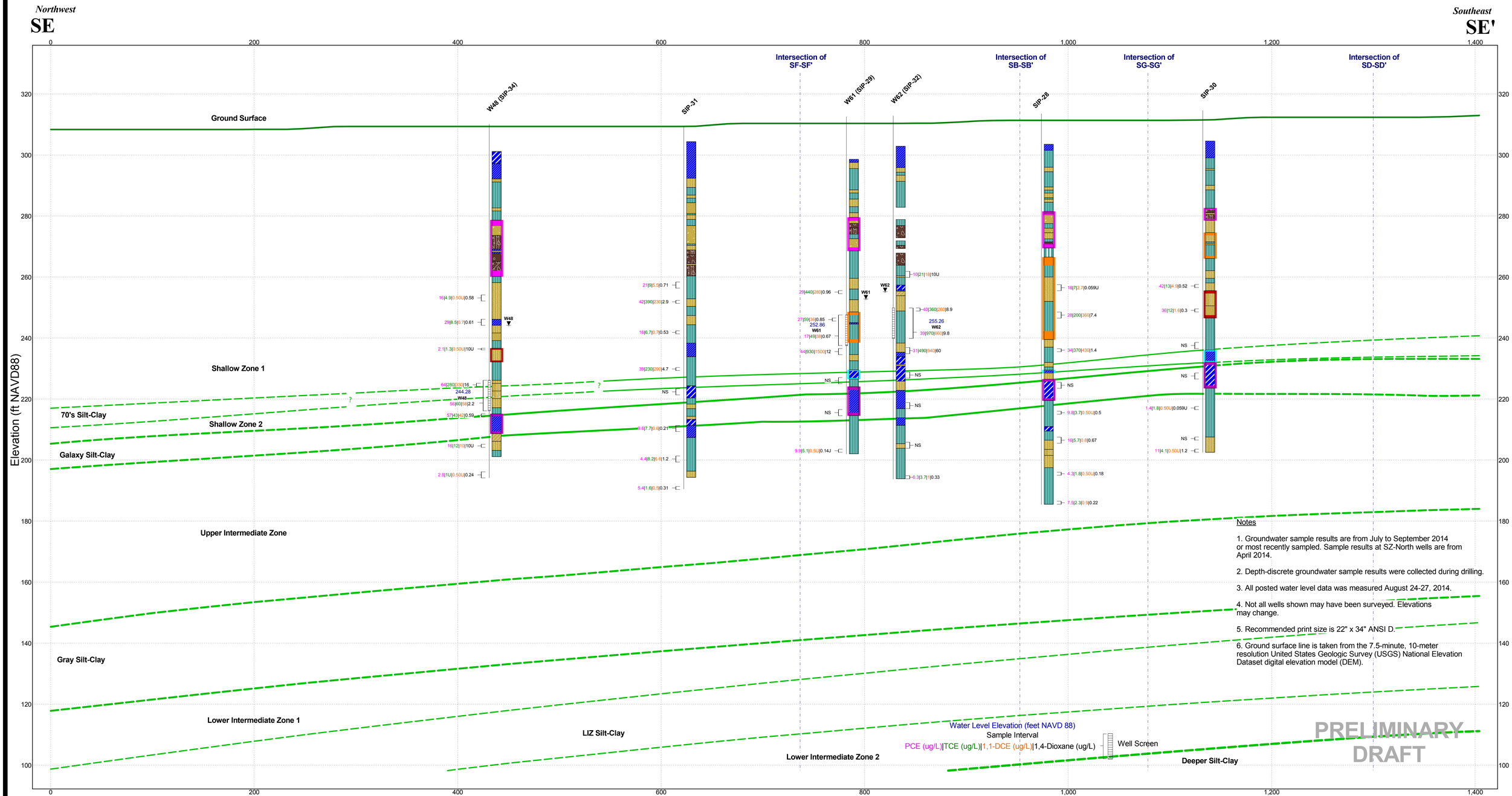
Horizontal Scale (feet) 0 70
Vertical Scale (feet) 0 15

Vertical Exaggeration: 4.5x

Figure 17
SZ-South Cross Section SA-SA'
Puente Valley Operable Unit

October 31, 2014

CDM Smith



Notes

1. Groundwater sample results are from July to September 2014 or most recently sampled. Sample results at SZ-North wells are from April 2014.

2. Depth-discrete groundwater sample results were collected during drilling.

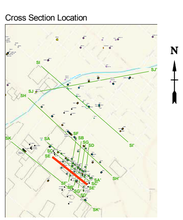
3. All posted water level data was measured August 24-27, 2014.

4. Not all wells shown may have been surveyed. Elevations may change.

5. Recommended print size is 22" x 34" ANSI D.

6. Ground surface line is taken from the 7.5-minute, 10-meter resolution United States Geologic Survey (USGS) National Elevation Dataset digital elevation model (DEM).

Cross Section Location



N

- USCS Well-graded Sand (SW)
- USCS Poorly-graded Sand (SP)
- USCS Silty Sand (SM)
- USCS Poorly-graded Sand with Silt (SP-SM)
- USCS Clayey Sand (SC)
- USCS Well-graded Sand with Silt (SW-SM)
- USCS Well-graded Gravel (GW)
- USCS Poorly-graded Gravel (GP)
- USCS Clayey Gravel (GC)
- USCS Silty Gravel (GM)
- USCS Well-graded Gravel with Silt (GW-GM)
- USCS Elastic Silt (MH)
- USCS Silt (ML)
- USCS High Plasticity Clay (CH)
- USCS Low Plasticity Clay (CL)
- SAND AND GRAVEL
- SM/ML WITH CALCIUM CARBONATE NODULES
- 70S CLAY
- GALAXY SILT-CLAY
- RED SM
- Generalized Hydrostratigraphic Line
- Generalized Hydrostratigraphic Line (Estimated)

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
B - analyte detected in blank
NS - not sampled
NR - no recovery
NM - not measured

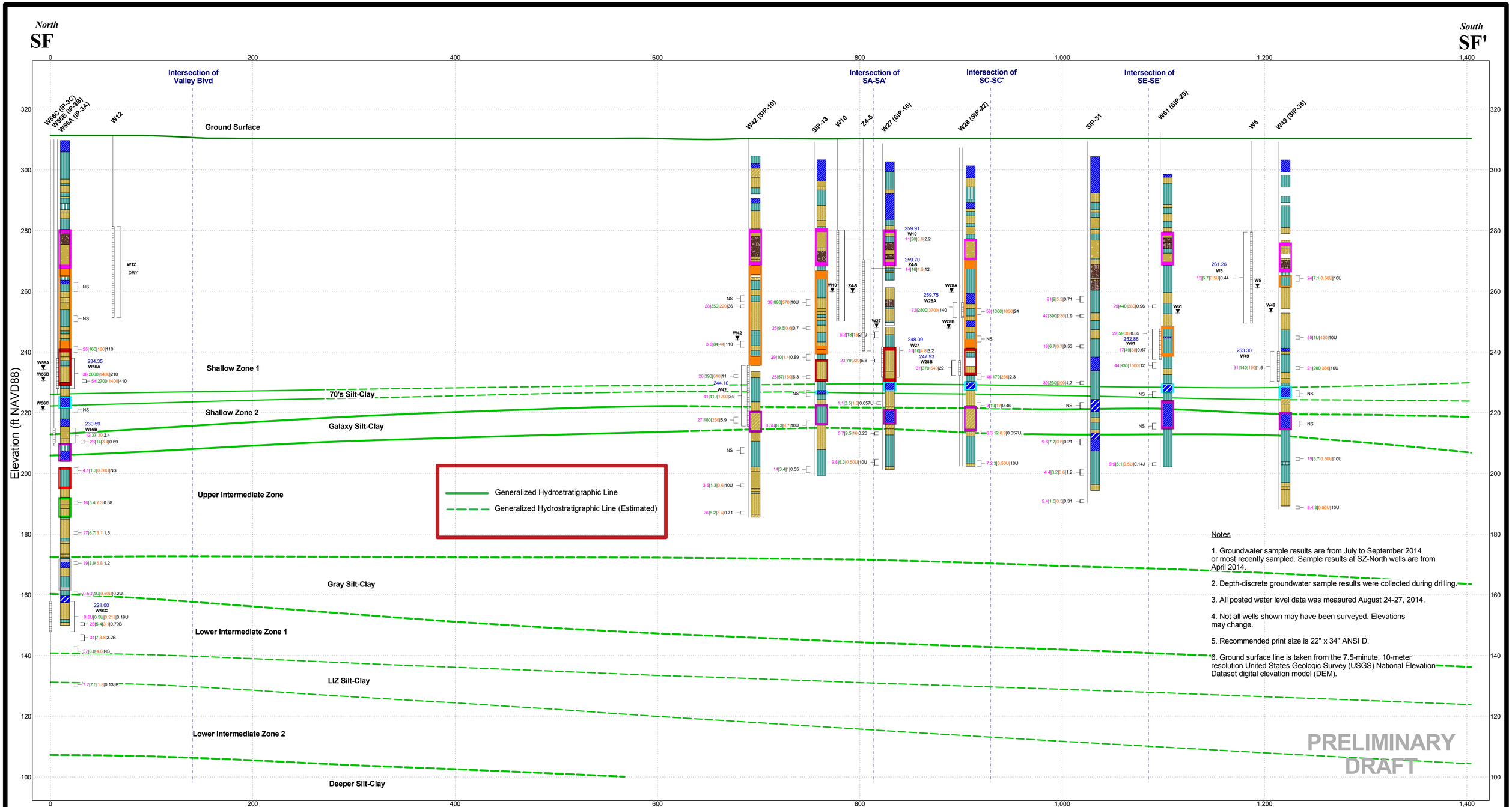
Horizontal Scale (feet): 0 – 45
Vertical Scale (feet): 0 – 15

