

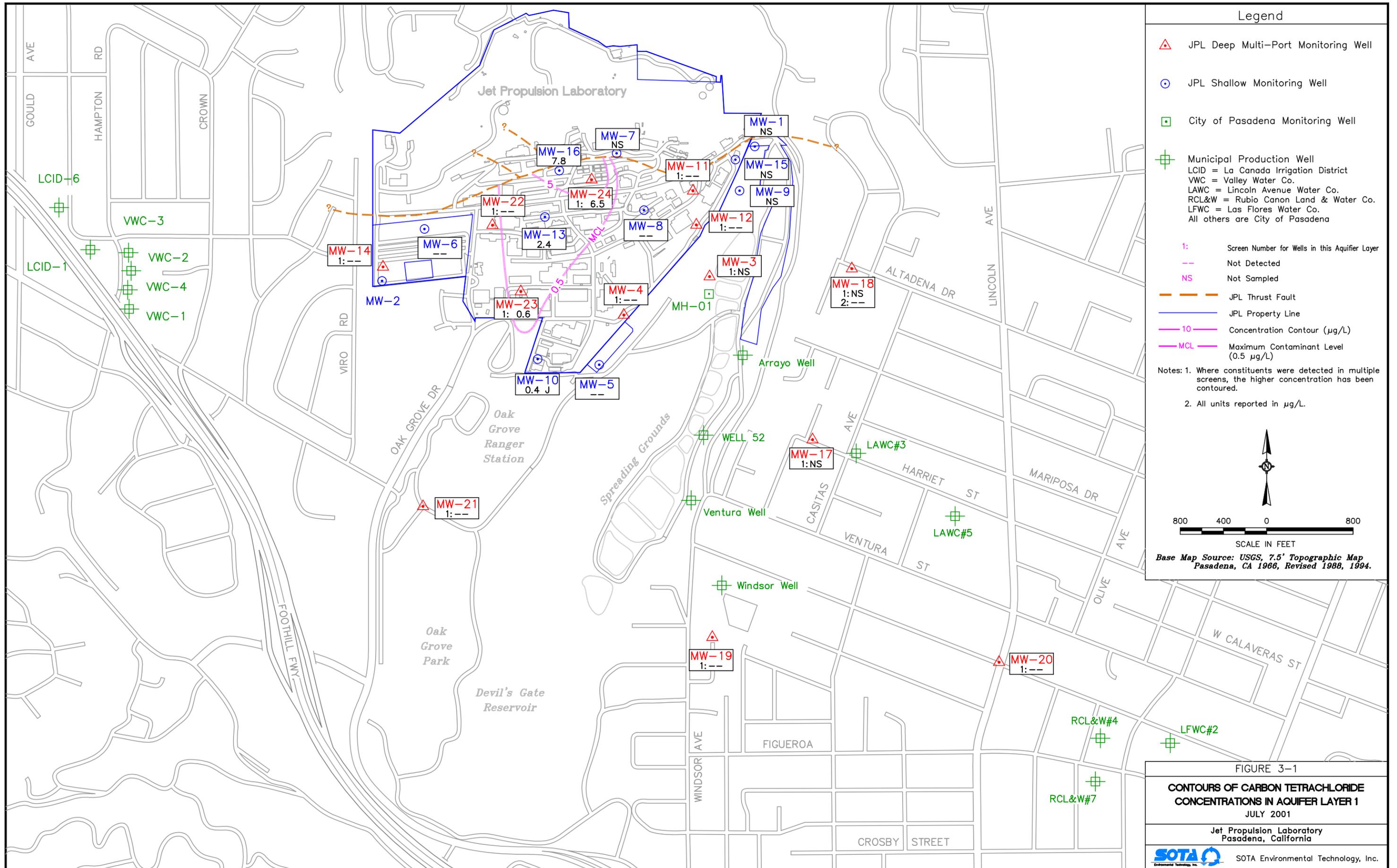
Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWG = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena


 800 400 0 800
 SCALE IN FEET
 Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 1-1
LOCATIONS OF JPL GROUNDWATER MONITORING WELLS AND NEARBY MUNICIPAL PRODUCTION WELLS
 Jet Propulsion Laboratory
 Pasadena, California

 SOTA Environmental Technology, Inc.

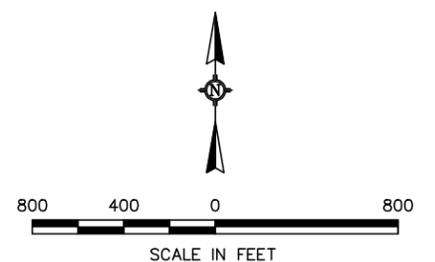


Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

- 1: Screen Number for Wells in this Aquifer Layer
- Not Detected
- NS Not Sampled
- JPL Thrust Fault
- JPL Property Line
- 10 Concentration Contour (µg/L)
- MCL Maximum Contaminant Level (0.5 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

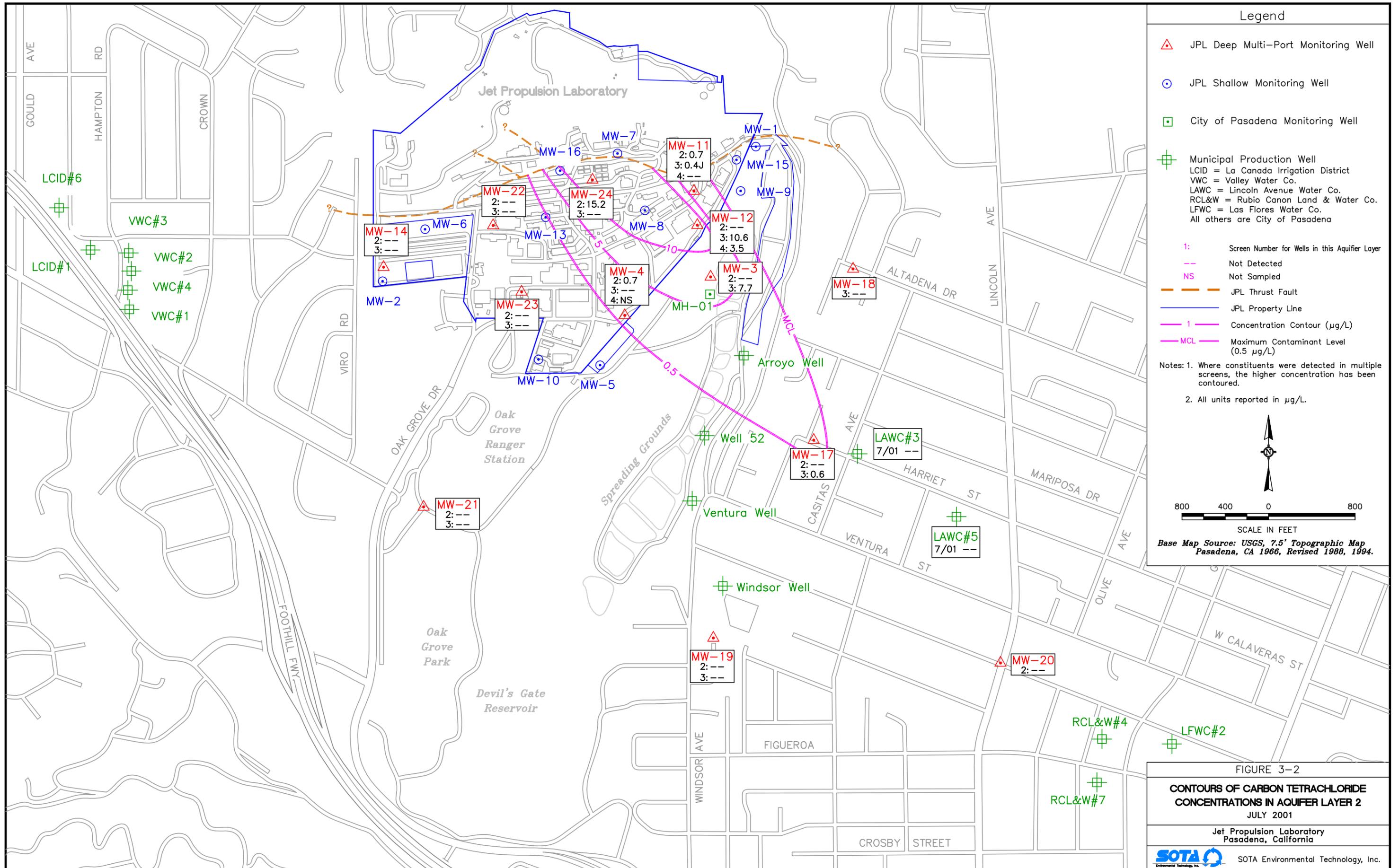


Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-1
**CONTOURS OF CARBON TETRACHLORIDE
 CONCENTRATIONS IN AQUIFER LAYER 1**
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

1 Concentration Contour (µg/L)

MCL Maximum Contaminant Level (0.5 µg/L)

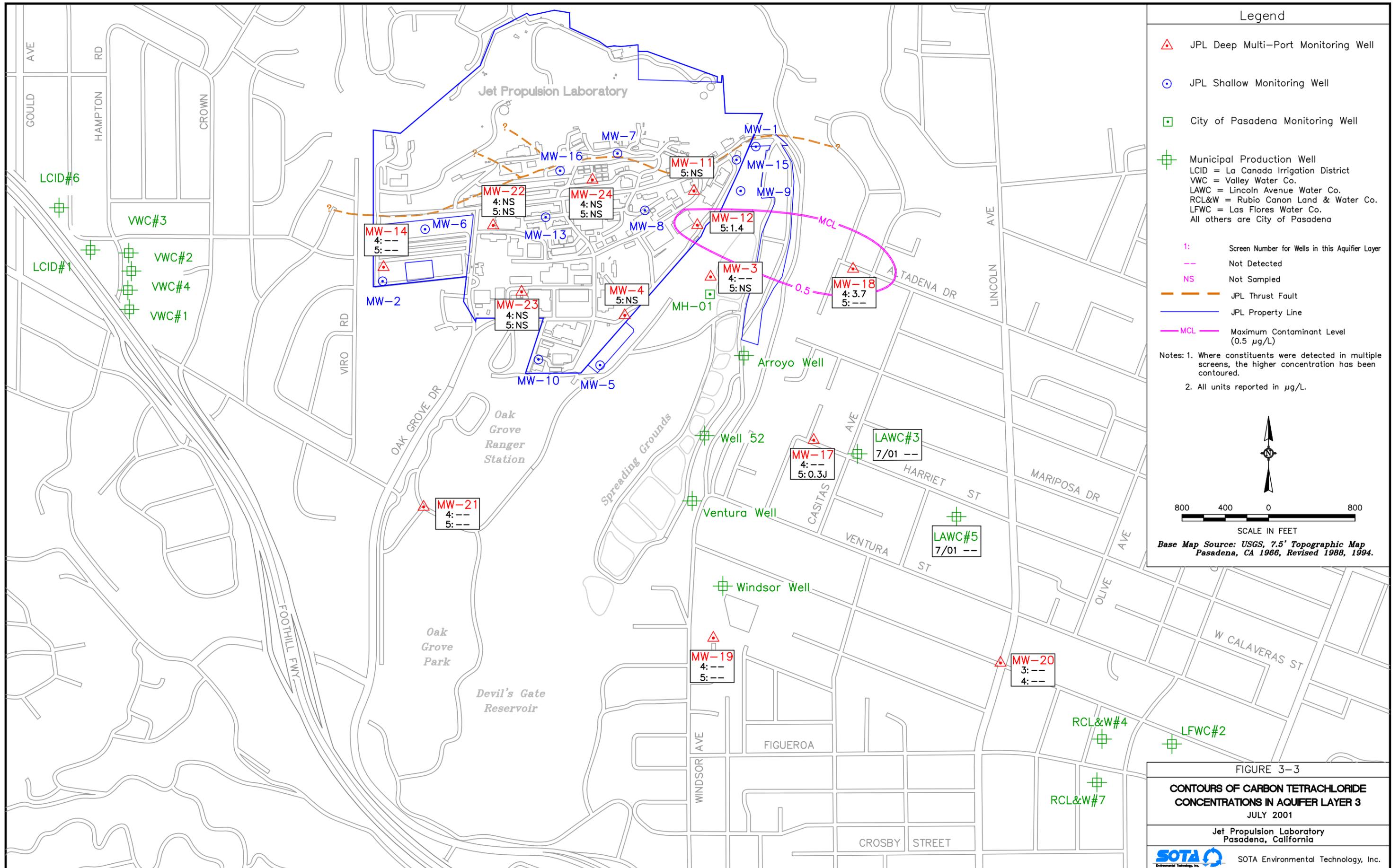
Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800
 SCALE IN FEET
 Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-2
**CONTOURS OF CARBON TETRACHLORIDE
 CONCENTRATIONS IN AQUIFER LAYER 2**
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWAC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

MCL Maximum Contaminant Level (0.5 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800

