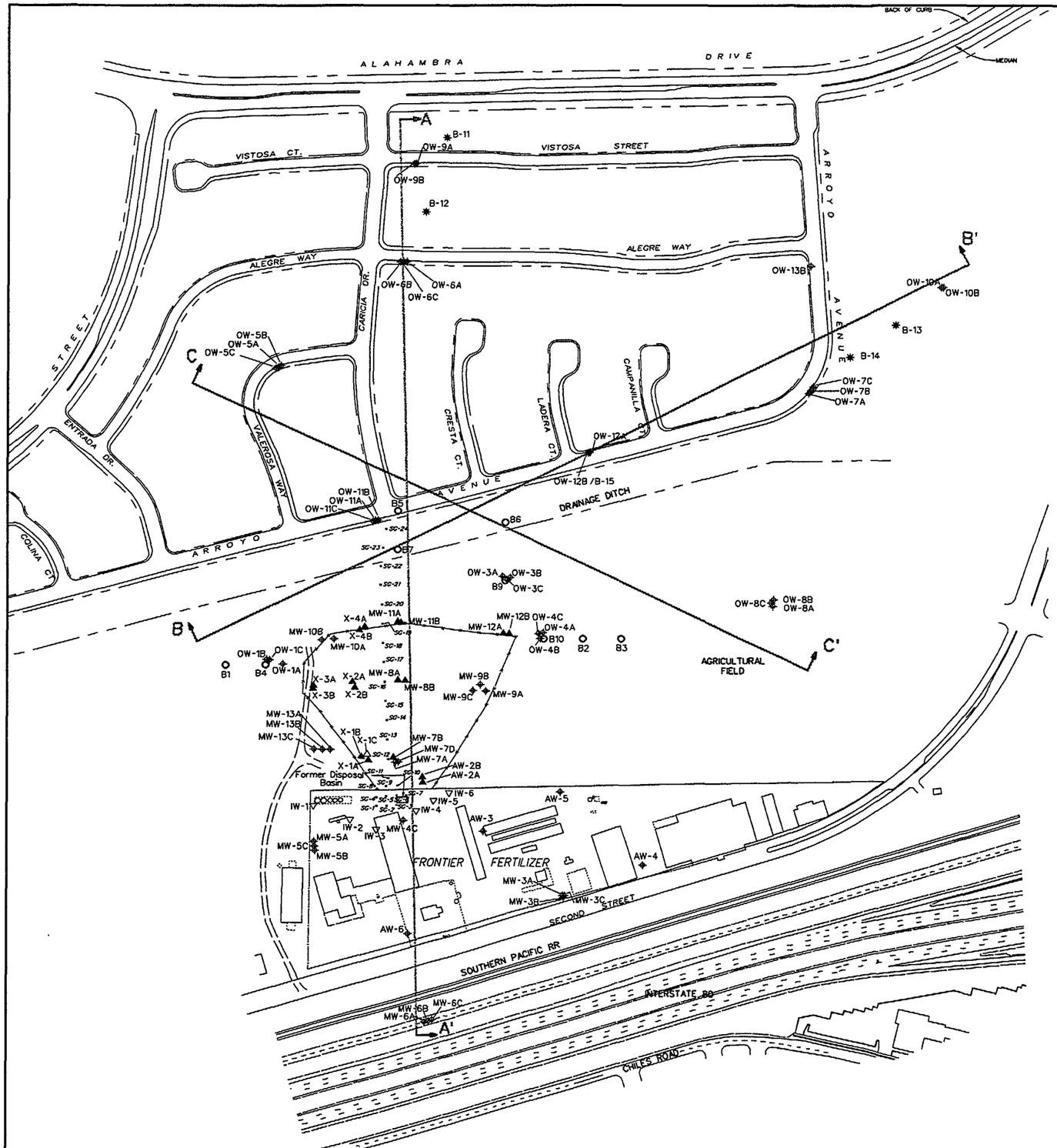
Figures



EXPLANATION

MW-10A ⊕	Monitoring Well
IW-6 ▽	Injection Well
X-2A ▲	Extraction Well
X-1C △	Inactive Extraction Well
B-13 ✱	SimulProbe™ Sample Location
SG-24 .	Soil Gas Sample Locaton
B3 ○	Hydropunch Boring 1995 (used in some Hydrogeologic Cross-Sections)
A A'	Hydrogeologic Cross-Section Location (see Figures 3-1, 3-2 and 3-3)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