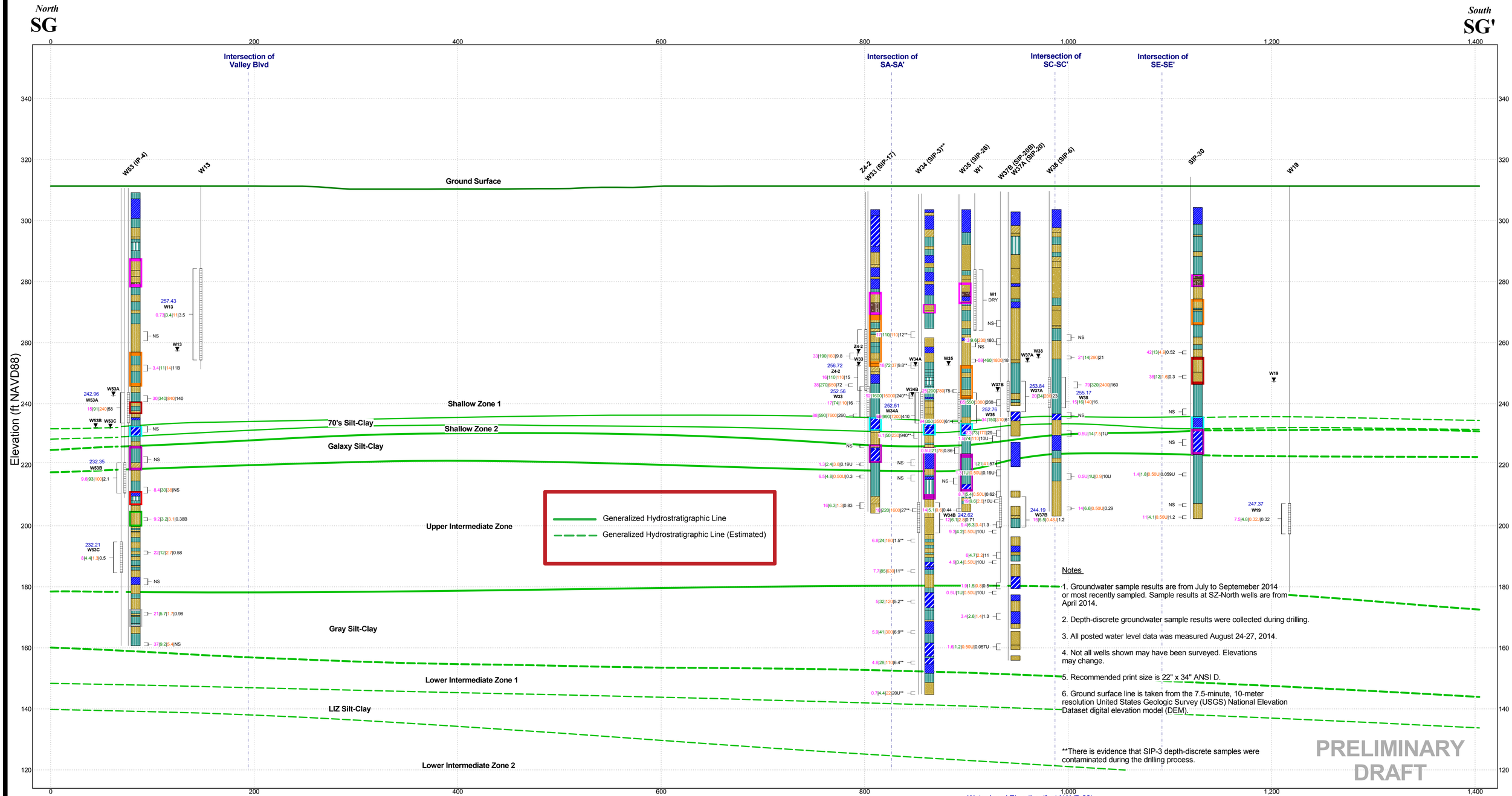
Vertical Exaggeration: 3x

Figure 18
SZ-South Cross Section SE-SE'
Puente Valley Operable Unit

October 31, 2014

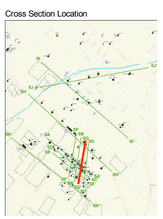
CDM Smith


North
SF
South
SF'
Intersection of Valley Blvd
Intersection of SA-SA'
Intersection of SC-SC'
Intersection of SE-SE'
W56C (IP-2C)
W56B (IP-3B)
W56A (IP-3A)
W12
W42 (SIP-10)
SIP-13
W10
Z4-5
W27 (SIP-16)
W28 (SIP-22)
SIP-31
W61 (SIP-29)
W5
W49 (SIP-35)
Ground Surface
Shallow Zone 1
70's Silt-Clay
Shallow Zone 2
Galaxy Silt-Clay
Upper Intermediate Zone
Gray Silt-Clay
Lower Intermediate Zone 1
LIZ Silt-Clay
Lower Intermediate Zone 2
Deeper Silt-Clay
Elevation (ft NAVD88)
Distance Along Baseline (ft)
Generalized Hydrostratigraphic Line
Generalized Hydrostratigraphic Line (Estimated)
Notes
1. Groundwater sample results are from July to September 2014 or most recently sampled. Sample results at SZ-North wells are from April 2014.
2. Depth-discrete groundwater sample results were collected during drilling.
3. All posted water level data was measured August 24-27, 2014.
4. Not all wells shown may have been surveyed. Elevations may change.
5. Recommended print size is 22" x 34" ANSI D.
6. Ground surface line is taken from the 7.5-minute, 10-meter resolution United States Geologic Survey (USGS) National Elevation Dataset digital elevation model (DEM).
PRELIMINARY DRAFT
Cross Section Location
N
USCS Well-graded Sand (SW)
USCS Poorly-graded Sand (SP)
USCS Silty Sand (SM)
USCS Clayey Sand (SC)
USCS Clayey Sand (SC-SM)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Well-graded Sand with Silt (SW-SM)
USCS Well-graded Sand with Clay (SW-SC)
USCS Silty Sand and Silty Clay (SM-SC)
USCS Well-graded Gravel (GW)
USCS Well-graded Gravel with Silt (GW-GM)
USCS Silty Gravel (GM)
USCS Elastic Silt (MH)
USCS Silt (ML)
USCS High Plasticity Clay (CH)
USCS Low Plasticity Clay (CL)
SAND AND GRAVEL
SM/ML WITH CALCIUM CARBONATE NODULES
RED SM
70S CLAY
GALAXY SILT-CLAY
DARK RED/BROWN SILT
SILT/SAND/GRAVEL
GRAY ML/CL
Water Level Elevation (feet NAVD 88)
Sample Interval
PCE (ug/L)|TCE (ug/L)|1,1-DCE (ug/L)|1,4-Dioxane (ug/L)
Well Screen
Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane
All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
B - analyte detected in blank
NS - not sampled
NR - no recovery
NM - not measured
Horizontal Scale (feet)
Vertical Scale (feet)
Vertical Exaggeration: 3x
Figure 19
SZ-South Cross Section SF-SF'
Puente Valley Operable Unit
October 31, 2014
CDM Smith



Distance Along Baseline (ft)

Cross Section Location



N

USCS Well-graded Sand (SW)
USCS Silty Sand (SM)
USCS Poorly-graded Sand (SP)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Silty Sand and Silty Clay (SM-SC)
USCS Clayey Sand (SC)
USCS Poorly-graded Sand with Clay (SP-SC)
USCS Poorly-graded Gravel with Silt (GP-GM)
USCS Clayey Gravel (GC)
USCS Silty Gravel (GM)
USCS Well-graded Gravel (GW)
USCS Well-graded Gravel with Silt (GW-GM)
USCS Silt (ML)
USCS Elastic Silt (MH)
USCS Low Plasticity Clay (CL)
USCS High Plasticity Clay (CH)
SAND AND GRAVEL
SM/ML WITH CALCIUM CARBONATE NODULES
RED SM
70S CLAY
GALAXY SILT-CLAY
GRAY ML/CL
DARK RED/BROWN SILT
SILT/SAND/GRAVEL