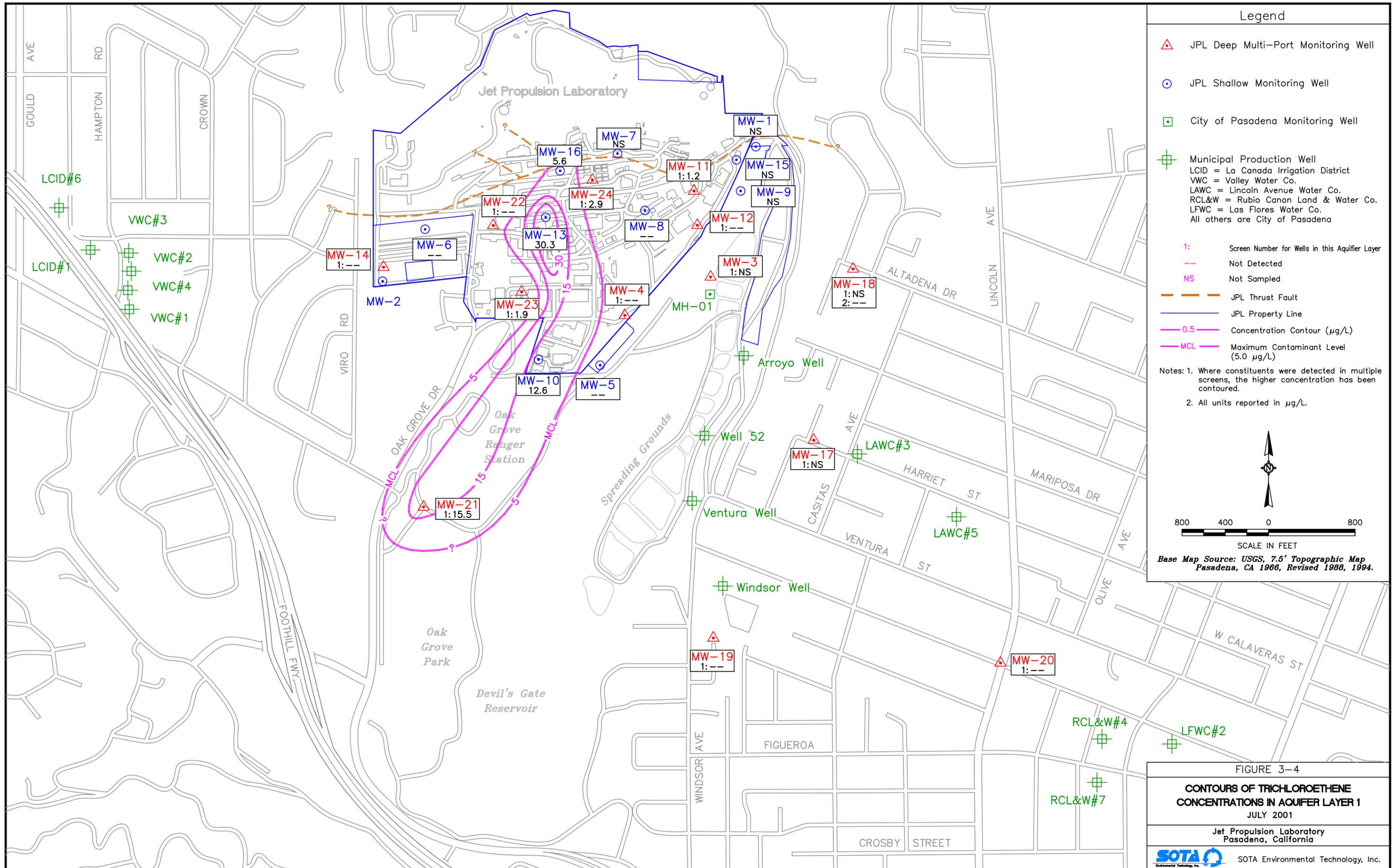
SCALE IN FEET

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-3
**CONTOURS OF CARBON TETRACHLORIDE
 CONCENTRATIONS IN AQUIFER LAYER 3**
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWLC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled

--- JPL Thrust Fault
 --- JPL Property Line
 0.5 Concentration Contour (µg/L)
 MCL Maximum Contaminant Level (5.0 µg/L)

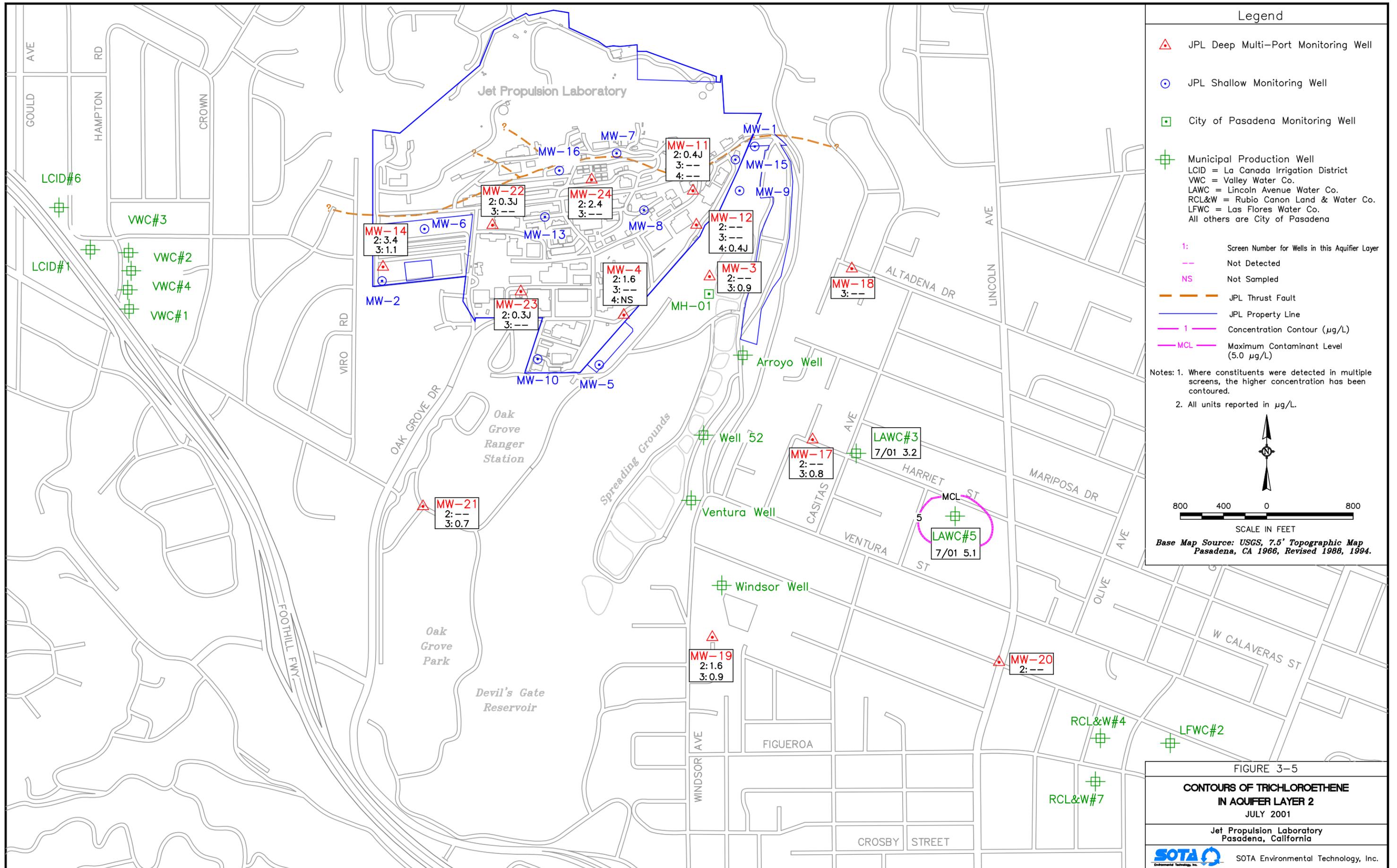
Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



800 400 0 800
SCALE IN FEET

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

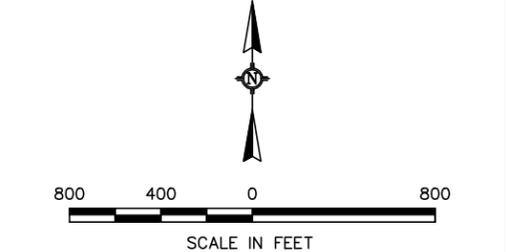
FIGURE 3-4
**CONTOURS OF TRICHLOROETHENE
 CONCENTRATIONS IN AQUIFER LAYER 1
 JULY 2001**
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

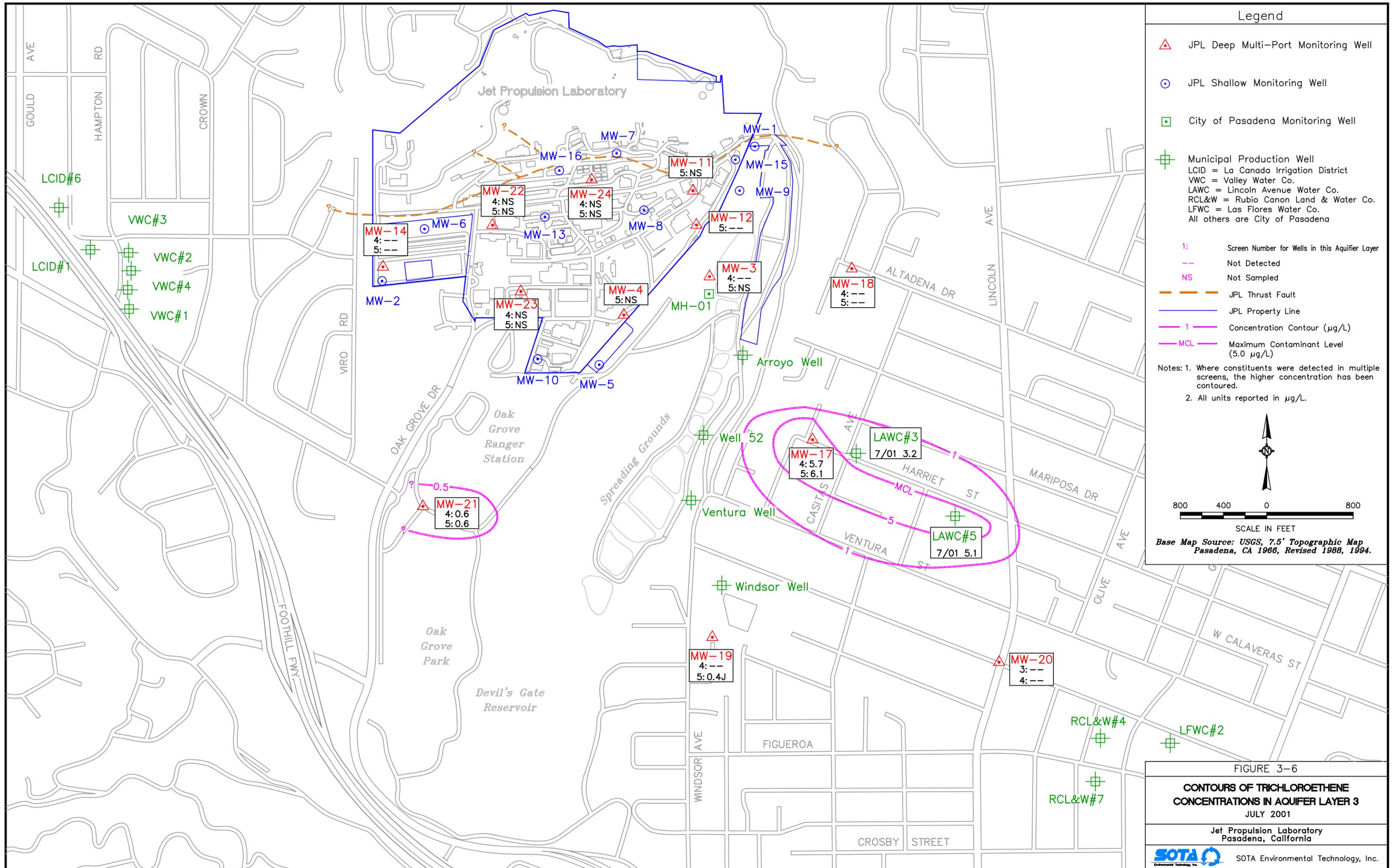
- ▲ JPL Deep Multi-Port Monitoring Well
 - JPL Shallow Monitoring Well
 - City of Pasadena Monitoring Well
 - ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena
- 1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled
- JPL Thrust Fault
 - JPL Property Line
 - 1 Concentration Contour (µg/L)
 - MCL Maximum Contaminant Level (5.0 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-5
**CONTOURS OF TRICHLOROETHENE
 IN AQUIFER LAYER 2
 JULY 2001**
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAW = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled

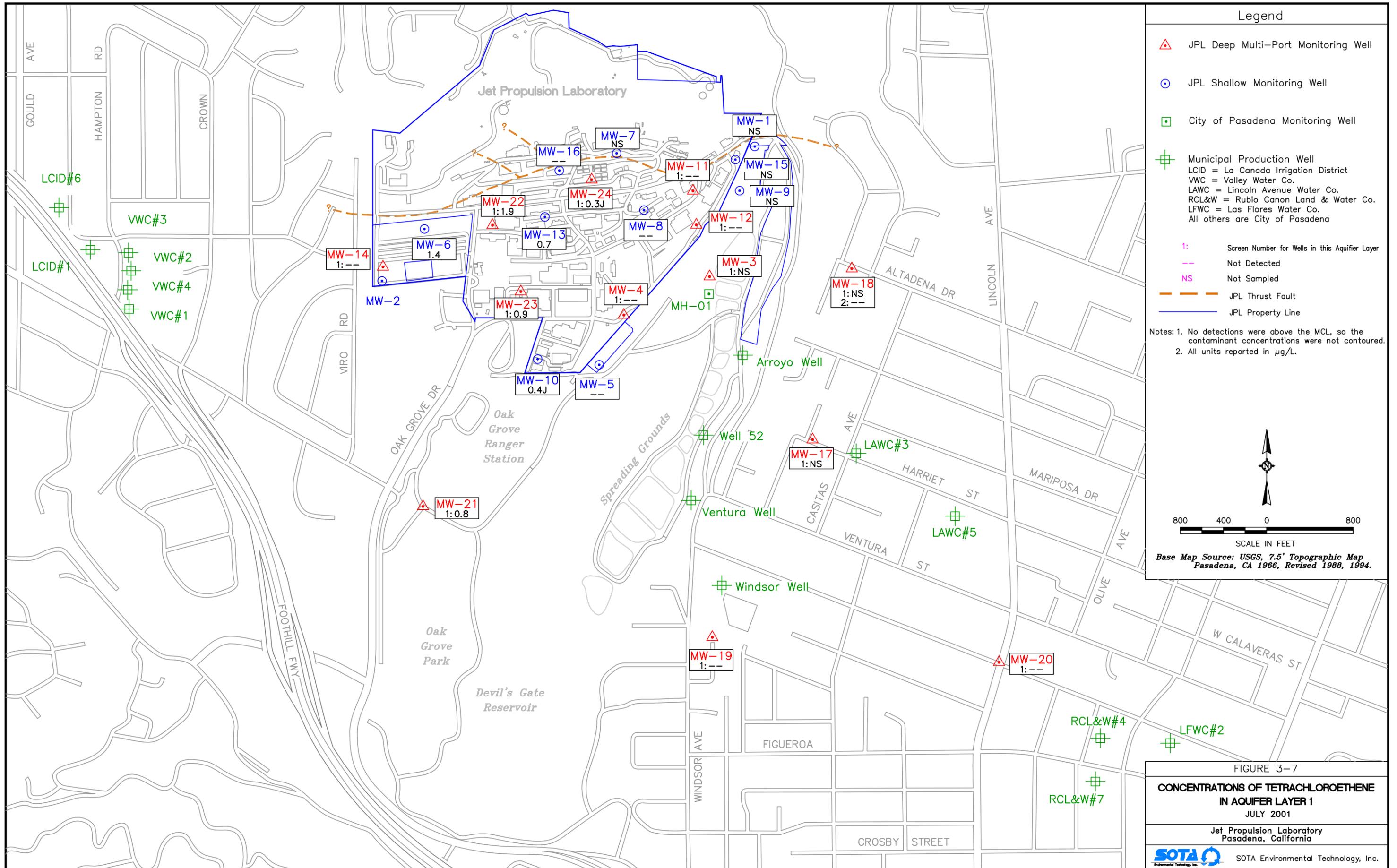
— JPL Thrust Fault
— JPL Property Line
— 1 Concentration Contour (µg/L)
— MCL Maximum Contaminant Level (5.0 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800
SCALE IN FEET