WELL AND SAMPLE LOCATIONS

Job Number	Drawing No.	Rev
20376	FIGURE ES-1	0

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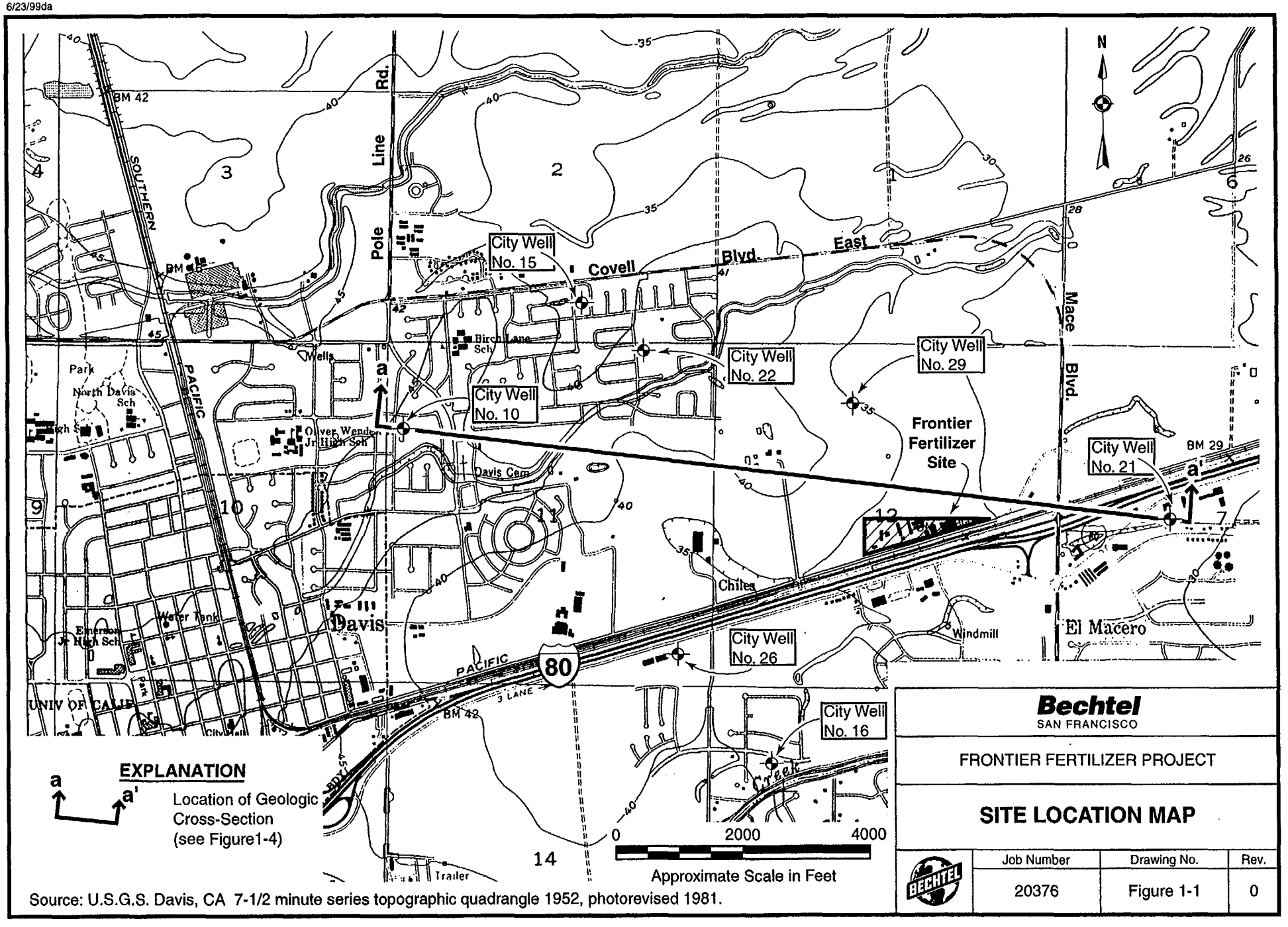
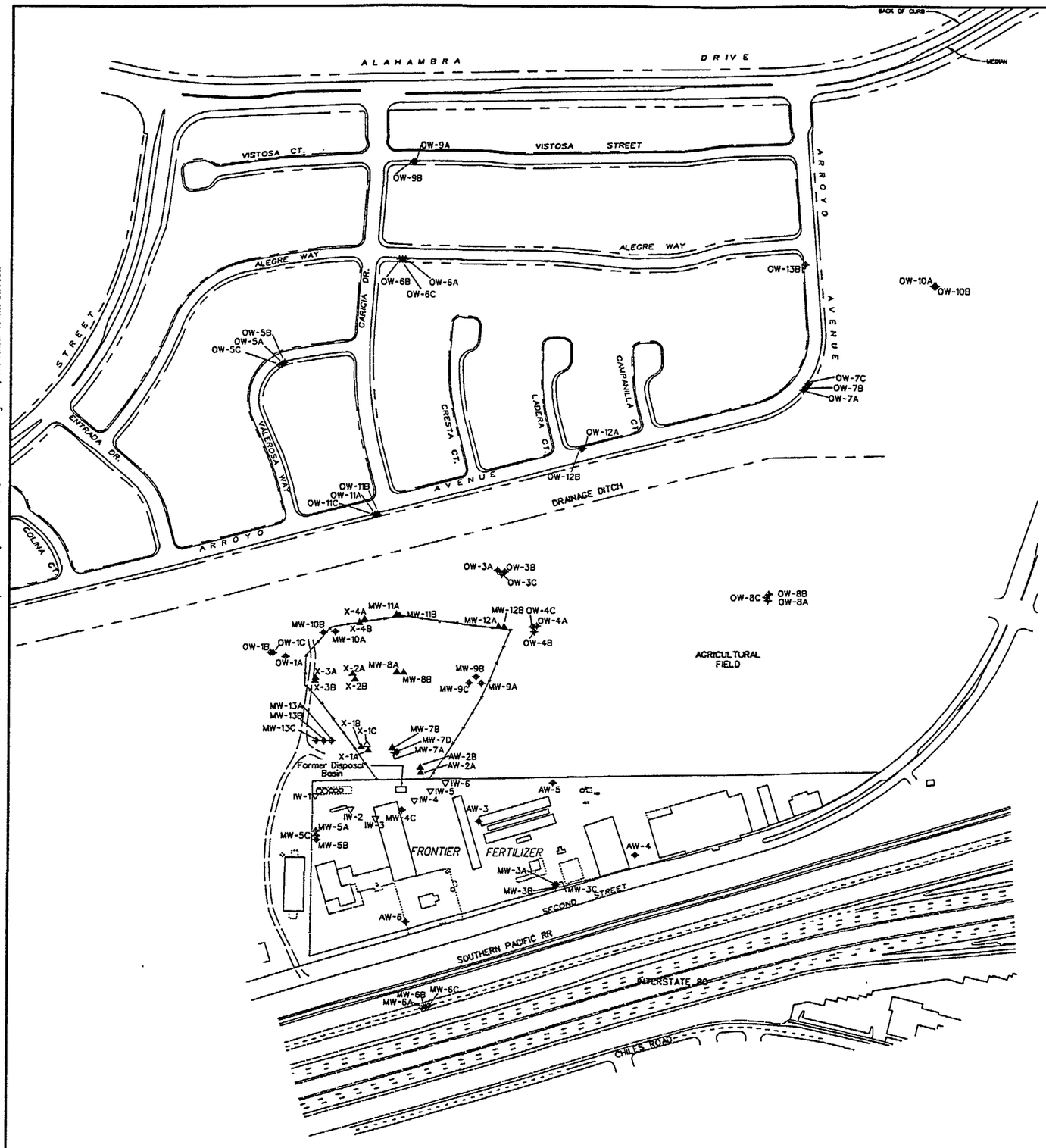