Water Level Elevation (feet NAVD 88)
Sample Interval
PCE (ug/L)|TCE (ug/L)|1,1-DCE (ug/L)|1,4-Dioxane (ug/L)
Well Screen

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
NS - not sampled
NR - no recovery
B - analyte detected in blank
NM - not measured

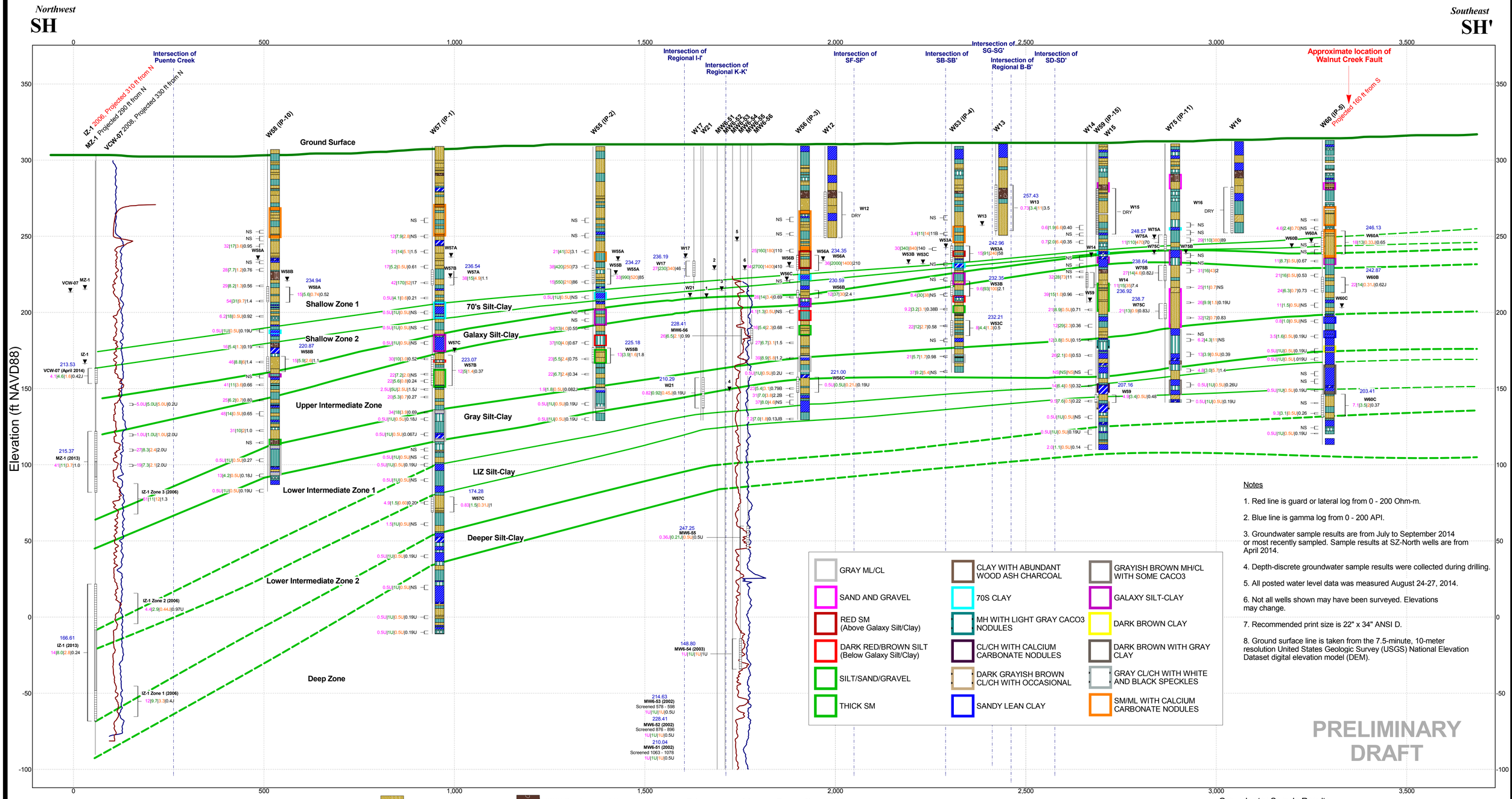
Horizontal Scale (feet) 0 45
Vertical Scale (feet) 0 15

Vertical Exaggeration: 3x

Figure 20
SZ-South Cross Section SG-SG'
Puente Valley Operable Unit

October 31, 2014

CDM Smith



Notes

1. Red line is guard or lateral log from 0 - 200 Ohm-m.
2. Blue line is gamma log from 0 - 200 API.
3. Groundwater sample results are from July to September 2014 or most recently sampled. Sample results at SZ-North wells are from April 2014.
4. Depth-discrete groundwater sample results were collected during drilling.
5. All posted water level data was measured August 24-27, 2014.
6. Not all wells shown may have been surveyed. Elevations may change.
7. Recommended print size is 22" x 34" ANSI D.
8. Ground surface line is taken from the 7.5-minute, 10-meter resolution United States Geologic Survey (USGS) National Elevation Dataset digital elevation model (DEM).

Cross Section Location

N

USCS Silty Sand (SM)
USCS Poorly-graded Sand (SP)
USCS Well-graded Sand (SW)
USCS Clayey Sand (SC)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Well-graded Sand with Silt (SW-SM)
USCS Silty Sand and Clay (SM-CL)
USCS Sand and Silt (SP-ML)
USCS Clayey Sand (SC-SM)
USCS Poorly-graded Gravel (GP)
USCS Well-graded Gravel with Silt (GW-GM)
USCS Silty to Sandy Gravel (GM-GP)
USCS Well-graded Gravel (GW)
USCS Clayey Gravel (GC)
USCS Elastic Silt (MH)
USCS Silt and Sand (ML-SP)
USCS Silt (ML)
USCS High Plasticity Clay (CH)
USCS Low Plasticity Silty Clay (CL-ML)
USCS Clay and Clayey Sand (CL-SC)
USCS Low Plasticity Clay (CL)

Generalized Hydrostratigraphic Line
Generalized Hydrostratigraphic Line (Estimated)

Water Level Elevation (feet NAVD 88)
Sample Interval
PCE (ug/L)|TCE (ug/L)|1,1-DCE (ug/L)|1,4-Dioxane (ug/L)
Well Screen

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
NS - not sampled
NR - no recovery
B - analyte detected in blank
NM - note measured

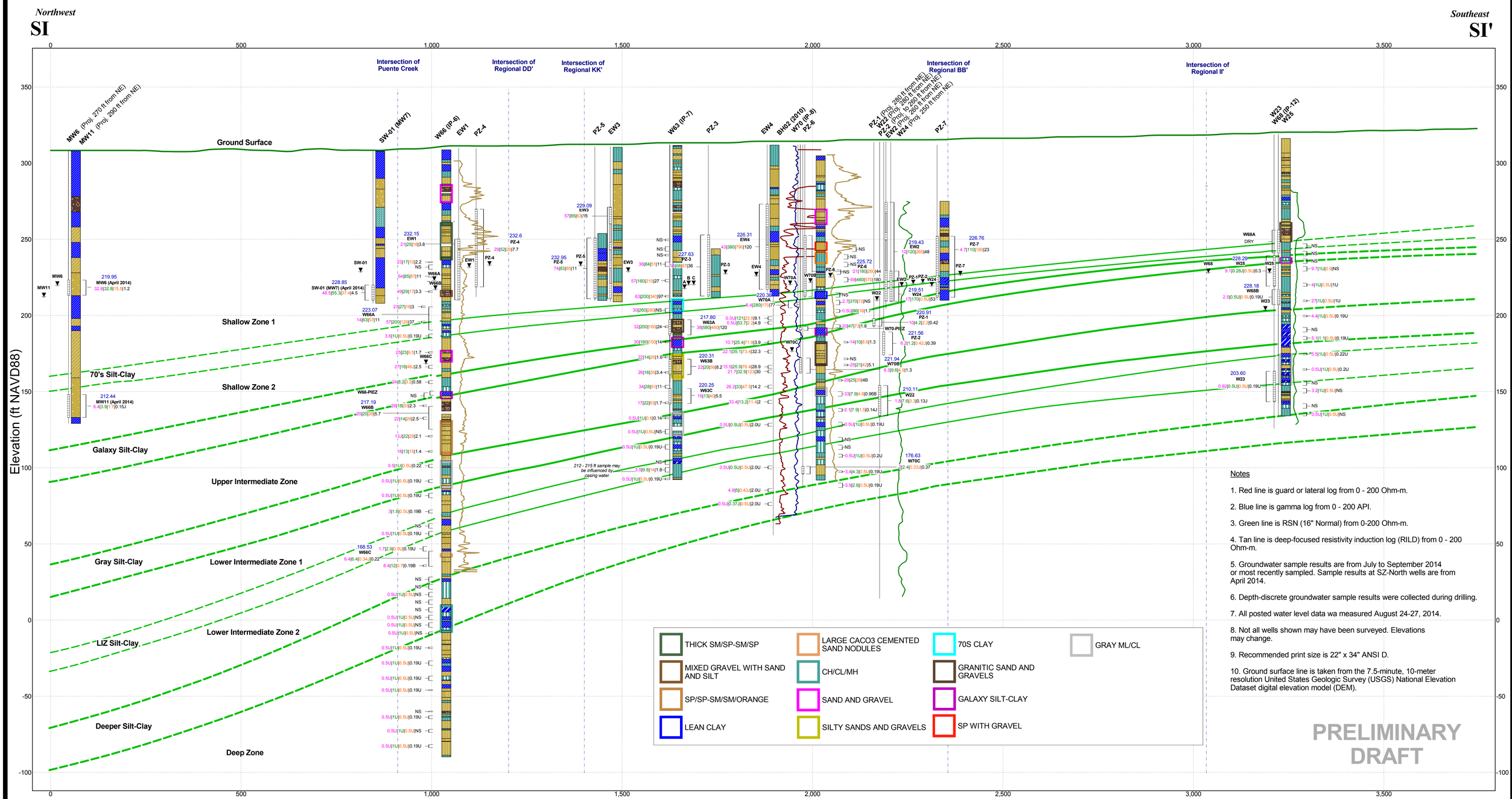
Horizontal Scale (feet) 0 120
Vertical Scale (feet) 0 30