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

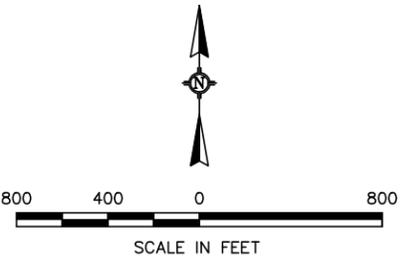
FIGURE 3-6
CONTOURS OF TRICHLOROETHENE CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

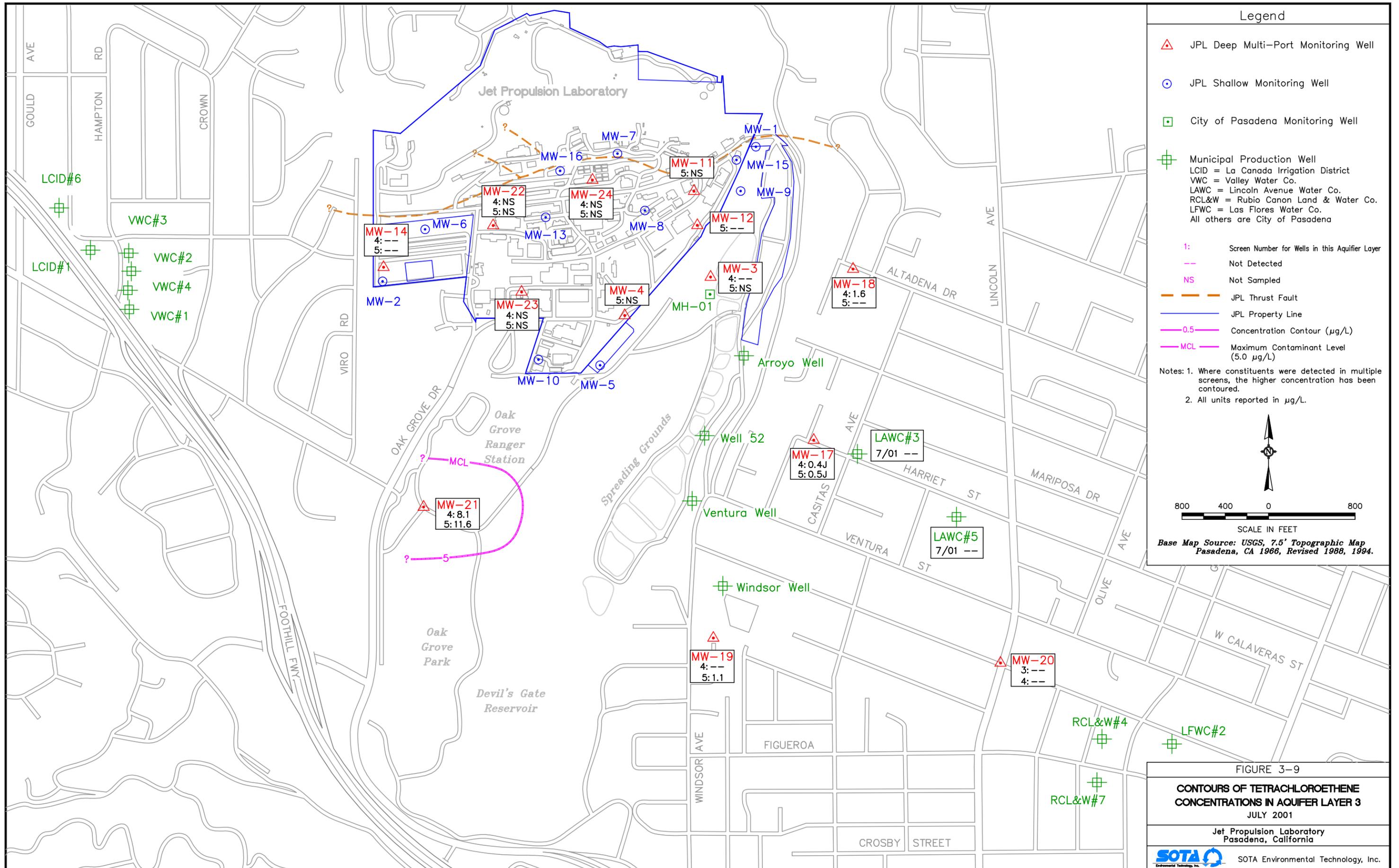
- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena
- 1: Screen Number for Wells in this Aquifer Layer
- Not Detected
- NS Not Sampled
- JPL Thrust Fault
- JPL Property Line

Notes: 1. No detections were above the MCL, so the contaminant concentrations were not contoured.
 2. All units reported in $\mu\text{g/L}$.



Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-7
**CONCENTRATIONS OF TETRACHLOROETHENE
 IN AQUIFER LAYER 1**
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

0.5 Concentration Contour (µg/L)

MCL Maximum Contaminant Level (5.0 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800

SCALE IN FEET

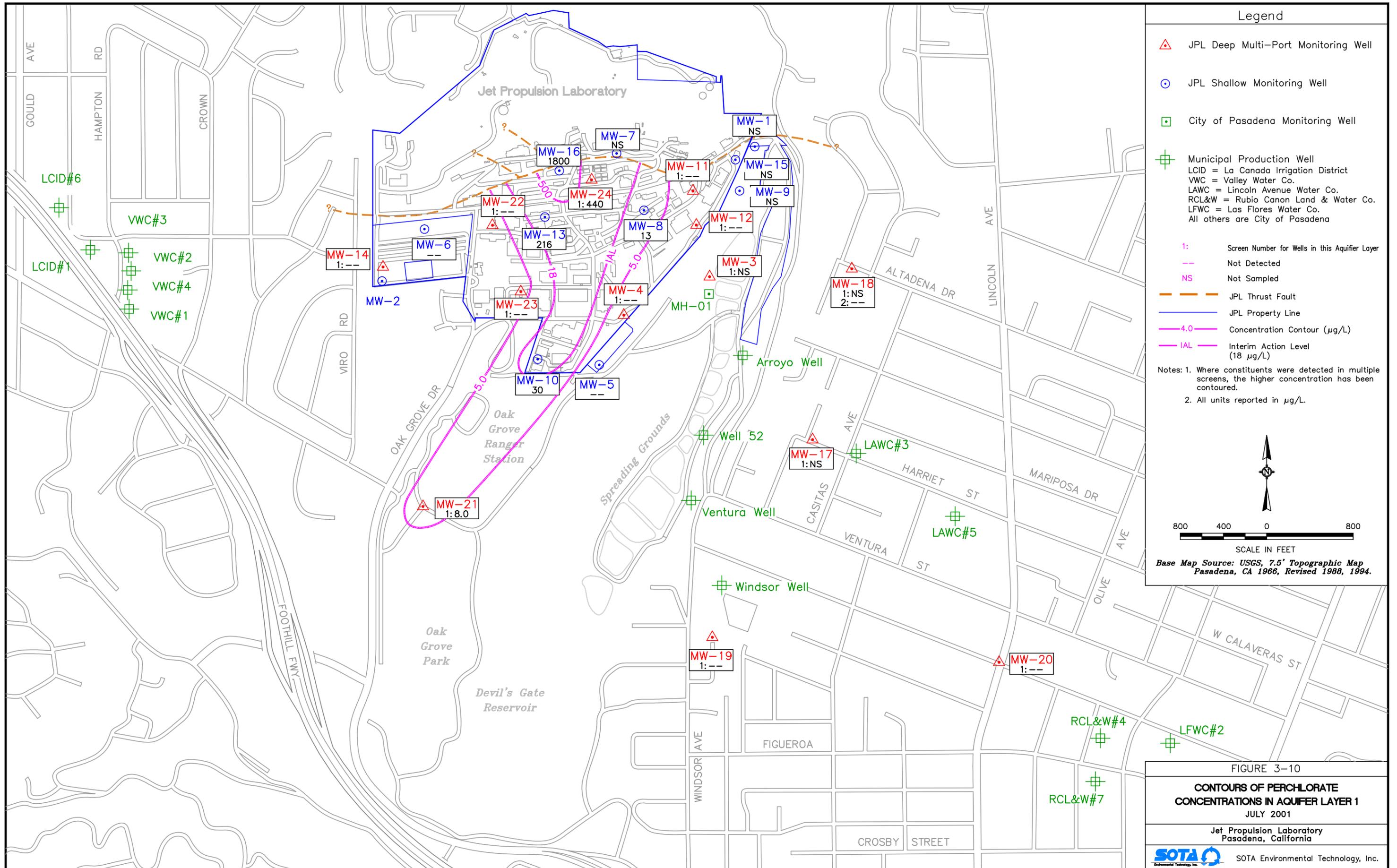
Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

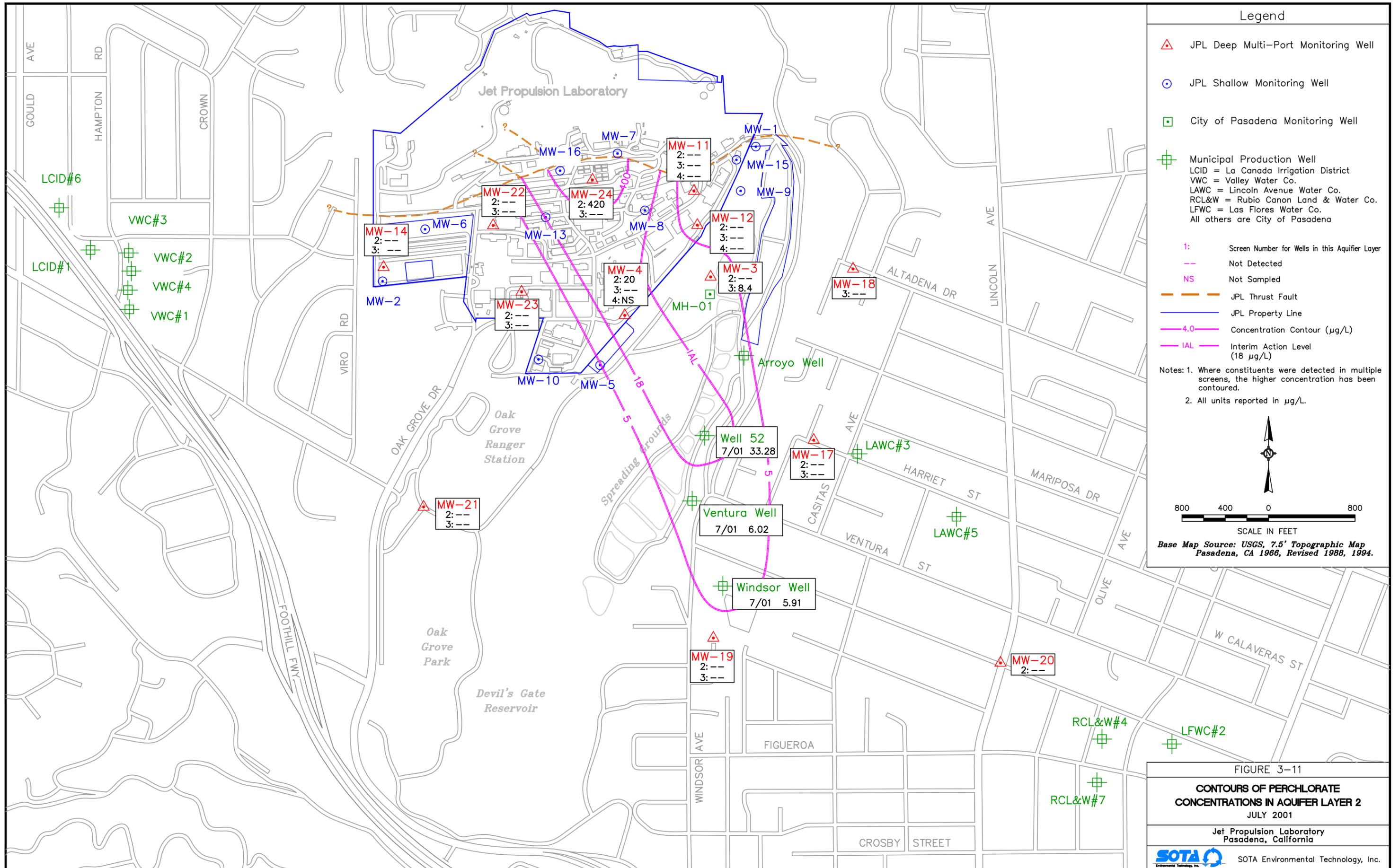
FIGURE 3-9

CONTOURS OF TETRACHLOROETHENE CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.





Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
LCID = La Canada Irrigation District
VWC = Valley Water Co.
LAWC = Lincoln Avenue Water Co.
RCL&W = Rubio Canon Land & Water Co.
LFWC = Las Flores Water Co.
All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

4.0 Concentration Contour (µg/L)

IAL Interim Action Level (18 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
2. All units reported in µg/L.