Source: U.S.G.S. Davis, CA 7-1/2 minute series topographic quadrangle 1952, photorevised 1981.



EXPLANATION

MW-10A	Monitoring Well
IW-6	Inactive Injection Well
X-2A	Active Extraction Well
X-1C	Inactive Extraction Well

N

100 0 100 200 400

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SITE FEATURES MAP

Job Number	Drawing No.	Rev
20376	FIGURE 1-2	0

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SEDIMENTARY AND METASEDIMENTARY ROCKS

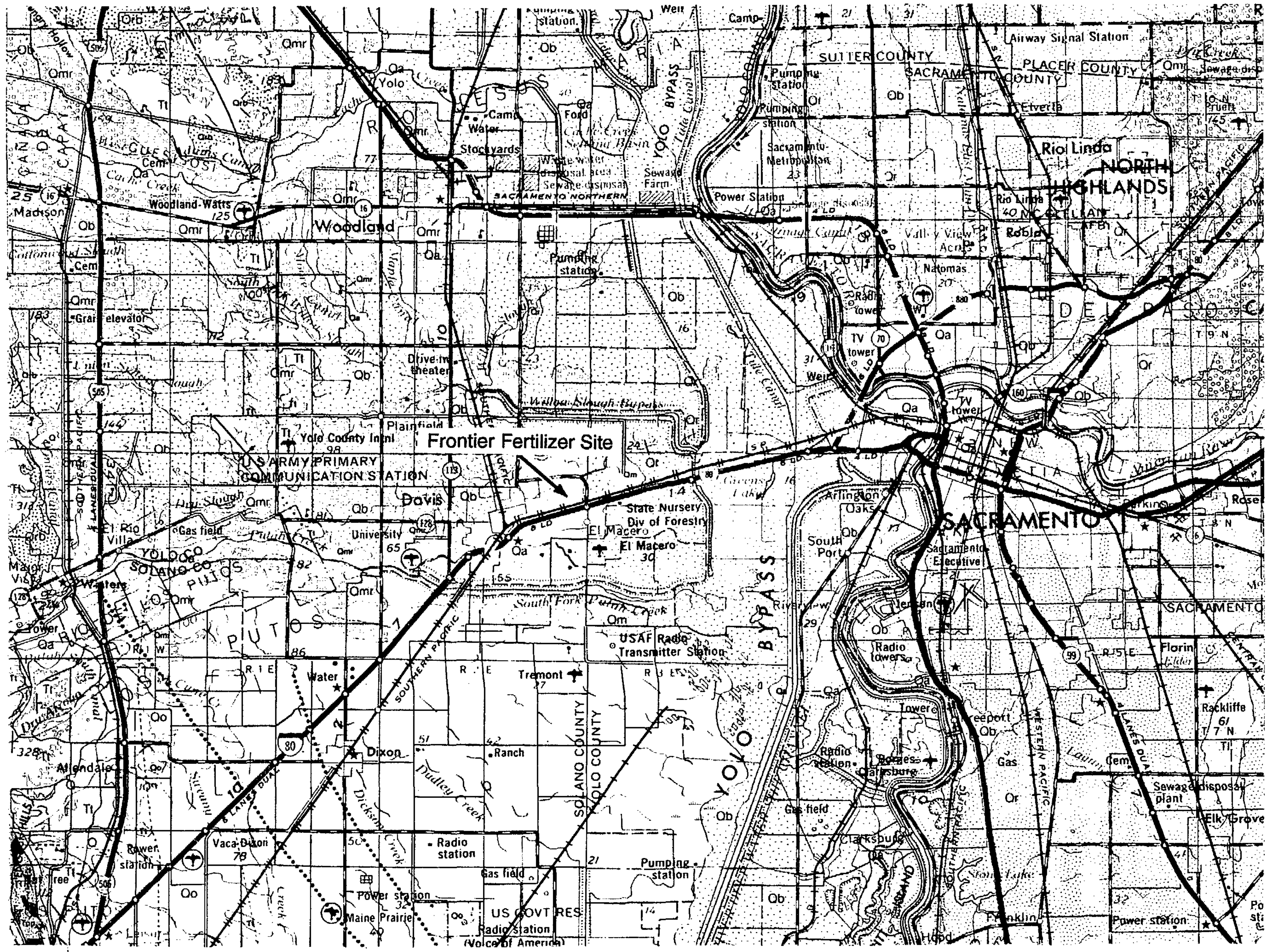
CENOZOIC

QUATERNARY

- O — Alluvium
- Mine and dredge tailings
- Qa — Levee and channel deposits
- Qb — Basin deposits *(Alluvium)*
- Qi — Intertidal deposits *(Peaty mud)*
- Qs — Dune sand
- Ql — Lake deposits
- Qo — Older alluvium
- Qg — Glacial deposits
- Qm — Modesto Formation *(Alluvium)*
- Qr — Riverbank Formation *(Alluvium)*
- Qmr — Modesto-Riverbank Formations *(Arkosic alluvium)*
- Qmz — Montezuma Formation *(Poorly consolidated, clayey sand)*
- Qtl — Turlock Lake Formation *(Sand, silt, and gravel)*
- Qrb — Red Bluff Formation *(Gravel in reddish, silty or sandy matrix)*