Vertical Exaggeration: 4x

Figure 21
SZ-South Cross Section SH-SH'
(Valley Boulevard)
Puente Valley Operable Unit

October 31, 2014

CDM Smith



Cross Section Location

USCS Well-graded Sand (SW)
USCS Well-graded Sand with Silt (SW-SM)
USCS Poorly-graded Sand (SP)
USCS Silty Sand (SM)
USCS Clayey Sand (SC)
USCS Silty Sand and Silt (SM-ML)
USCS Sand and Gravel (SW-GW)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Silty Sand and Silty Clay (SM-SC)
USCS Silty Clay with Sand (SW-CL)
Asphalt (ASPHALT)
USCS Poorly-graded Gravel with Silt (GP-GM)
USCS Poorly-graded Gravel (GP)
USCS Well-graded Gravel (GW)
USCS Low Plasticity Clayey Silt (ML-CL)
USCS Silt (ML)
Sandy Silt and Silty Sand (ML-SM)
USCS Low Plasticity Silty Clay (CL-ML)
USCS Low Plasticity Clay (CL)
USCS Clay and Clayey Sand (CL-SC)

Generalized Hydrostratigraphic Line
Generalized Hydrostratigraphic Line (Estimated)

Water Level Elevation (feet NAVD 88)
Sample Interval
PCE (ug/L)|TCE (ug/L)|1,1-DCE (ug/L)|1,4-Dioxane (ug/L)
Well Screen

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory reporting limit shown to the left
J - estimated concentration
NS - not sampled
NR - no recovery
B - analyte detected in blank
NM - not measured

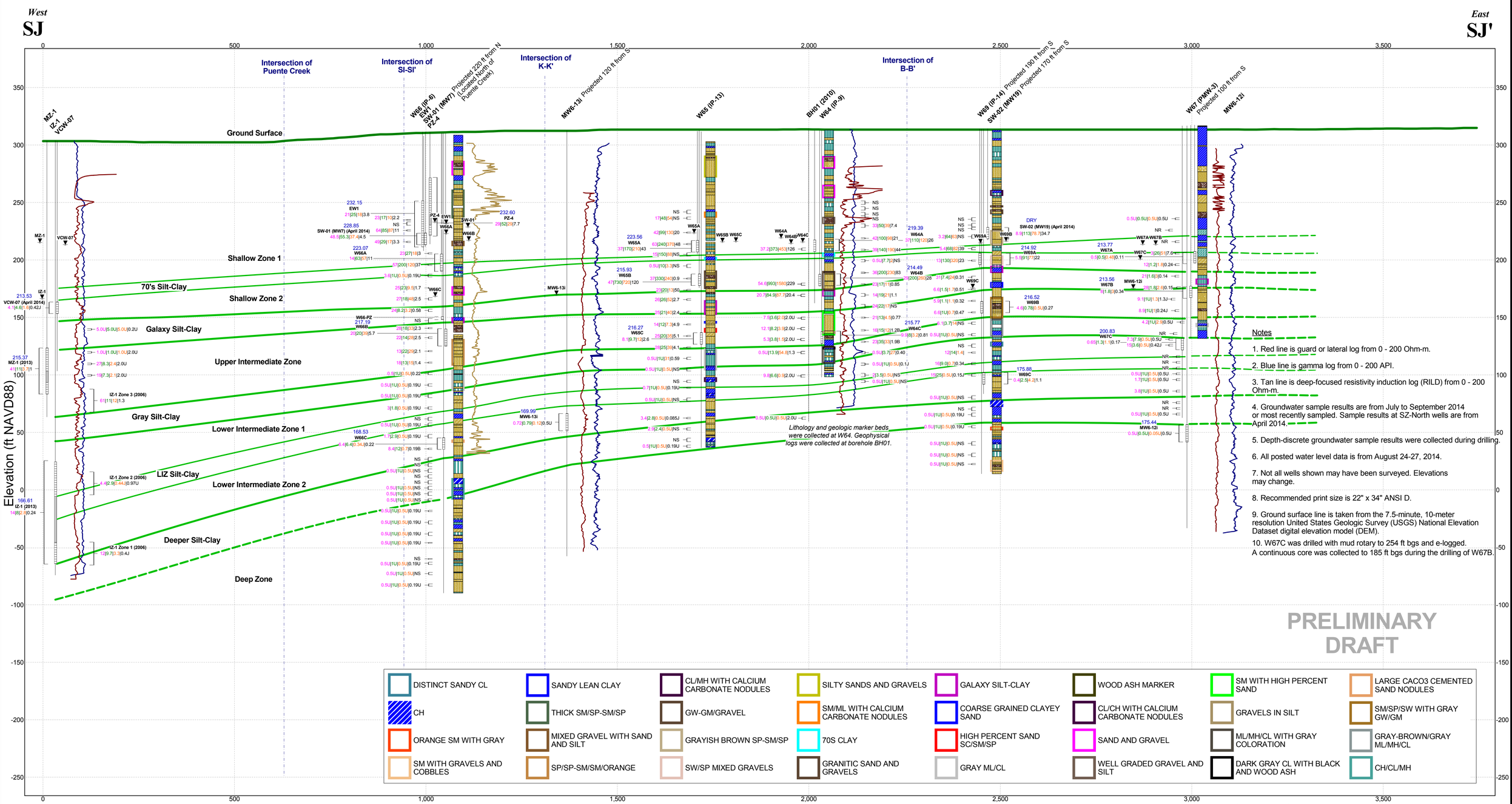
Horizontal Scale (feet) 0 120
Vertical Scale (feet) 0 30

Vertical Exaggeration: 4x

Figure 22
SZ-South Cross Section SI-SI'
(Nelson Avenue)
Puente Valley Operable Unit

November 7, 2014

CDM Smith



Notes

1. Red line is guard or lateral log from 0 - 200 Ohm-m.
2. Blue line is gamma log from 0 - 200 API.
3. Tan line is deep-focused resistivity induction log (RILD) from 0 - 200 Ohm-m.
4. Groundwater sample results are from July to September 2014 or most recently sampled. Sample results at SZ-North wells are from April 2014.
5. Depth-discrete groundwater sample results were collected during drilling.
6. All posted water level data is from August 24-27, 2014.
7. Not all wells shown may have been surveyed. Elevations may change.
8. Recommended print size is 22" x 34" ANSI D.
9. Ground surface line is taken from the 7.5-minute, 10-meter resolution United States Geologic Survey (USGS) National Elevation Dataset digital elevation model (DEM).
10. W67C was drilled with mud rotary to 254 ft bgs and e-logged. A continuous core was collected to 185 ft bgs during the drilling of W67B.