800 400 0 800

SCALE IN FEET

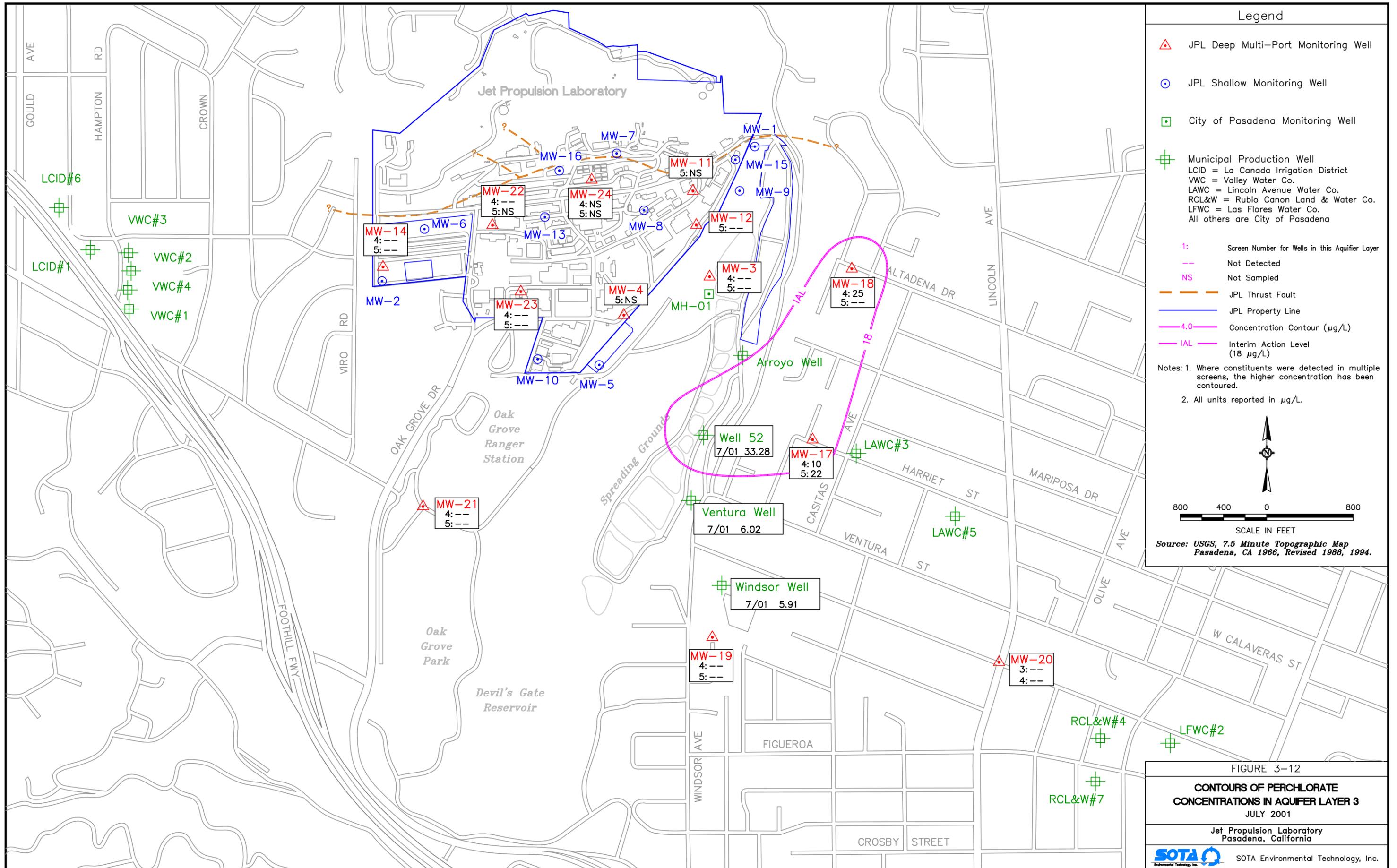
Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-11

**CONTOURS OF PERCHLORATE
CONCENTRATIONS IN AQUIFER LAYER 2
JULY 2001**

Jet Propulsion Laboratory
Pasadena, California

 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWAC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

4.0 Concentration Contour (µg/L)

IAL Interim Action Level (18 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

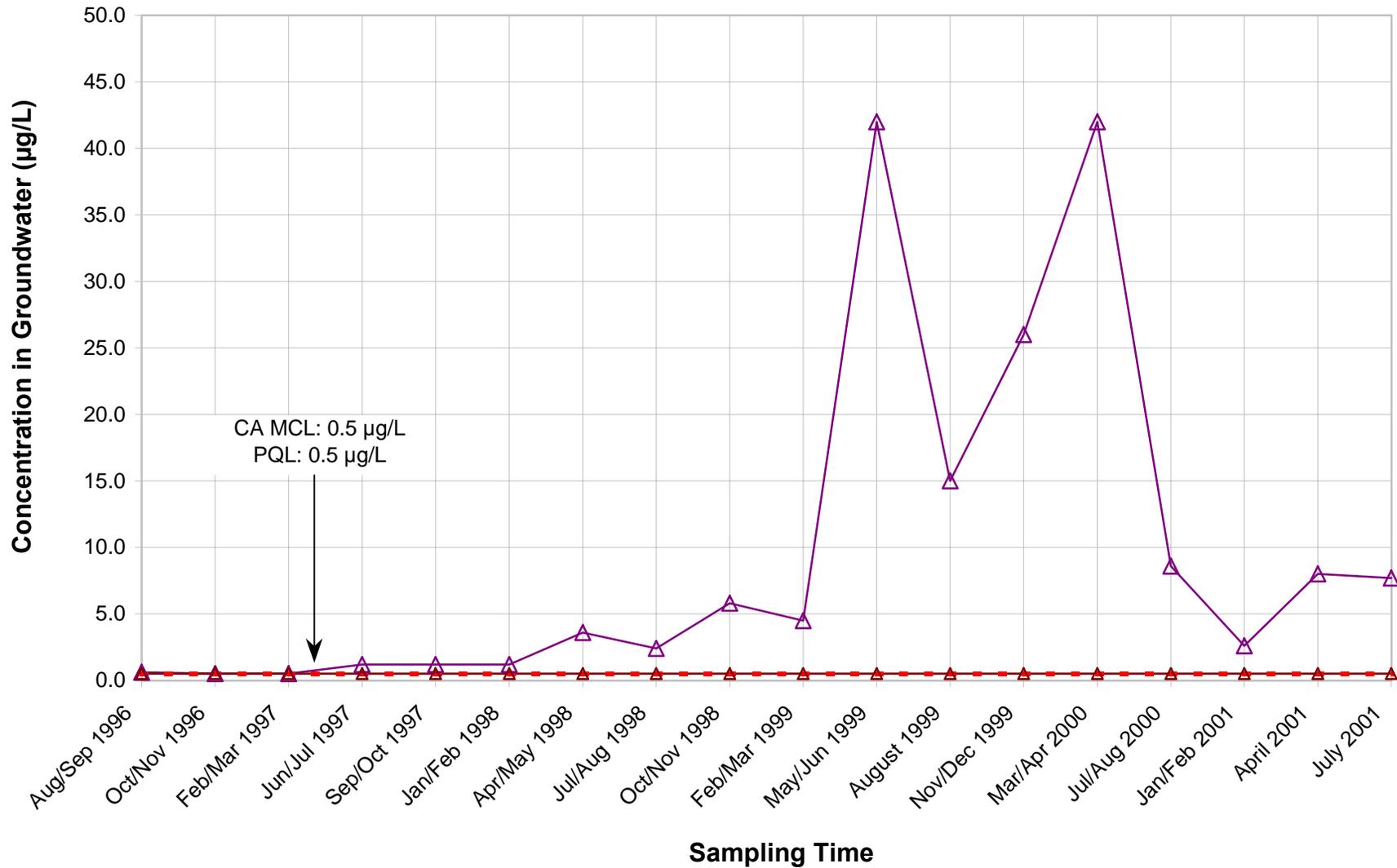
800 400 0 800
 SCALE IN FEET
 Source: USGS, 7.5 Minute Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-12

CONTOURS OF PERCHLORATE CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.

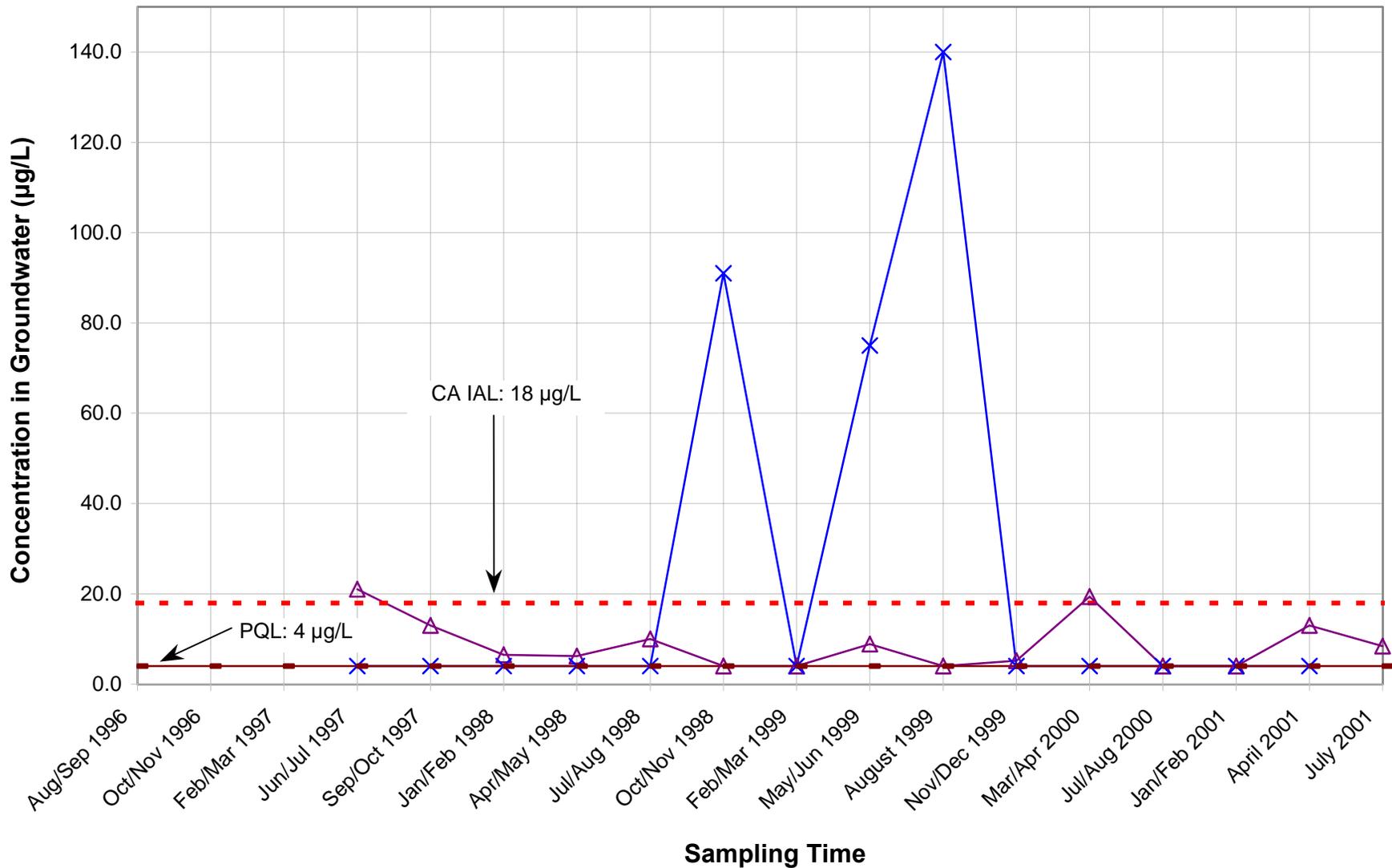


Legend

- △— Screen 3
- △— PQL
- - - CA MCL

Only concentrations above PQL are plotted. Screens 2 and 4 concentrations were below PQL. Screens 1 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-13
CARBON TETRACHLORIDE DETECTED AT MW-3 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA <small>Environmental Technology, Inc.</small>
SOTA Environmental Technology, Inc.

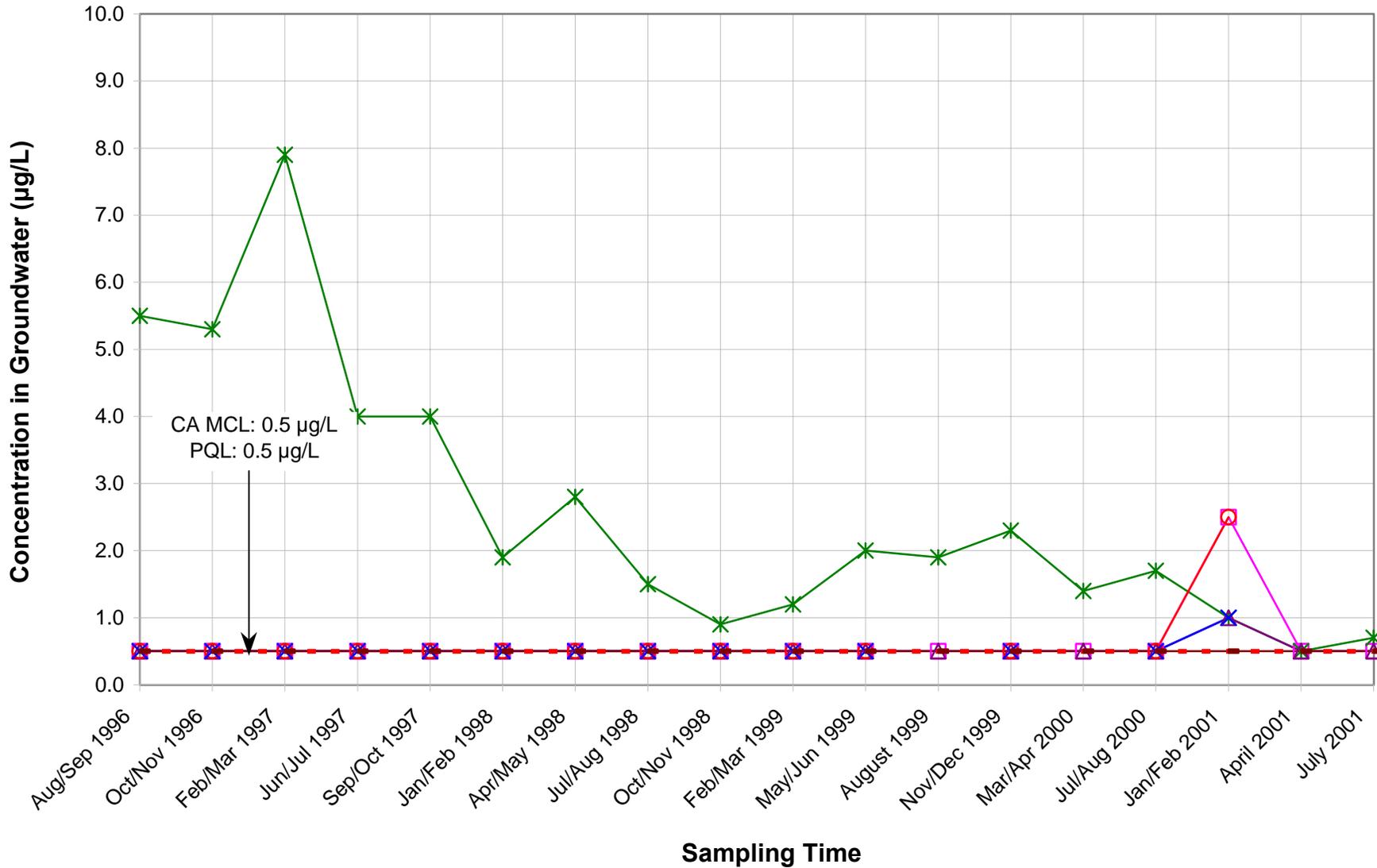


Legend

—△— Screen 3
 —×— Screen 5
 —●— PQL
 - - - CA IAL

Only concentrations above PQL are plotted. Screens 1, 2 and 4 concentrations were below PQL.
 Screen 1 was not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-14	
PERCHLORATE DETECTED AT MW-3 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