- North Merced Gravel *(Thin pediment veneer)*

TERTIARY

- Tt — Tehama Formation *(Sand, silt, and volcaniclastic rocks)*
- Tl — Laguna Formation *(Consolidated alluvial deposits)*
- Tsp — San Pablo Group *(Marine sandstone and shale)*
- Tm — Mehrten Formation *(Andesitic conglomerate, sandstone, and breccia)*
- Tvs — Valley Springs Formation *(Rhyolitic tuff and sedimentary rocks)*
- Markley Sandstone *(Marine)*
- Tn — Nortonville Shale *(Marine)*
- Td — Domengine Sandstone *(Marine)*
- Tc — Capay Formation *(Marine sandstone)*
- Tg — "Auriferous" Gravels
- Ione Formation *(Quartzose sandstone and kaolinitic clay)*
- Tmz — Martinez Formation *(Marine quartzose sandstone)*



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Source: Geologic Map of the Sacramento Quadrangle, California, 1:250,000
Published 1981

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FRONTIER FERTILIZER PROJECT			
GEOLOGIC MAP			
	Job Number	Drawing No.	Rev.
BECHTEL	20376	Figure 1-3	0

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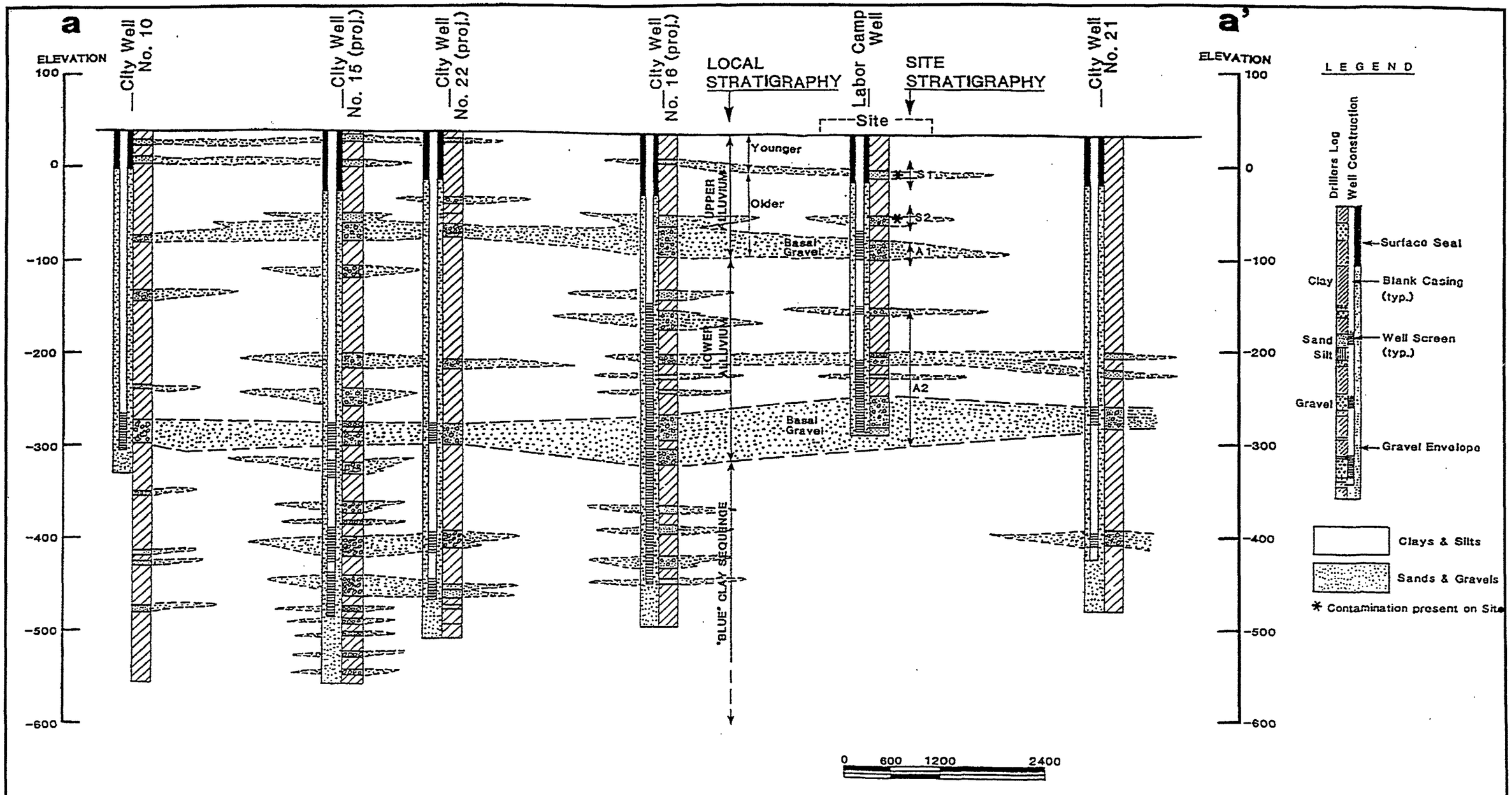