Cross Section Location

USCS Silty Sand (SM)
USCS Poorly-graded Gravel (GP)
USCS Well-graded Sand with Silt (SW-SM)
USCS High Plasticity Clay (CH)
USCS Clay and Clayey Sand (CL-SC)
USCS Silt (ML)
USCS Well-graded Sand (SW)
USCS Elastic Silt (MH)
USCS Well-graded Gravel with Silt (GW-GM)
USCS Sand and Gravel (SW-GW)
USCS Poorly-graded Sand (SP)
USCS Poorly-graded Sand with Silt (SP-SM)
USCS Clayey Sand (SC)
USCS Clayey Gravel (GC)
USCS Low Plasticity Clayey Silt (ML-CL)
USCS Low Plasticity Clay (CL)
USCS Silty Gravel (GM)
USCS Well-graded Gravel (GW)
Asphalt (ASPHALT)
USCS Silty Clay with Sand (SW-CL)

Generalized Hydrostratigraphic Line
Generalized Hydrostratigraphic Line (Estimated)

Water Level Elevation (feet NAVD 88)
Sample Interval
PCE (ug/L)|TCE (ug/L)|1,1-DCE (ug/L)|1,4-Dioxane (ug/L)
Well Screen

Groundwater Sample Results
Tetrachloroethene (PCE)
Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)
1,4-Dioxane

All results in micrograms per liter (ug/L)
U - not detected above laboratory detection limit shown to the left
J - estimated concentration
NS - not sampled
NR - no recovey
B - analyte detected in blank
NM - not measured

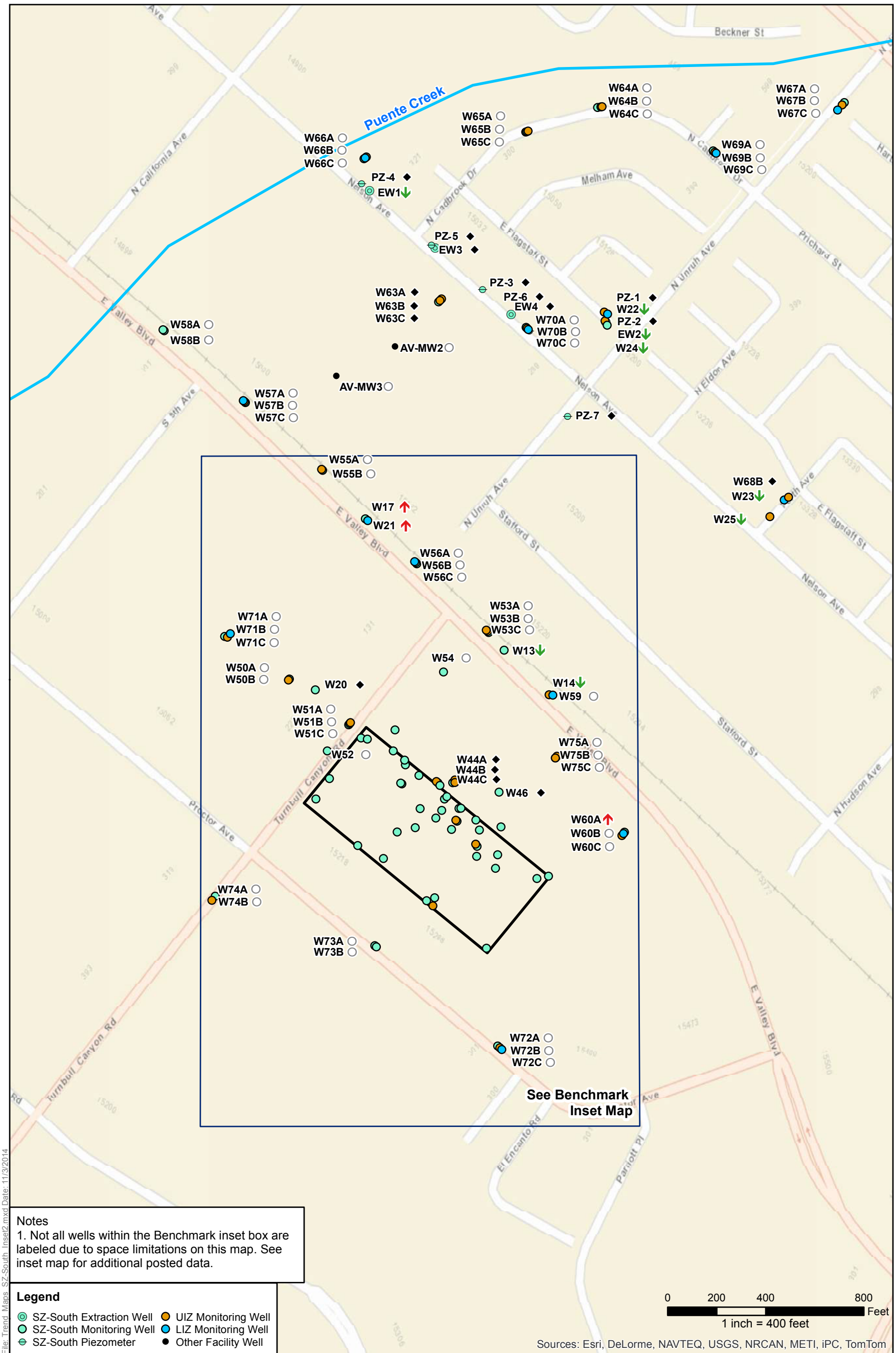
Horizontal Scale (feet) 0 120
Vertical Scale (feet) 0 40

Vertical Exaggeration: 3x

Figure 23
SZ-South Cross Section SJ-SJ'
(Cadbrook Drive)
Puente Valley Operable Unit

October 31, 2014

CDM Smith



Notes
1. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

Legend

- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- UIZ Monitoring Well
- LIZ Monitoring Well
- Other Facility Well

Puente Creek
Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

CDM Smith

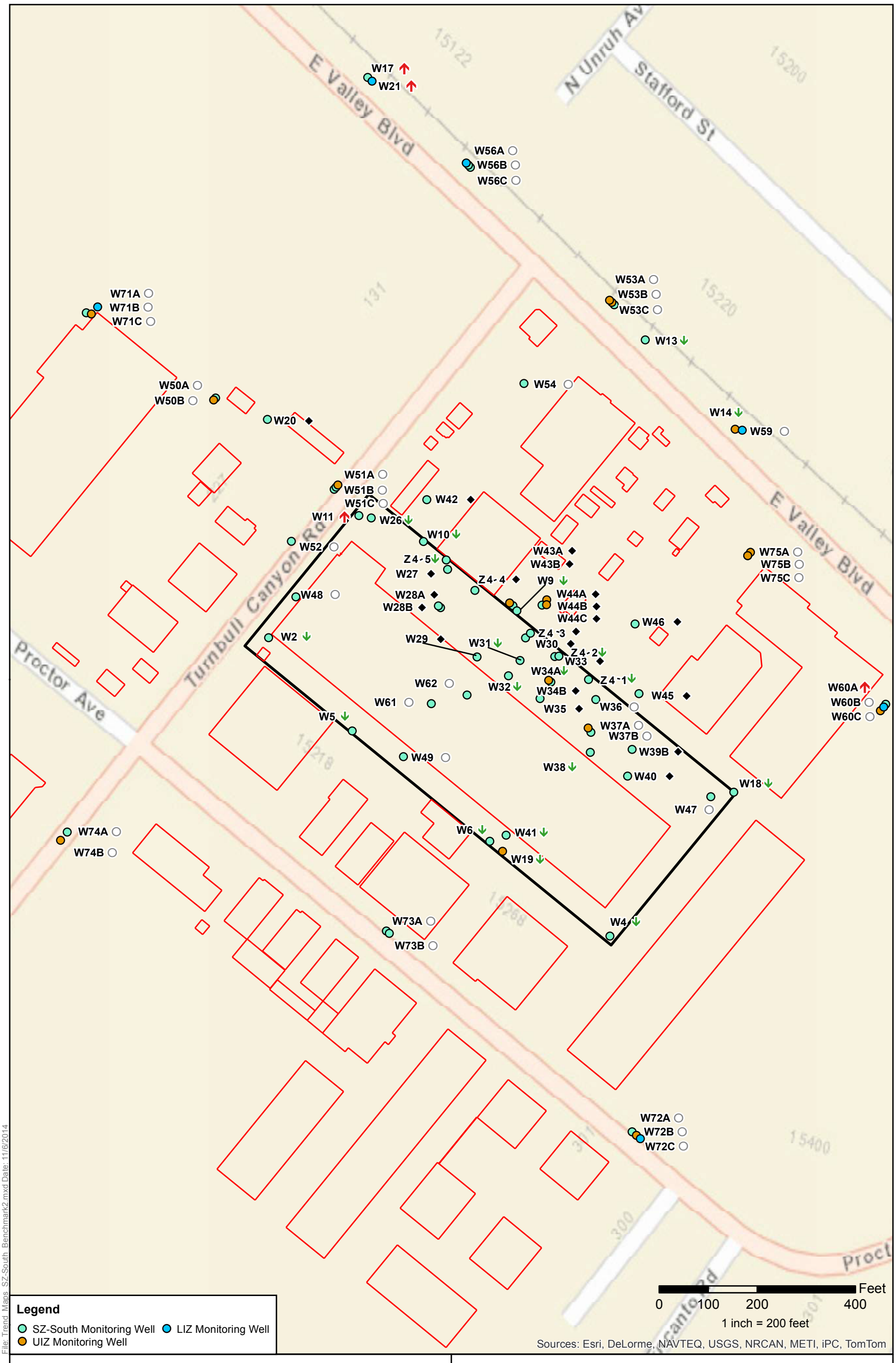
Figure 24-1
PCE Temporal Trend Distribution
SZ-South
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/3/2014