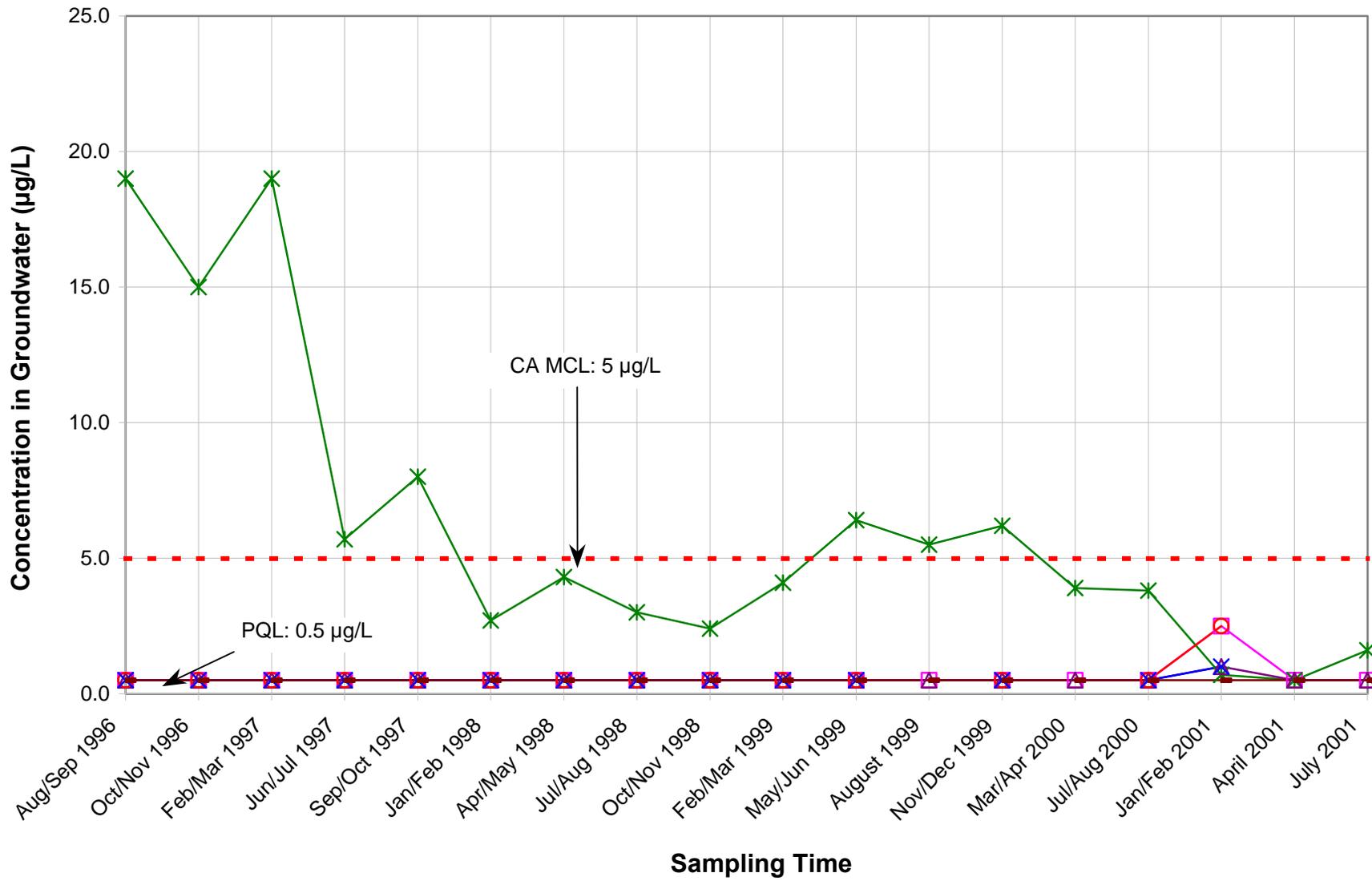


Legend

- Screen 1
- *— Screen 2
- △— Screen 3
- Screen 4
- ×— Screen 5
- PQL
- - - - CA MCL

Only concentrations above PQL are plotted. Screens 1, 2, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-15	
CARBON TETRACHLORIDE DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.



Legend

- Screen 1
- ✱ Screen 2
- △ Screen 3
- Screen 4
- ✱ Screen 5
- PQL
- - - CA MCL

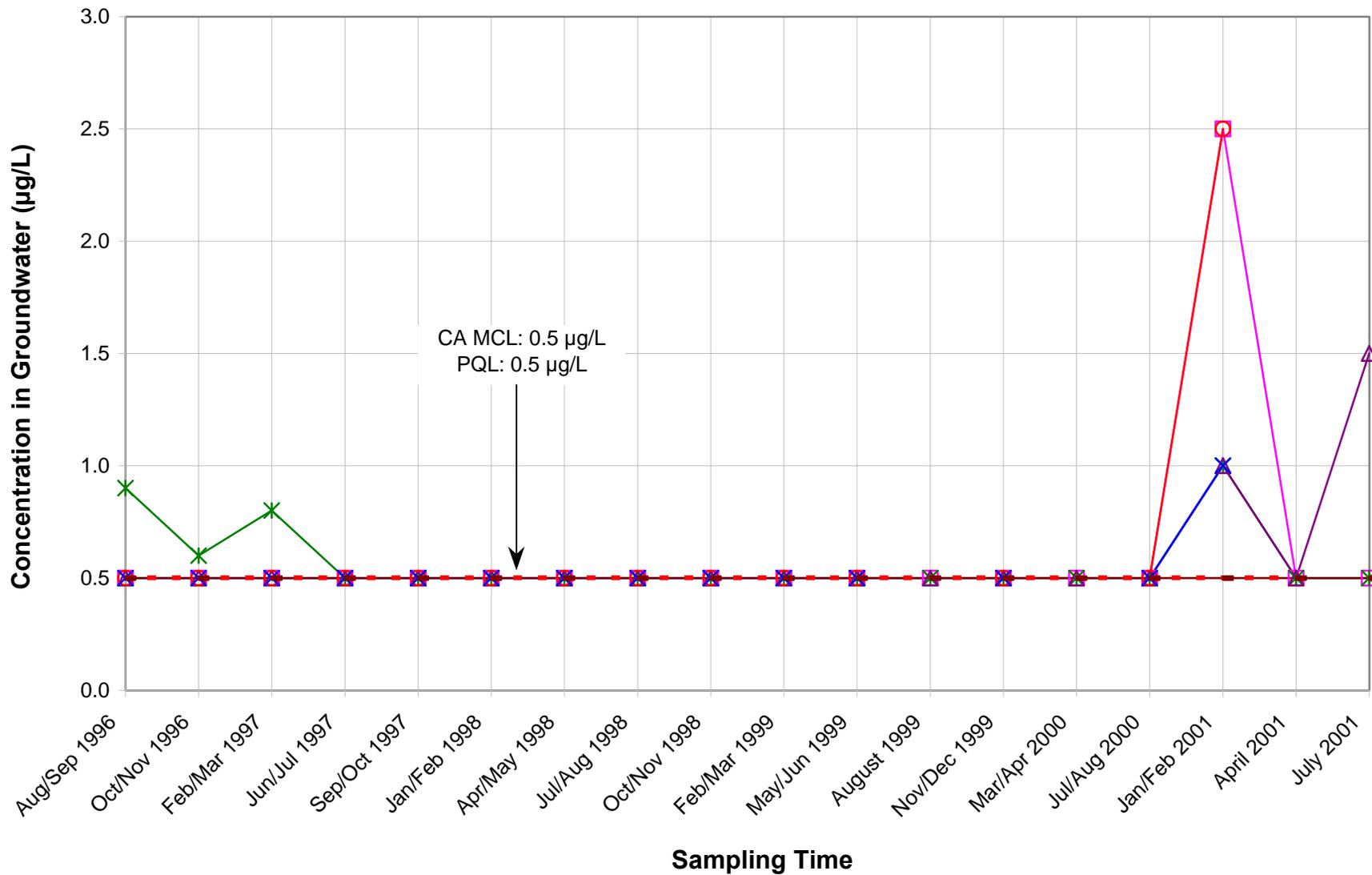
Only concentrations above PQL are plotted. Screens 1, 2, 3, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-16
TRICHLOROETHENE DETECTED AT MW-4
FROM AUG/SEP 1996 TO JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



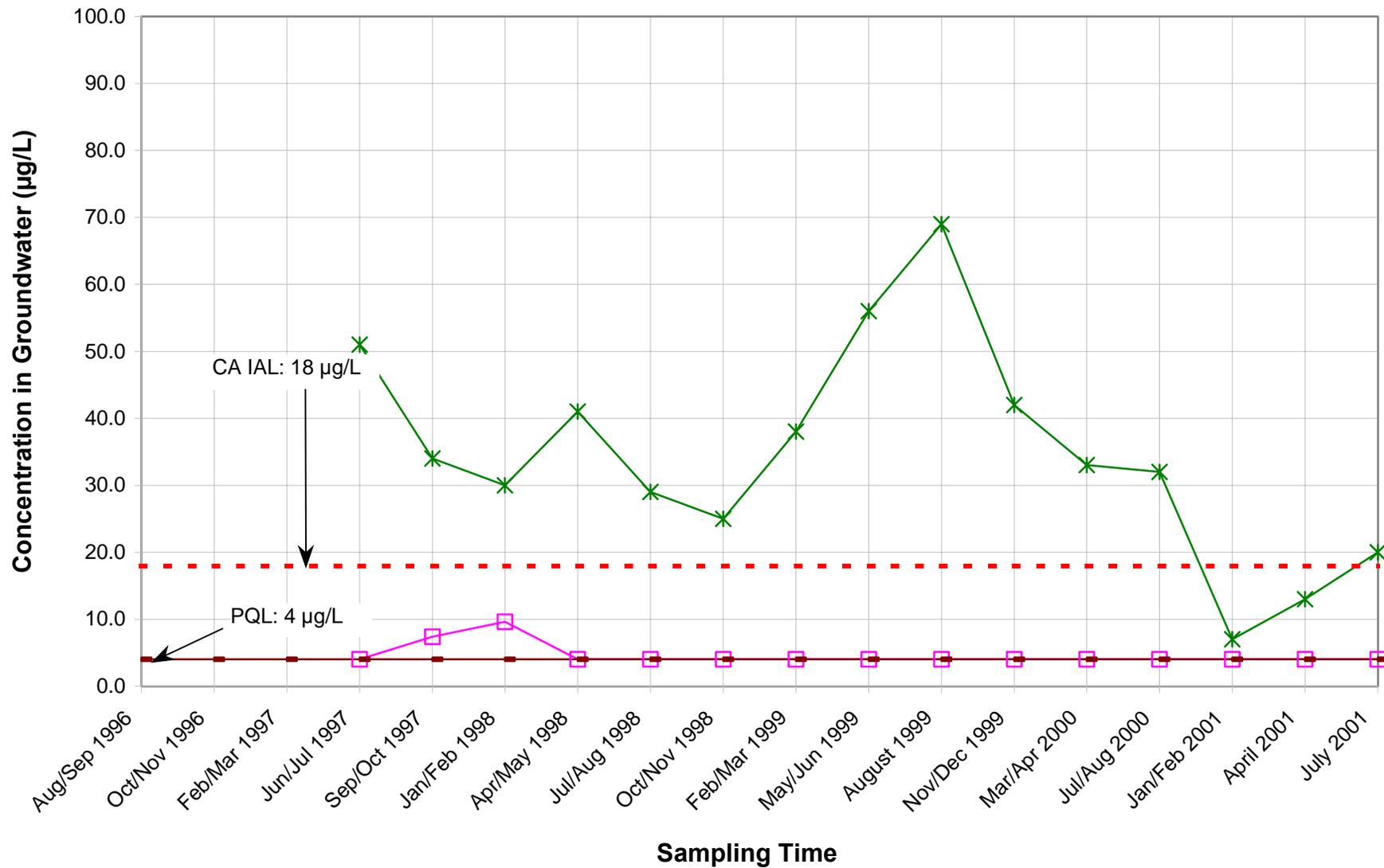


Legend

- Screen 1
- *— Screen 2
- △— Screen 3
- Screen 4
- ×— Screen 5
- PQL
- - - CA MCL

Only concentrations above PQL are plotted. Screens 1, 2, 3, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-17	
1, 2-DCA DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