Approximate Horizontal Scale in Feet
Vertical Exaggeration = 12X

Source: Luhdorff and Scalmanini, November 1987.

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GEOLOGIC CROSS-SECTION
a-a'

Job Number	Drawing No.	Rev.
20376	Figure 1-4	0

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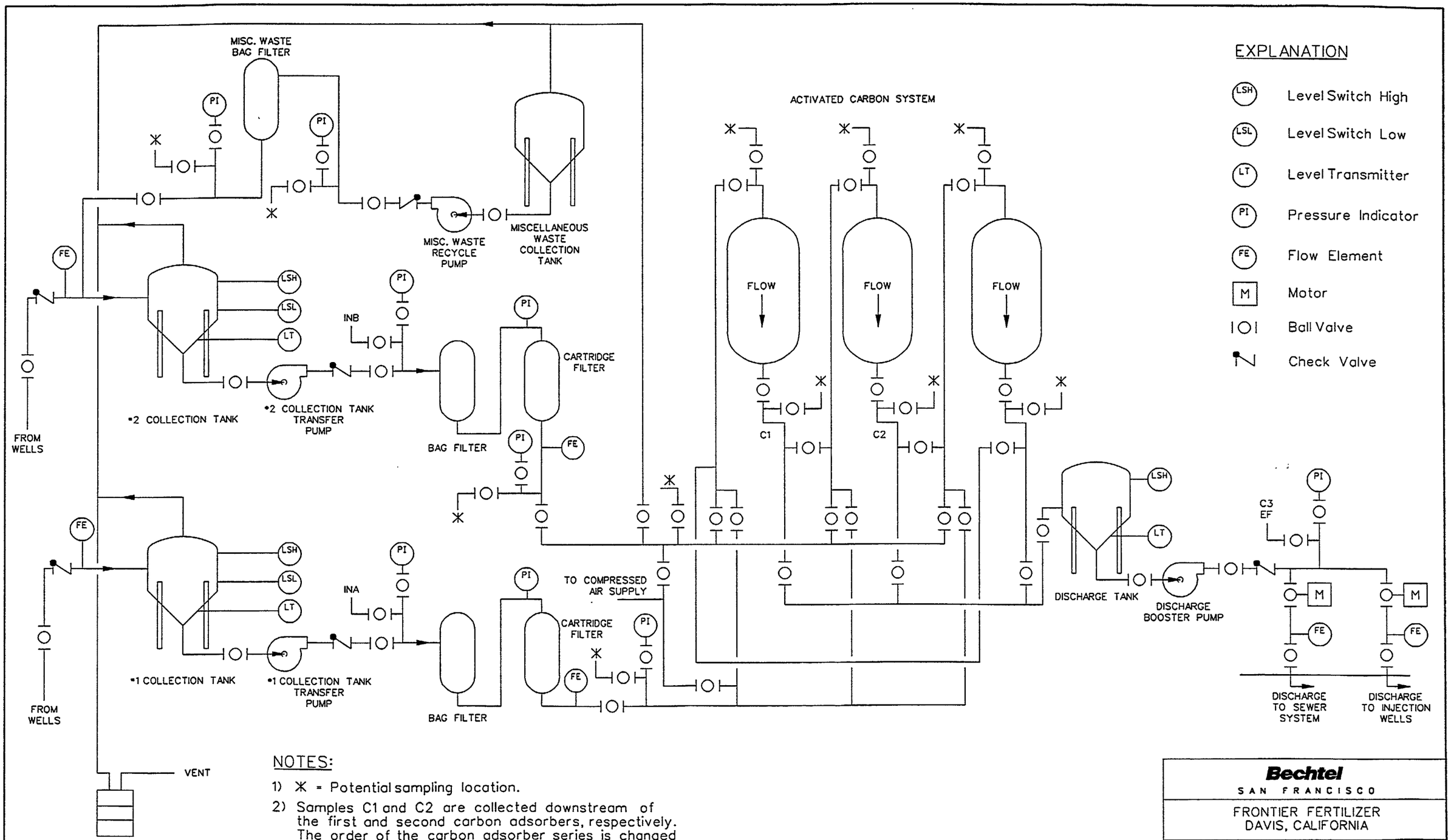

NOTES:

1) ✳ = Potential sampling location.
2) Samples C1 and C2 are collected downstream of the first and second carbon adsorbers, respectively. The order of the carbon adsorber series is changed every three weeks.
3) INA, INB, C1, C2, and C3/EF are current sampling locations.