N

File: Trend_Maps_SZ-South_Inset2.mxd Date: 11/3/2014



Legend

- SZ-South Monitoring Well
- LIZ Monitoring Well
- UIZ Monitoring Well

Building Outline

Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

CDM Smith

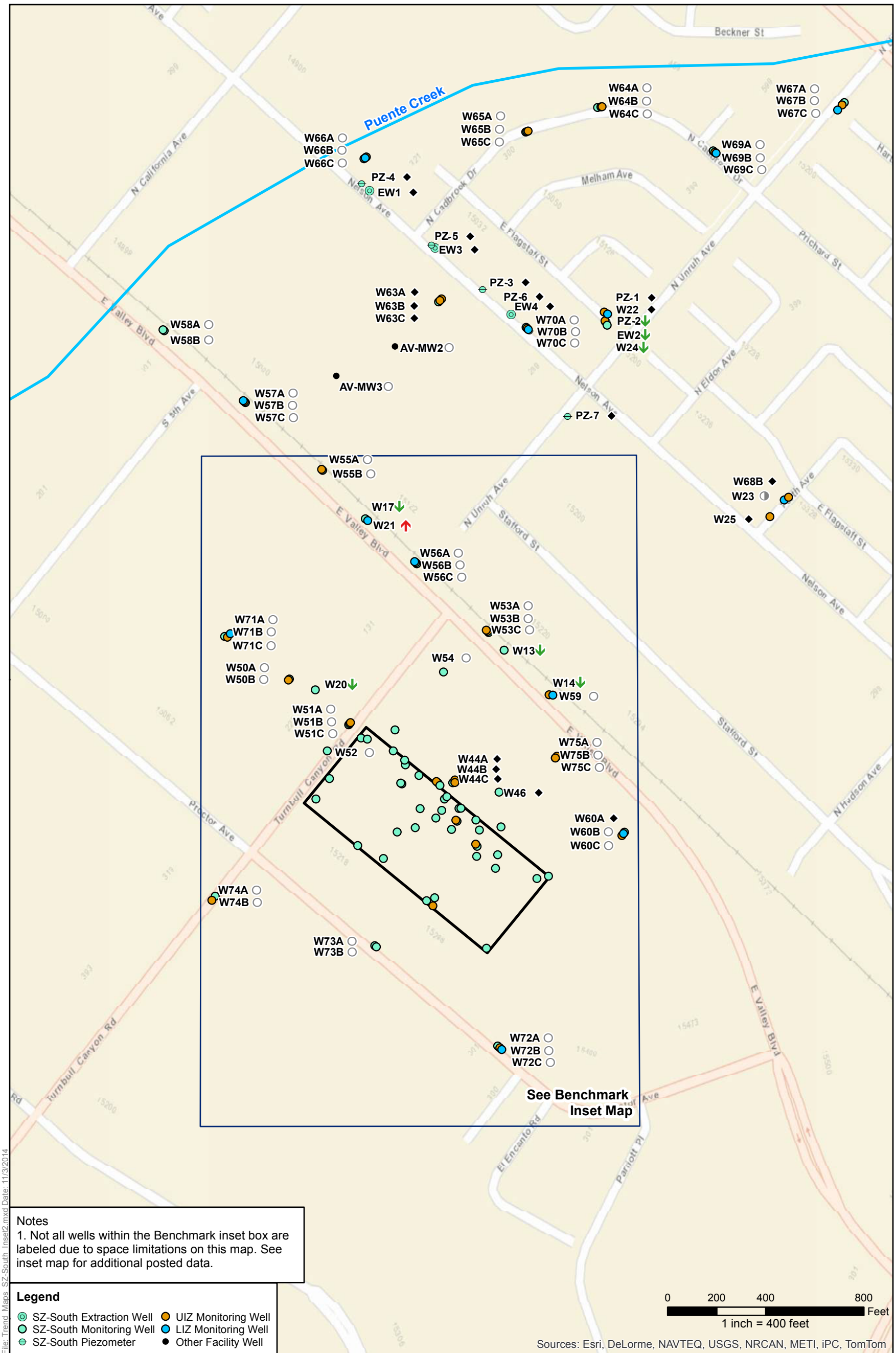
Figure 24-2
PCE Temporal Trend Distribution
SZ-South Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N

File: Trend_Maps_SZ-South_Benchmark2.mxd Date: 11/6/2014



Puente Creek

Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

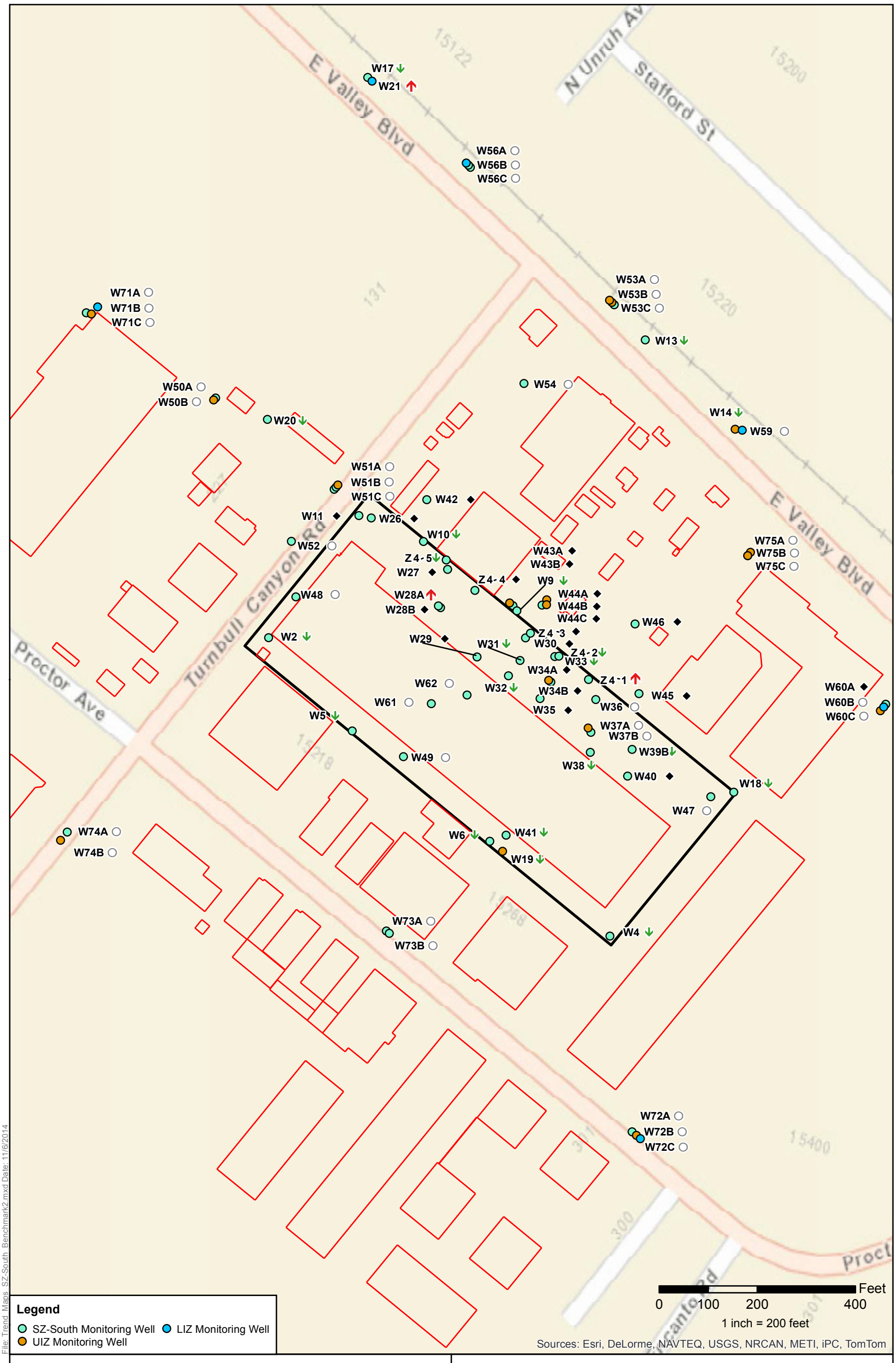
CDM Smith

Figure 25-1
TCE Temporal Trend Distribution
SZ-South
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/3/2014