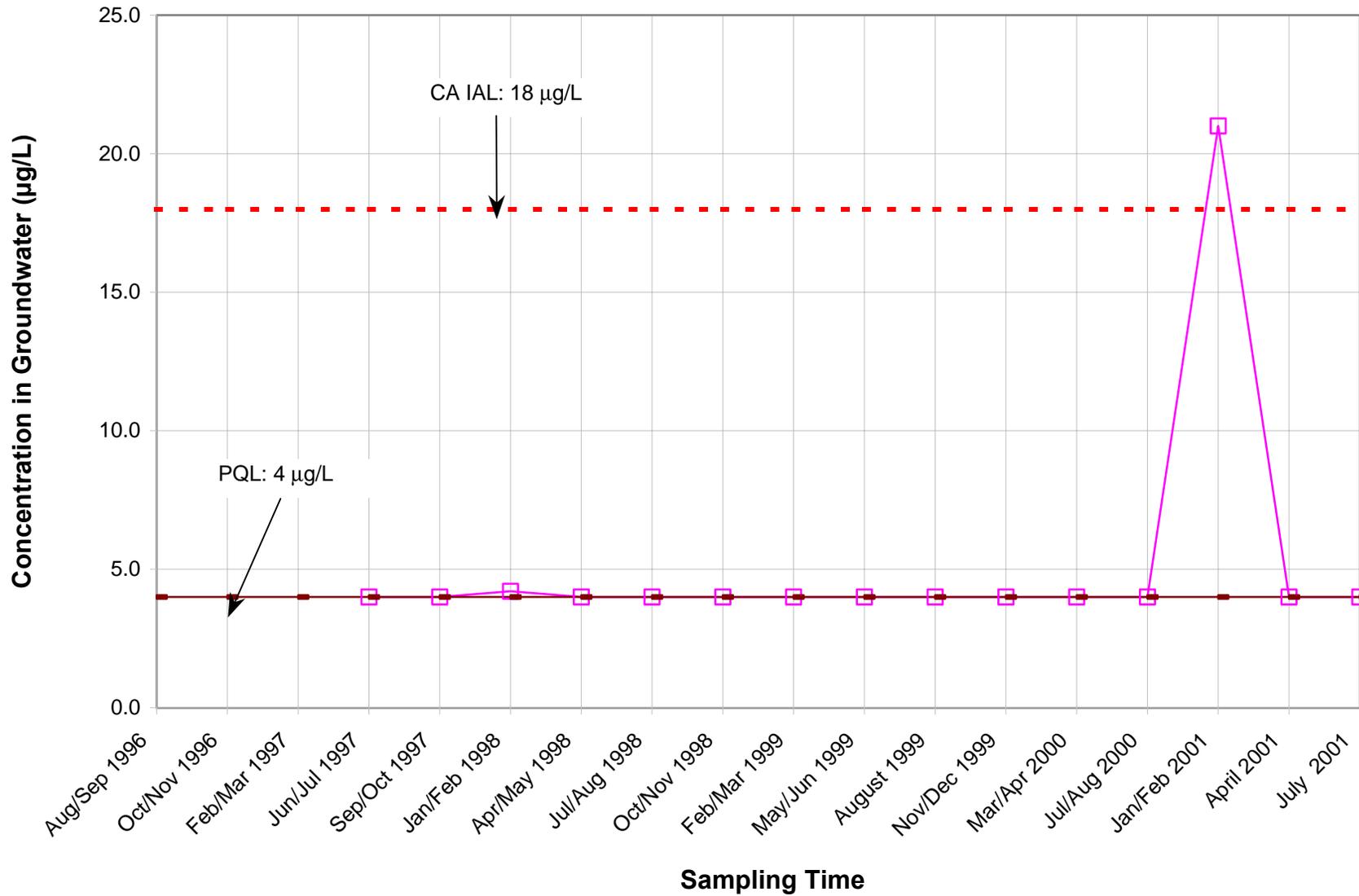


Legend

—□— Screen 1
 —*— Screen 2
 —●— PQL
 - - - CA IAL

Only concentrations above PQL are plotted. Screens 3, 4, and 5 concentrations were below PQL.
 Screens 4 and 5 were not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-18
PERCHLORATE DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA Environmental Technology, Inc.

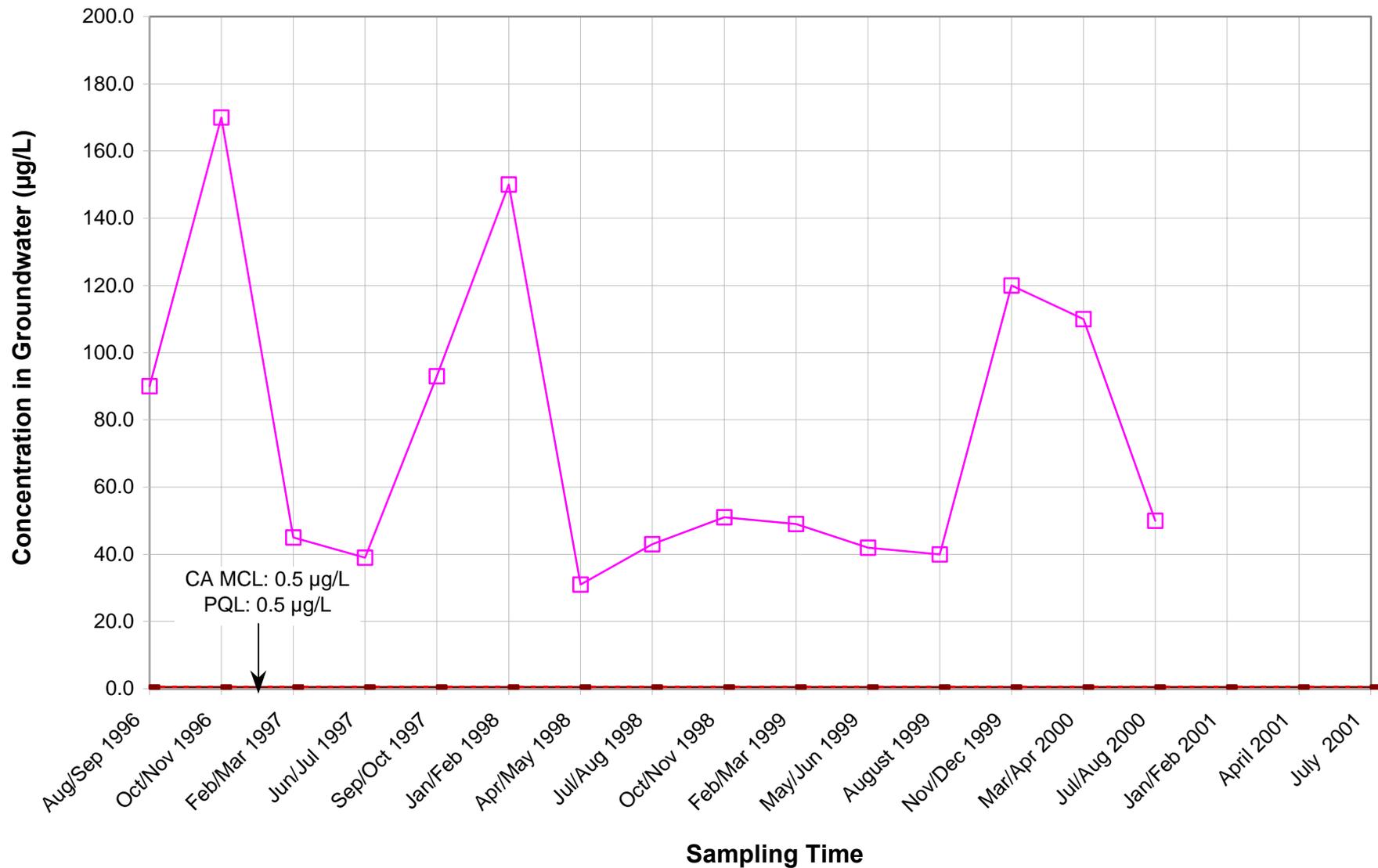


Legend

—□— Shallow Well —●— PQL - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-19
PERCHLORATE DETECTED AT MW-5 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

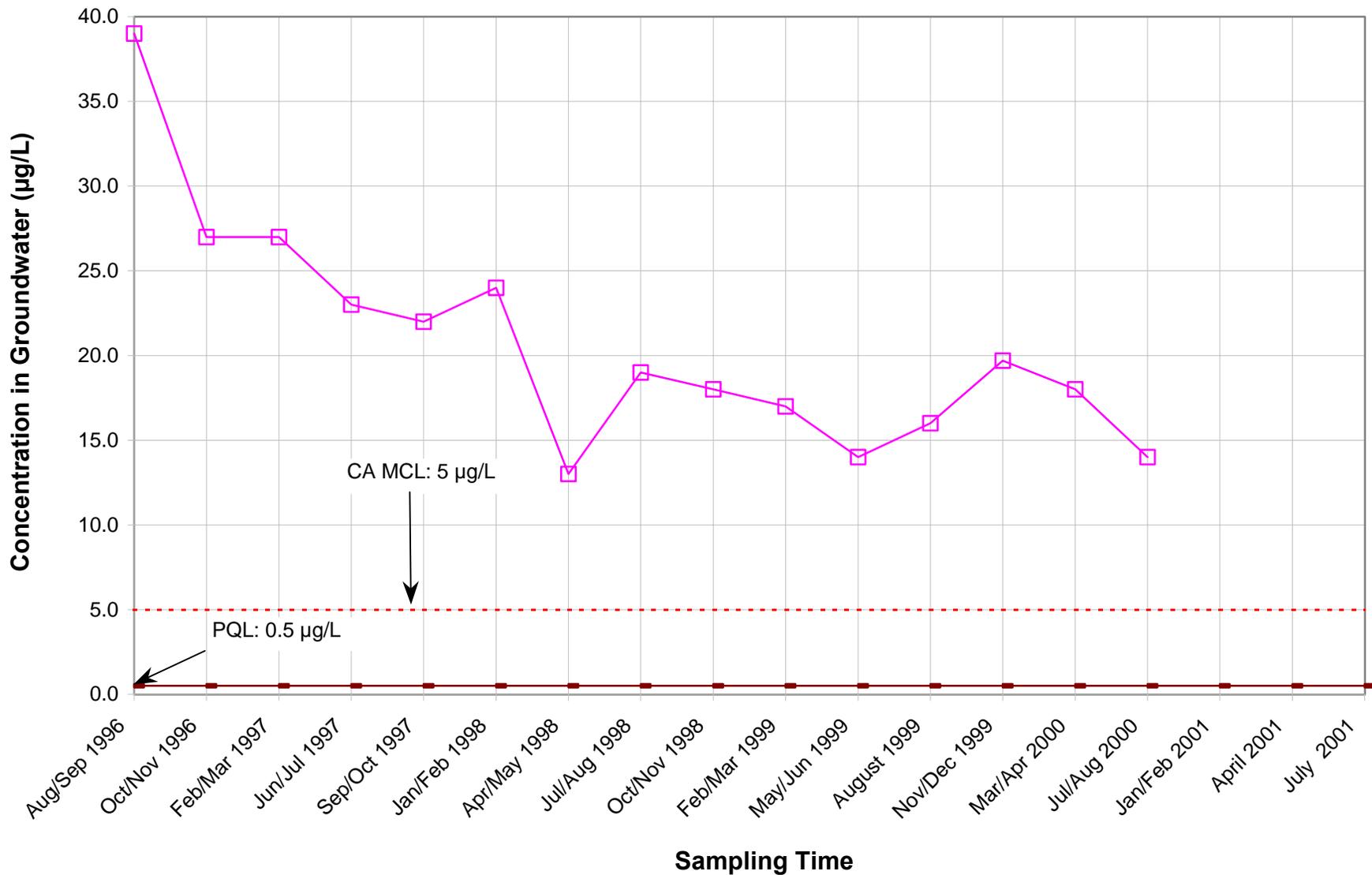


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-20	
CARBON TETRACHLORIDE DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

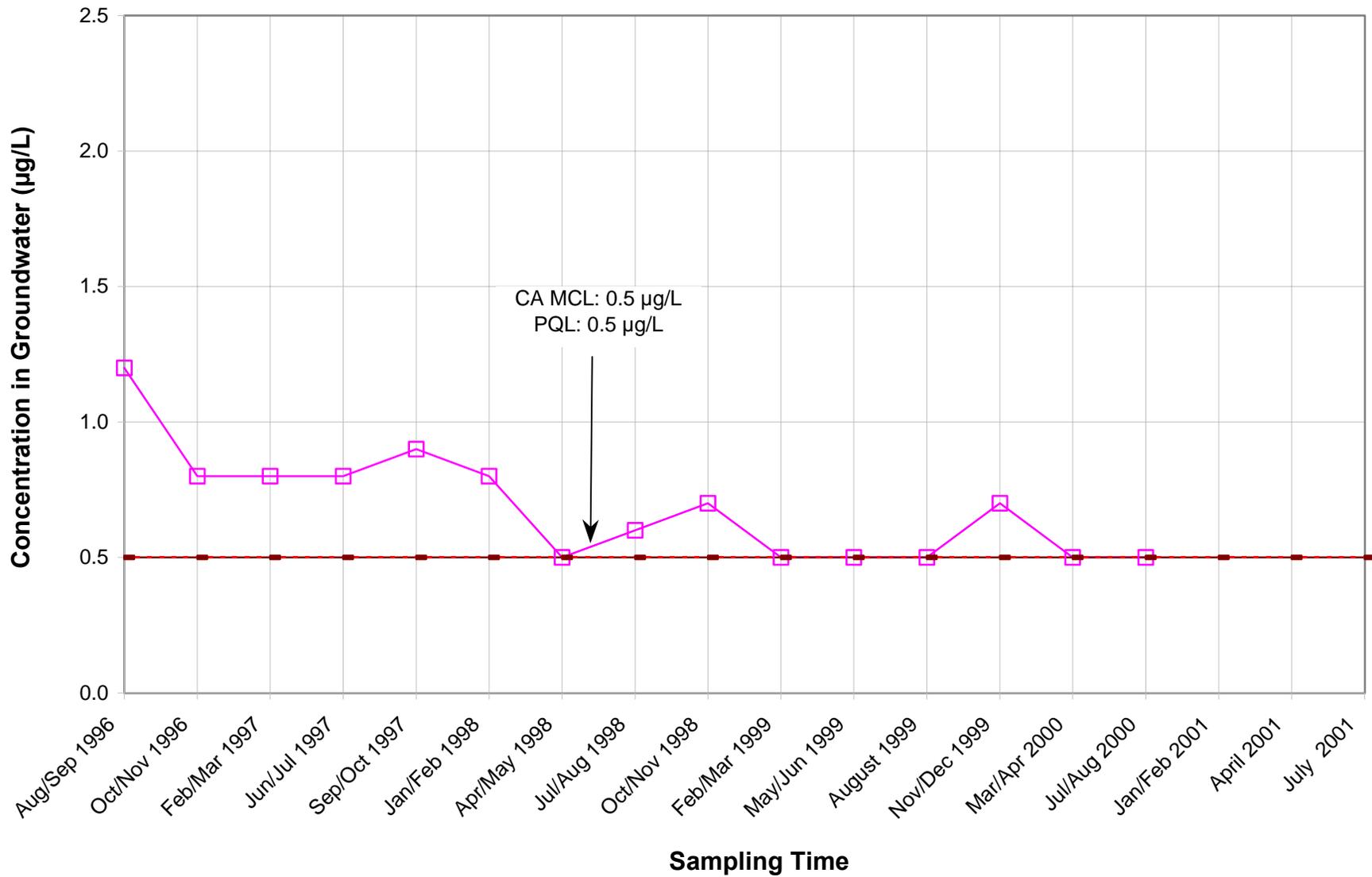


Legend

- Shallow Well
- PQL
- - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-21	
TRICHLOROETHENE DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