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PROCESS FLOW AND SAMPLING LOCATION DIAGRAM

Job Number	Drawing No.	Rev.
20376	FIGURE 1-5	0

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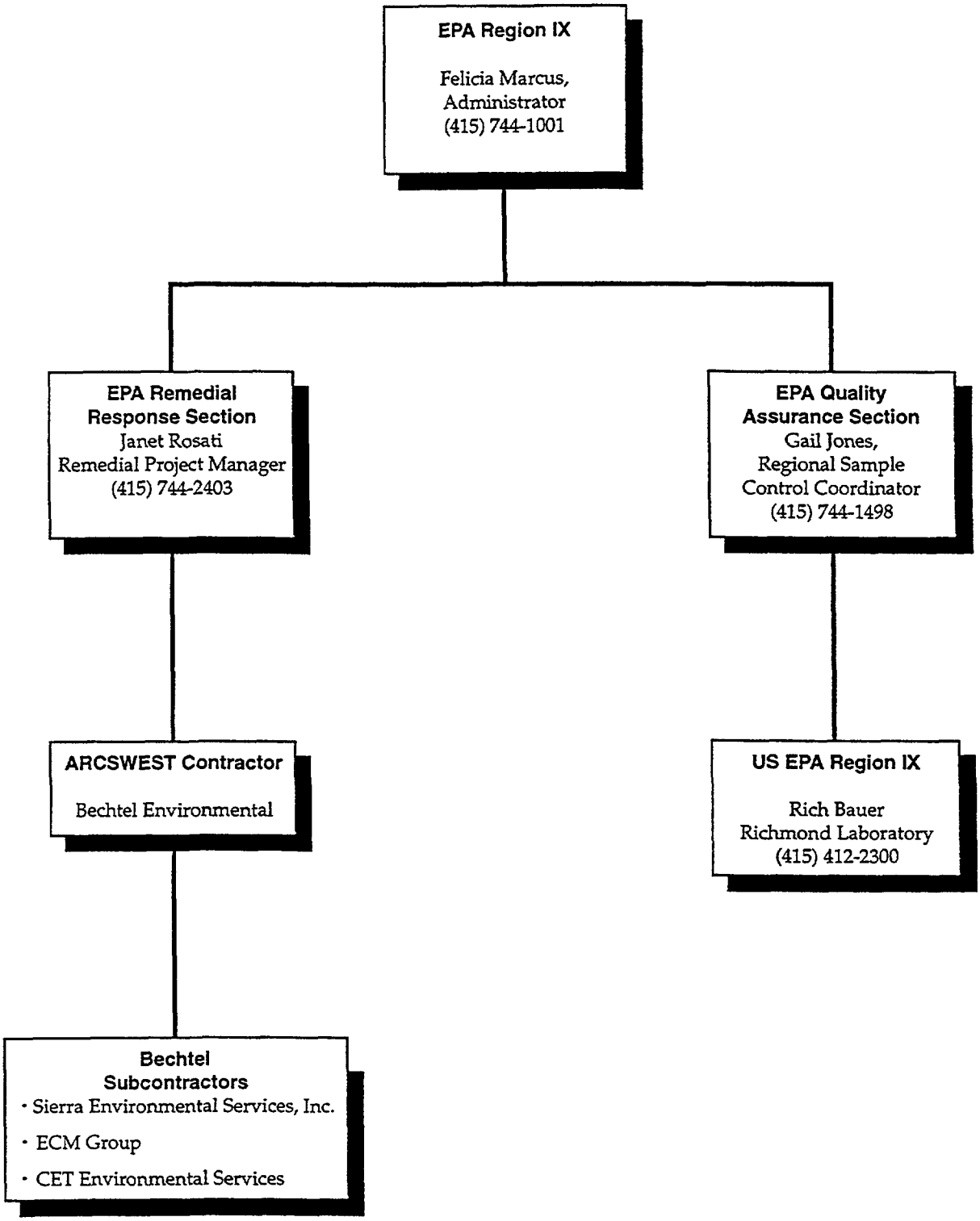