N



File: Trend Maps SZ-South Benchmark2.mxd Date: 11/6/2014

Building Outline

Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

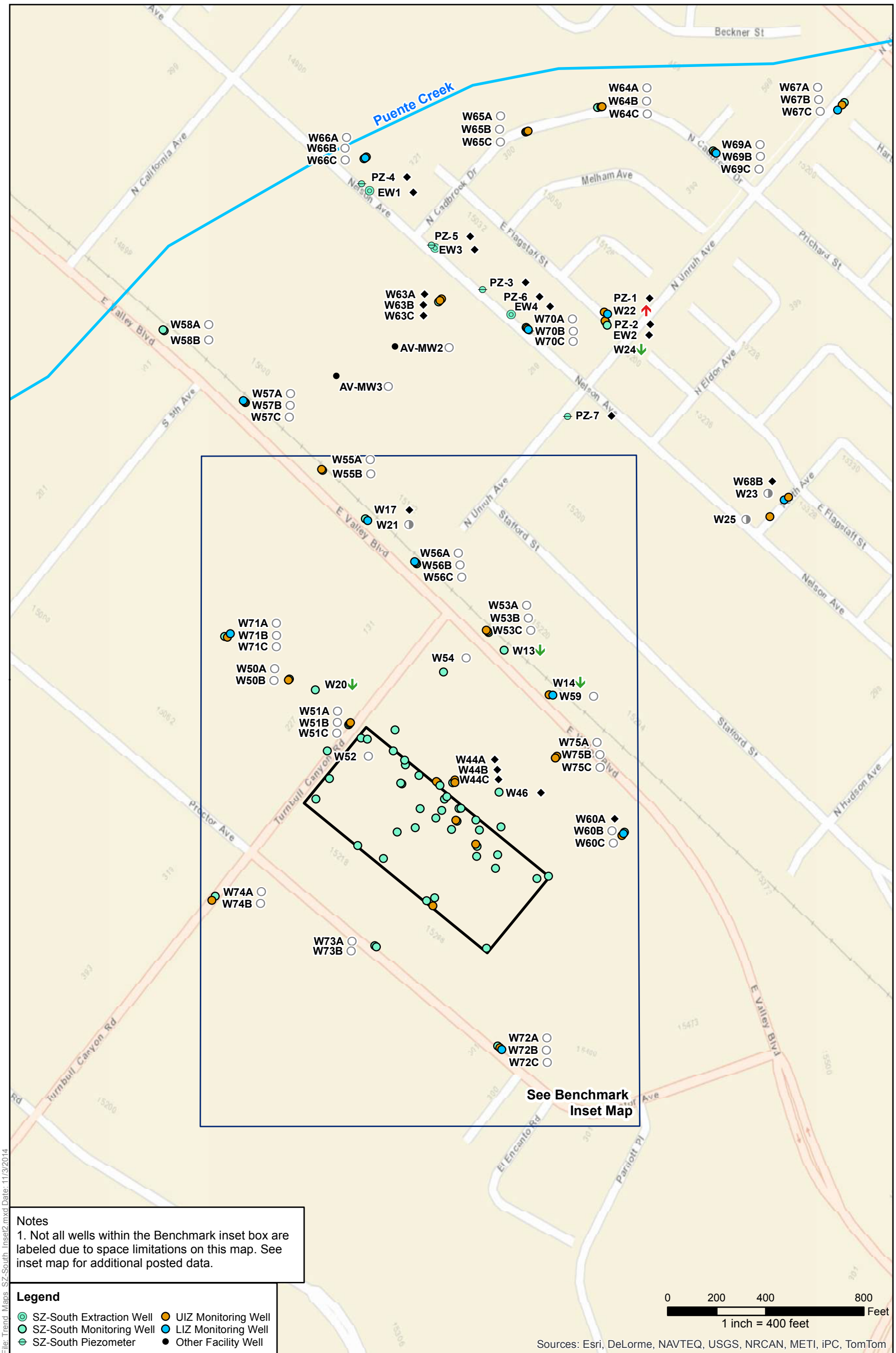
CDM Smith

Figure 25-2
TCE Temporal Trend Distribution
SZ-South Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N



Notes
1. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

Legend

- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- UIZ Monitoring Well
- LIZ Monitoring Well
- Other Facility Well

Puente Creek
Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

CDM Smith

Figure 26-1
1,1-DCE Temporal Trend Distribution
SZ-South
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/3/2014

N

File: Trend_Maps_SZ-South_Inset2.mxd Date: 11/3/2014

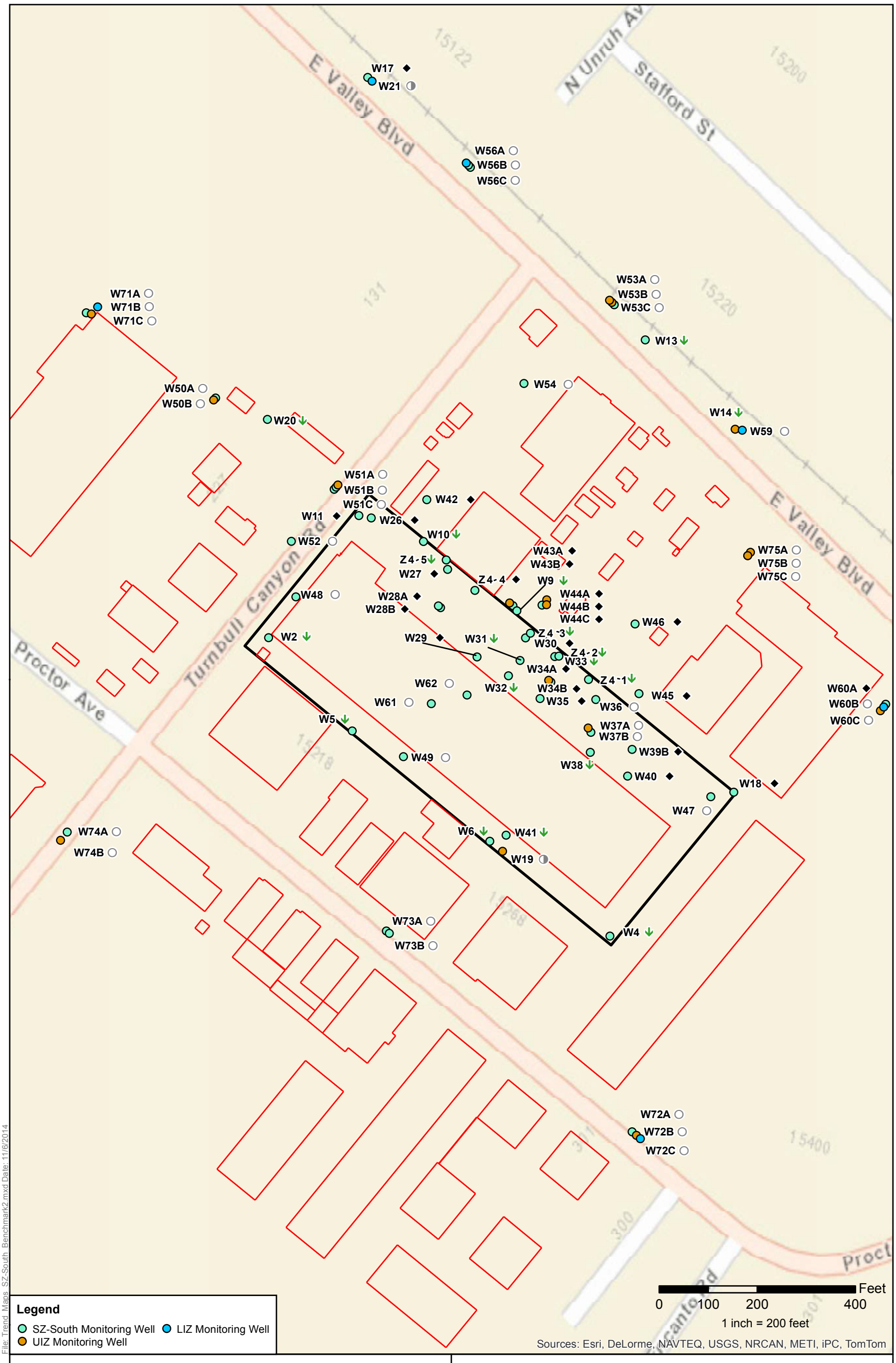
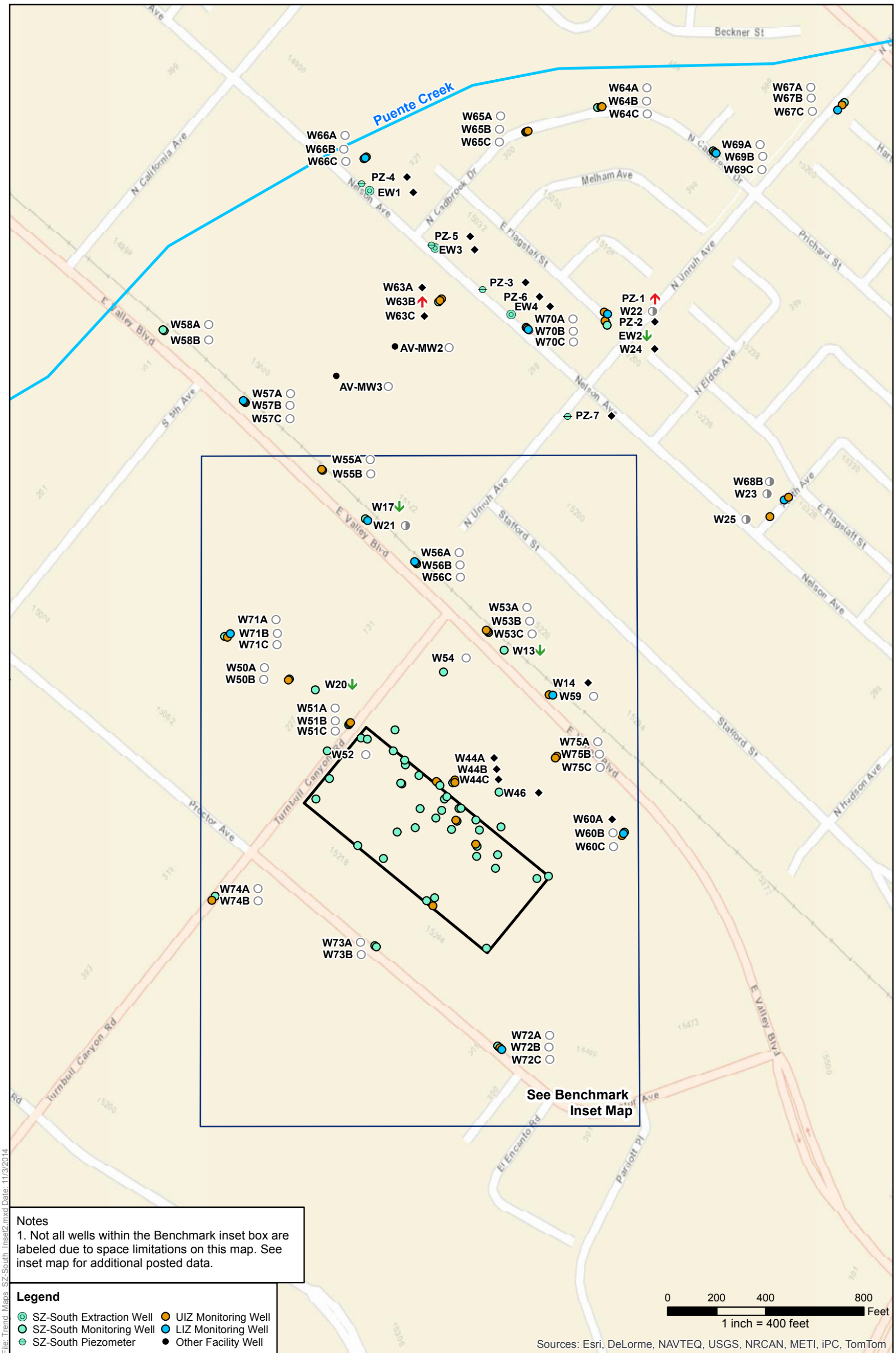