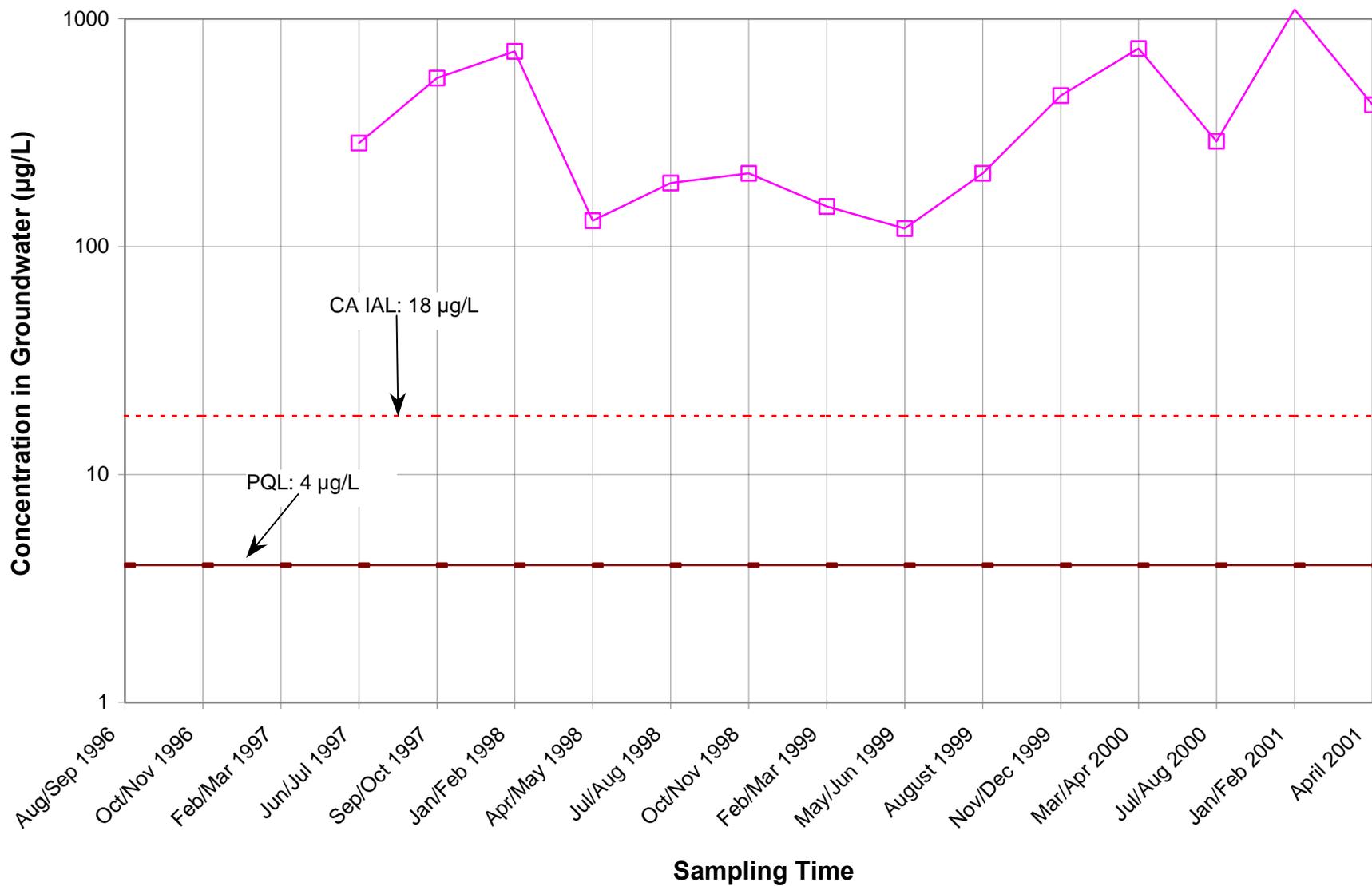


Legend

- Shallow Well
- PQL
- CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-22	
1, 2-DCA DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.



Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Results for MW-7 obtained from US Filter Pilot Test Report).

Values in (Y) axis are represented in Logarithmic scale.

Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

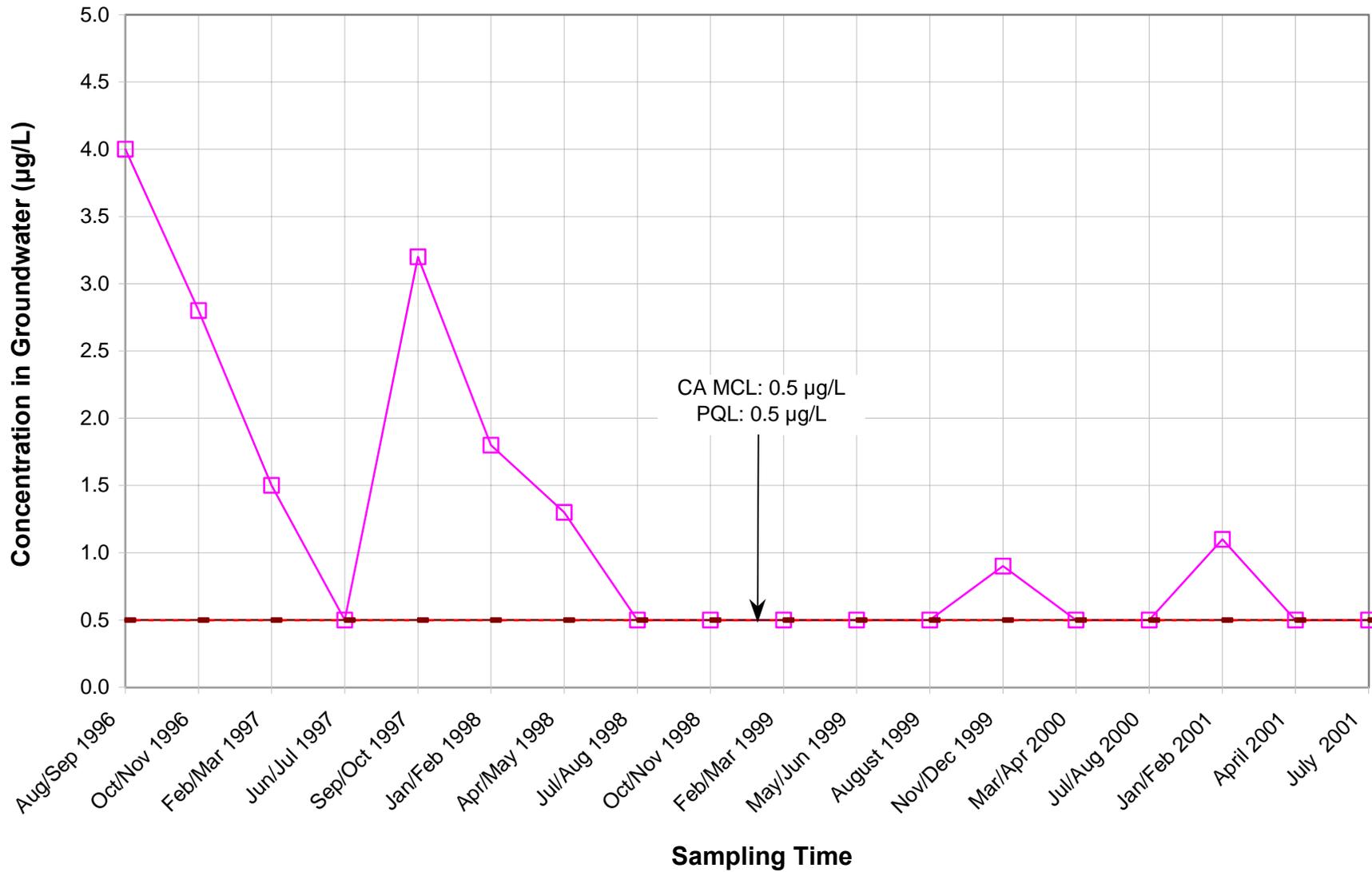
FIGURE 3-23

PERCHLORATE DETECTED AT MW-7
FROM AUG/SEP 1996 TO APRIL 2001

Jet Propulsion Laboratory
Pasadena California



SOTA Environmental Technology, Inc.

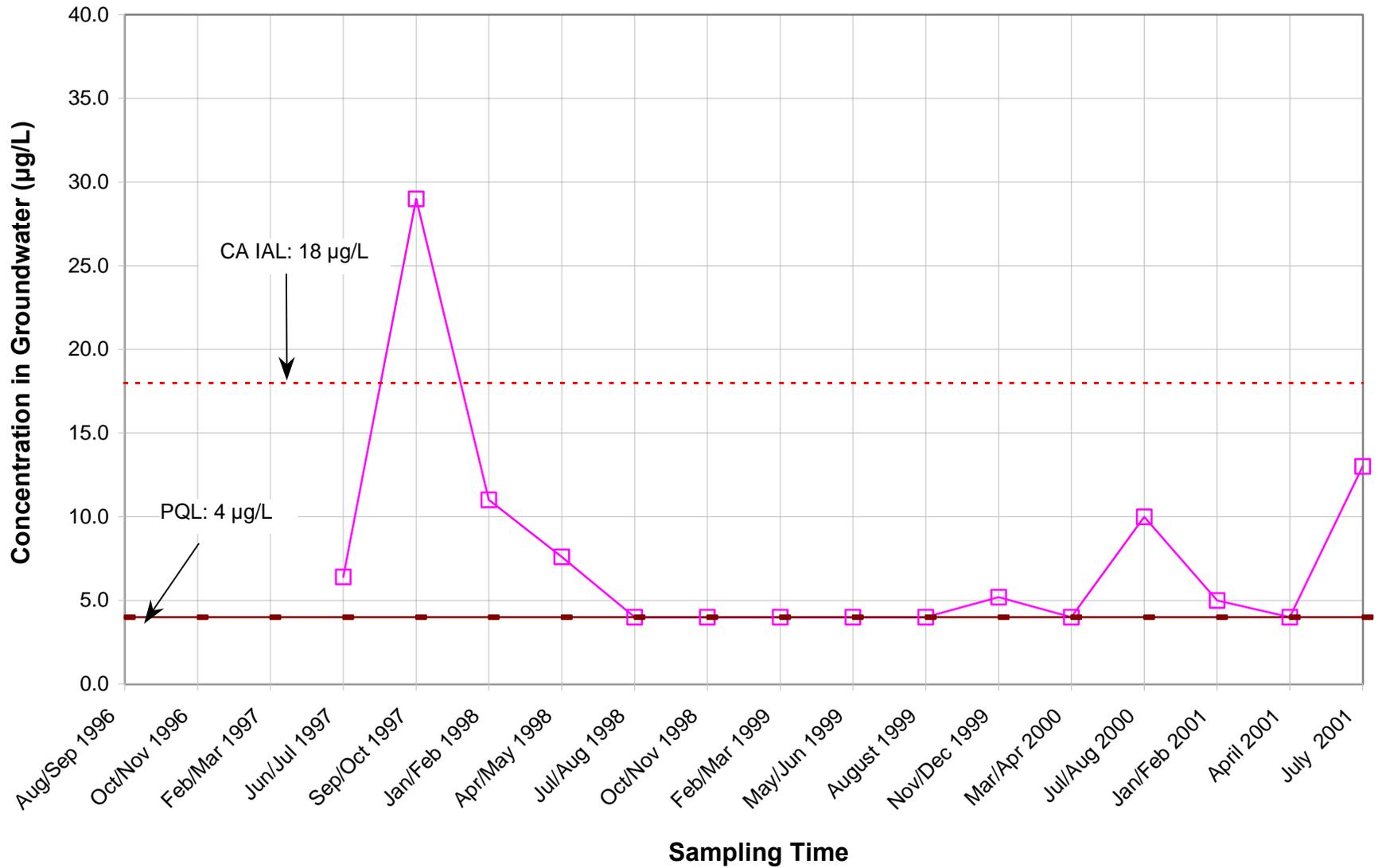


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-24	
CARBON TETRACHLORIDE DETECTED AT MW-8 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