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FRONTIER FERTILIZER PROJECT

PROJECT ORGANIZATION

Job Number	Drawing No.	Rev.
20376	FIGURE 1-6	0

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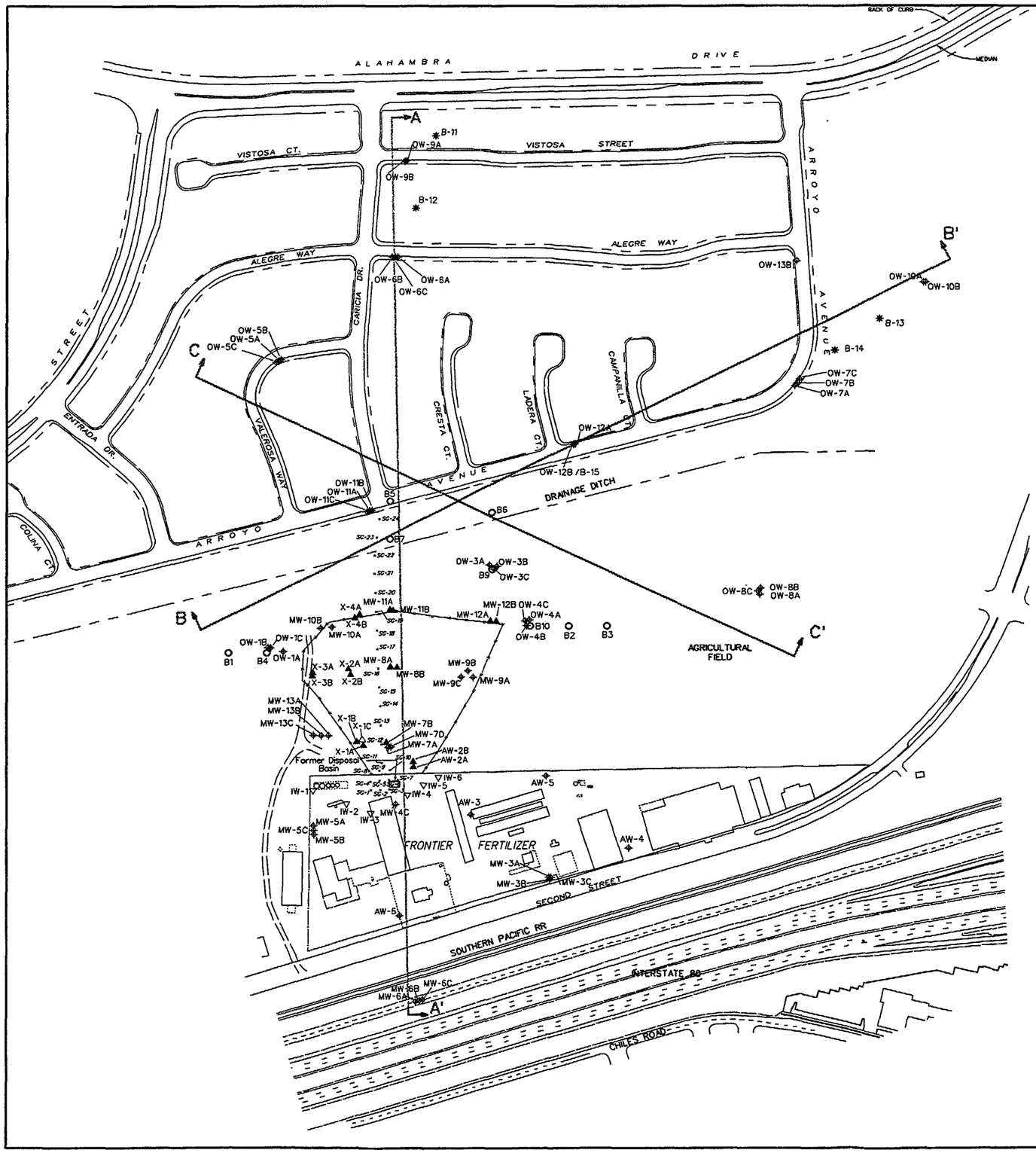

EXPLANATION

MW-10A	Monitoring Well
IW-6	Injection Well
X-2A	Extraction Well
X-1C	Inactive Extraction Well
B-13	SimulProbe™ Sample Location
SG-24	Soil Gas Sample Locaton
B3	Hydropunch Boring 1995 (used in some Hydrogeologic Cross-Sections)
A A'	Hydrogeologic Cross-Section Location (see Figures 3-1, 3-2 and 3-3)

N

100 0 100 200 400

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SAMPLE LOCATIONS

Job Number	Drawing No.	Rev.
20376	FIGURE 2-1	0

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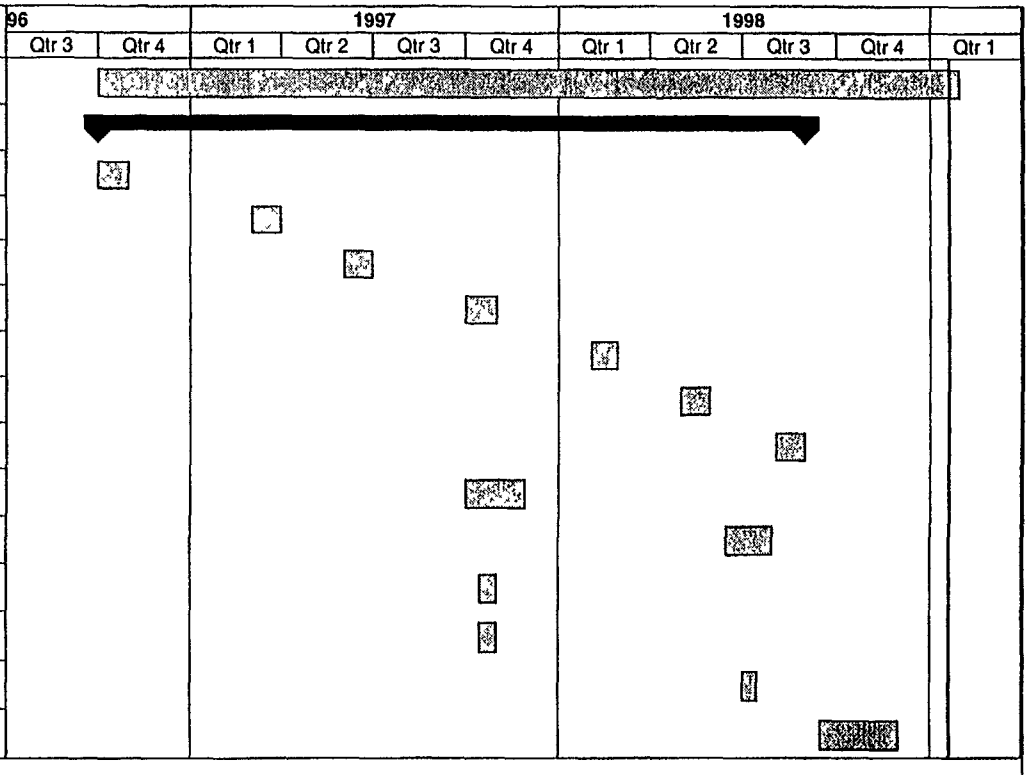
1/19/99da