Figure 26-2
1,1-DCE Temporal Trend Distribution
SZ-South Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014



Notes
1. Not all wells within the Benchmark inset box are labeled due to space limitations on this map. See inset map for additional posted data.

Legend

- SZ-South Extraction Well
- SZ-South Monitoring Well
- SZ-South Piezometer
- UIZ Monitoring Well
- LIZ Monitoring Well
- Other Facility Well

0 200 400 800 Feet
1 inch = 400 feet

Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

File: Trend_Maps_SZ-South_Inset2.mxd Date: 11/3/2014

Puente Creek
Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

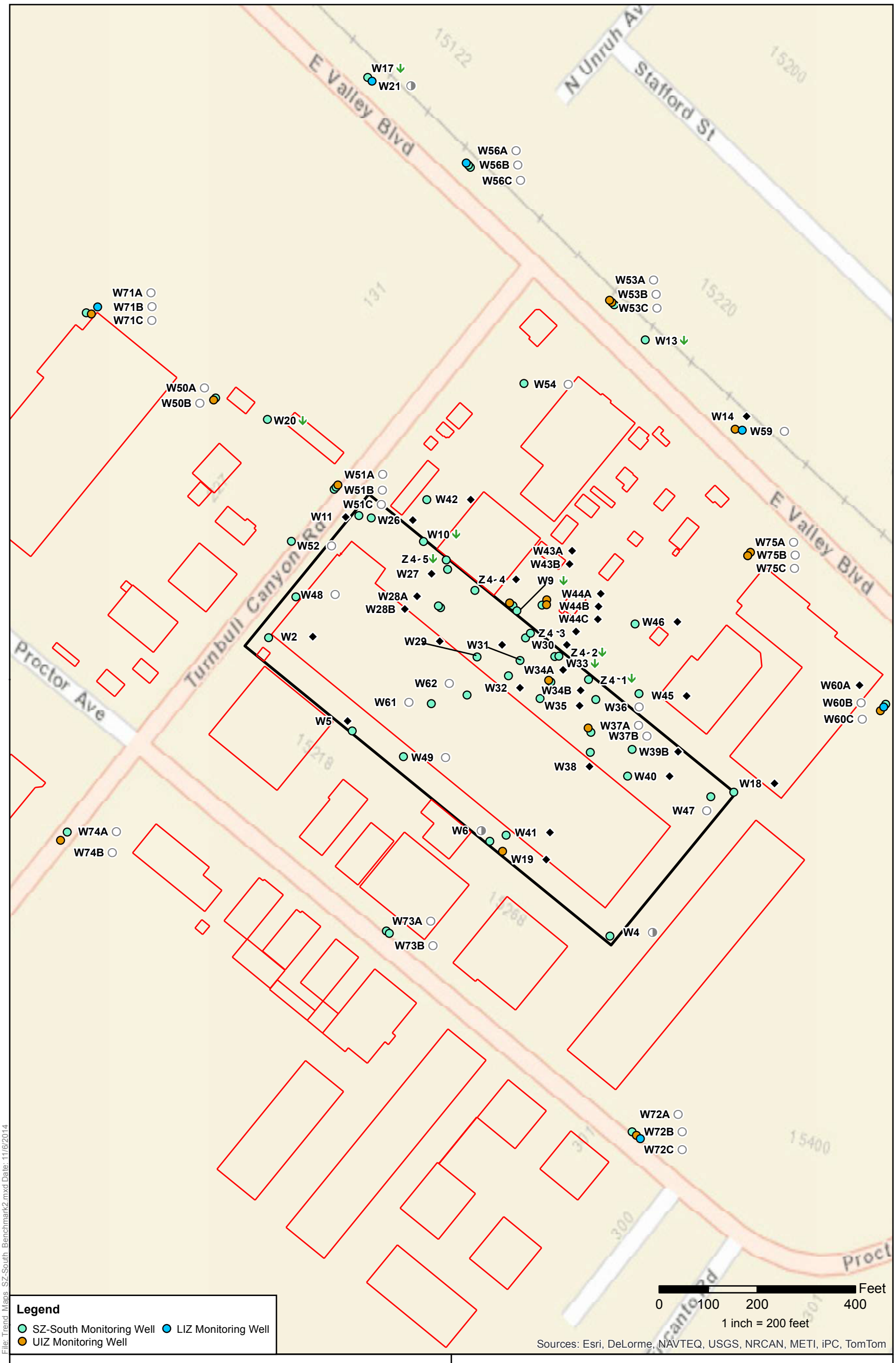
CDM Smith

Figure 27-1
1,4-Dioxane Temporal Trend Distribution
SZ-South
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/3/2014

N



Legend

- SZ-South Monitoring Well
- LIZ Monitoring Well
- UIZ Monitoring Well

Building Outline

Former TRW Benchmark Technology Facility

Mann-Kendall Trend Analysis

- Increasing Trend
- Decreasing Trend
- No Significant Trend
- Data Insufficient to Test for Trend
- 100% ND (No Detections Available)
- >50% ND (Less than half of the data are detections)

CDM Smith

Figure 27-2
1,4-Dioxane Temporal Trend Distribution
SZ-South Benchmark Inset
2014 Annual Comprehensive Event

Puente Valley Operable Unit

11/6/2014

N

File: Trend_Maps_SZ-South_Benchmark2.mxd Date: 11/6/2014