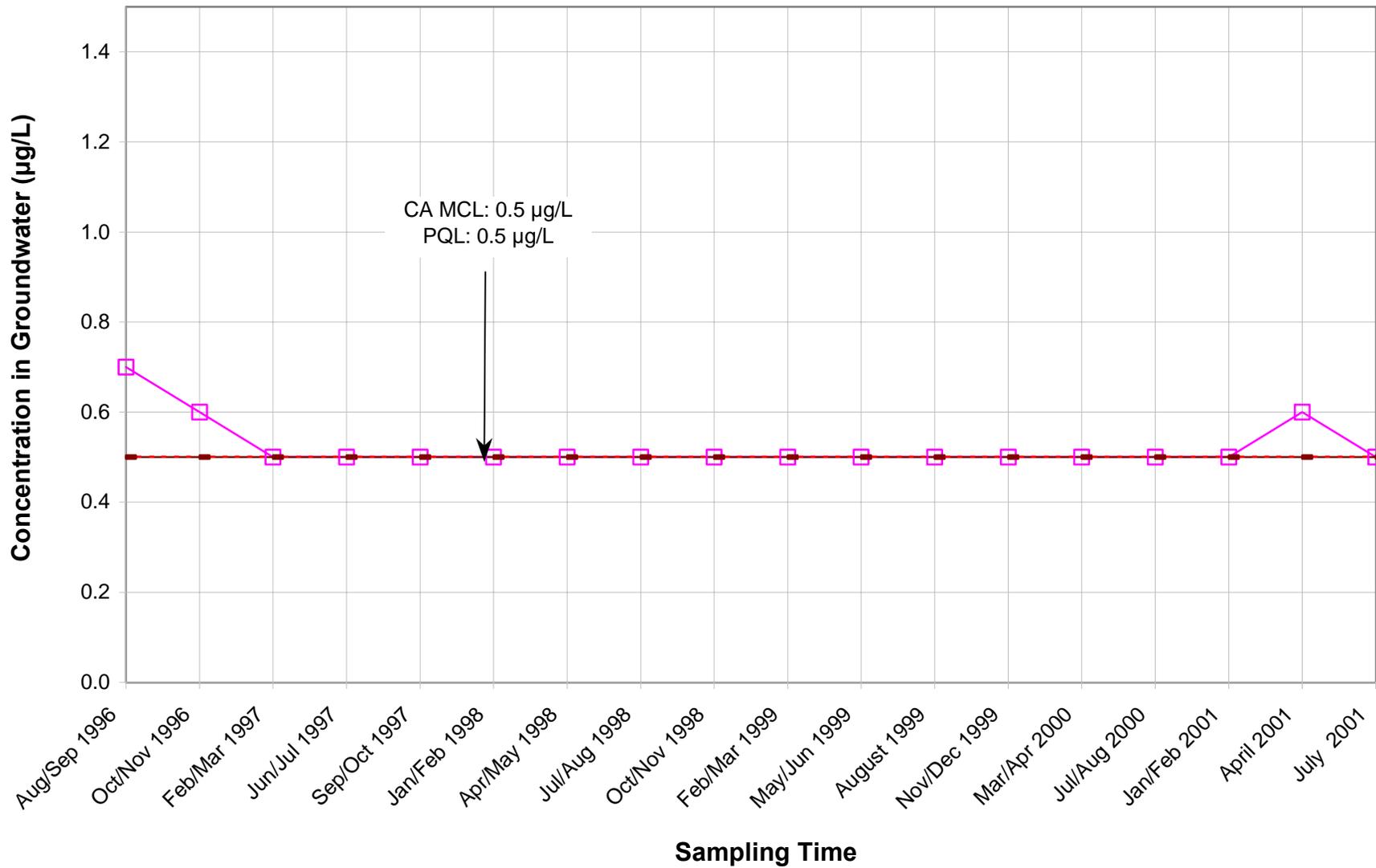


Legend

—□— Shallow Well —●— PQL - - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-25	
PERCHLORATE DETECTED AT MW-8 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

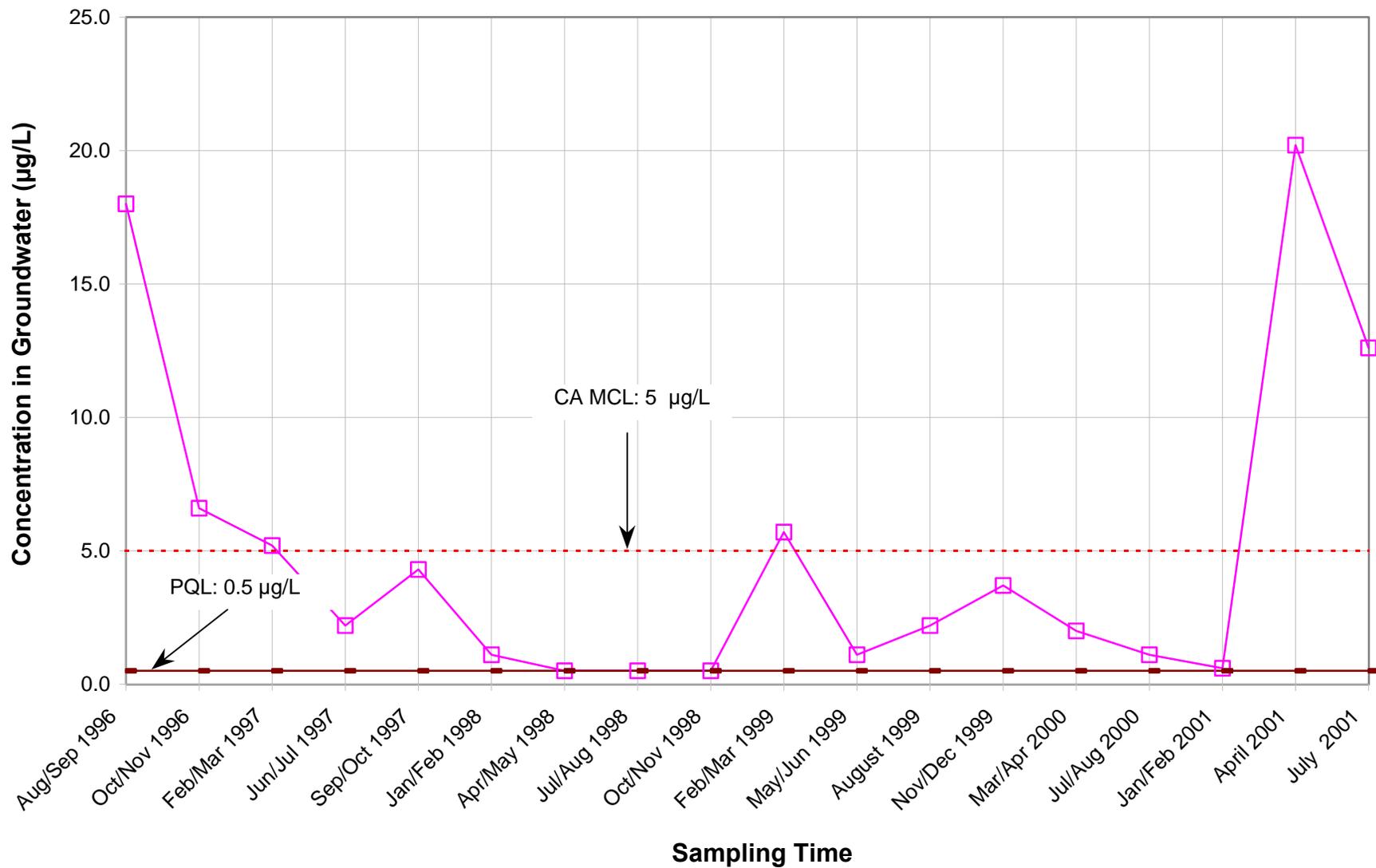


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-26
CARBON TETRACHLORIDE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

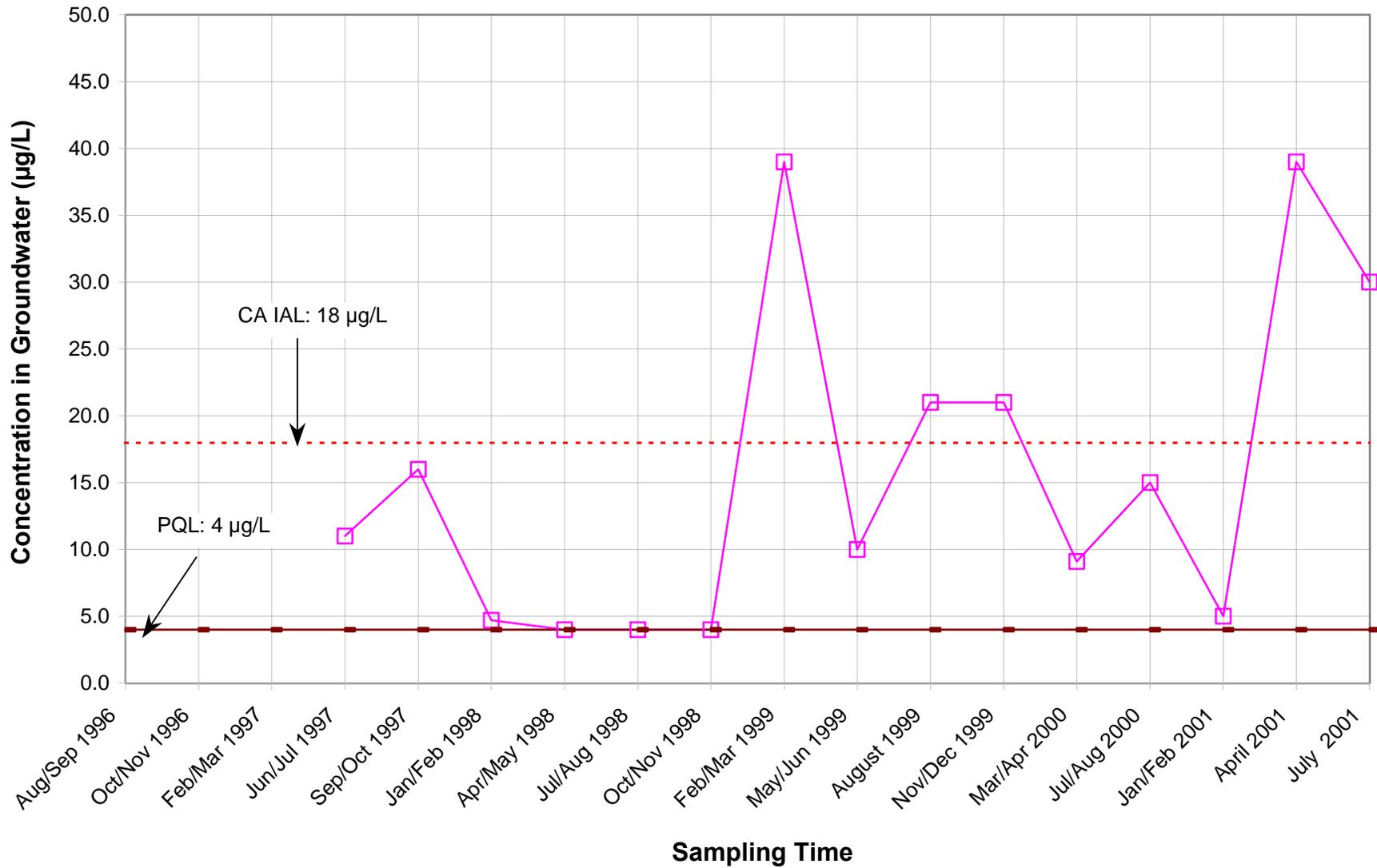


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-27	
TRICHLOROETHENE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

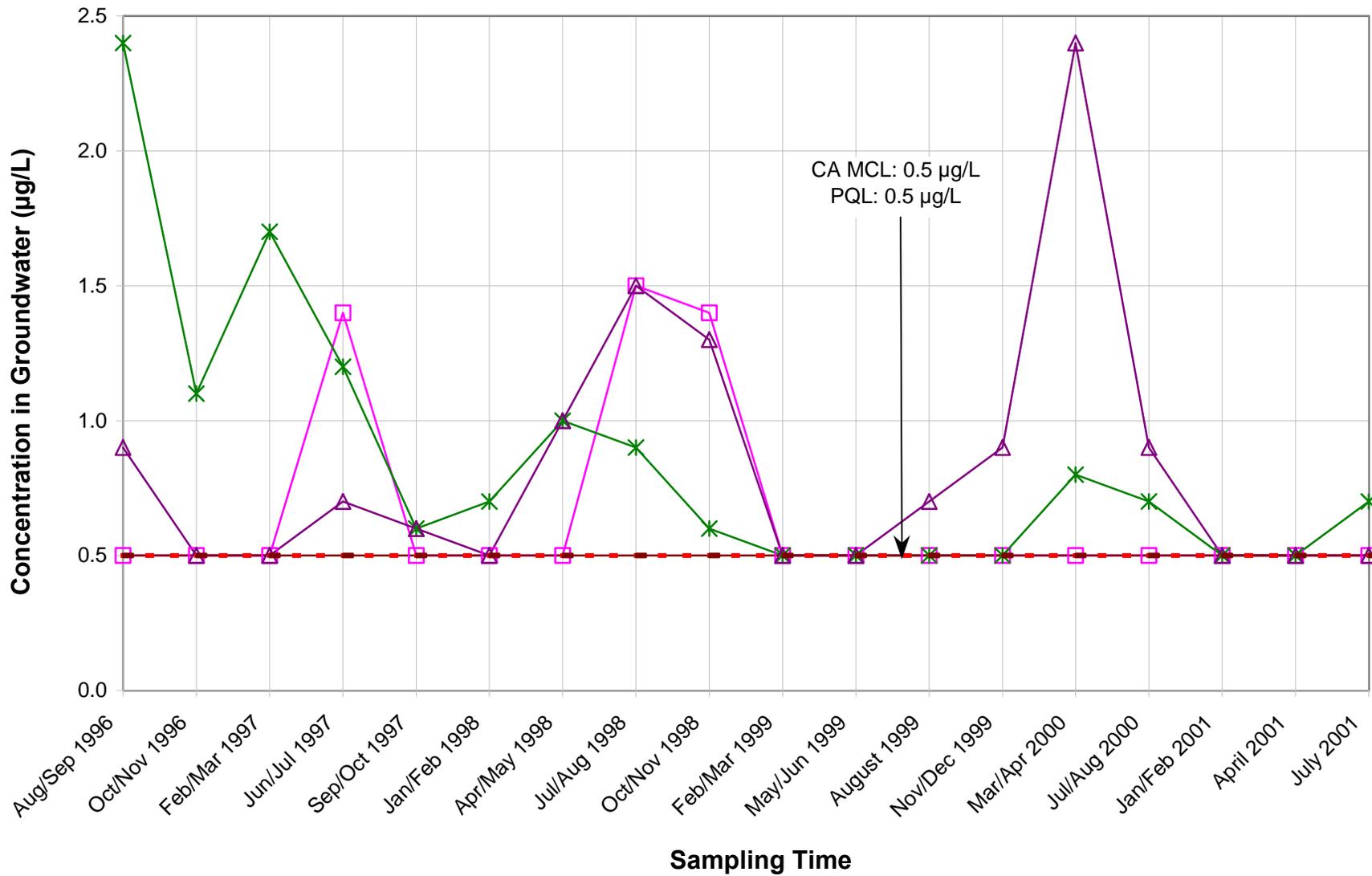


Legend

—□— Shallow Well
 —■— PQL
 - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-28
PERCHLORATE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA Environmental Technology, Inc.



Legend

- Screen 1 —*— Screen 2 —△— Screen 3 —●— PQL - - - CA MCL

Only concentrations above PQL are plotted. Screen 4 concentration was below PQL. Screen 5 was not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-29
CARBON TETRACHLORIDE DETECTED AT MW-11 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.