ID	Task Name
1	**Interim Groundwater Treatment System O&M**
2	**Quarterly Groundwater Monitoring**
3	October 1996
4	March 1997
5	June 1997
6	October 1997
7	February 1998
8	May 1998
9	August 1998
10	**Groundwater Investigation, Phase II**
11	**Groundwater Investigation, Phase III**
12	**Flux Chamber Sampling**
13	**Soil Gas Sampling**
14	**Sudan IV DNAPL Study**
15	**DMLS Sampling**



Project:
Date: Tue 1/19/99

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

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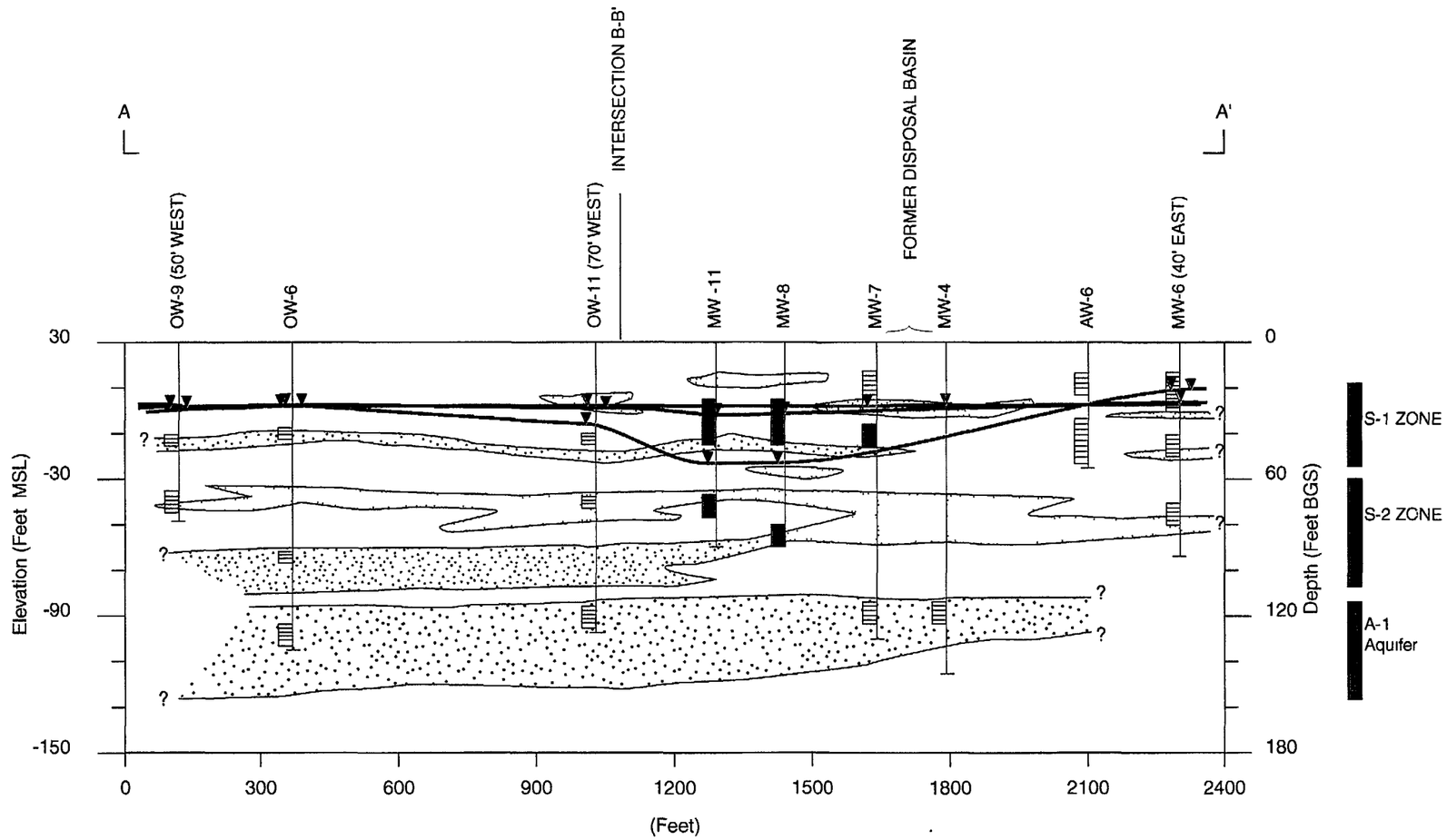
FRONTIER FERTILIZER PROJECT

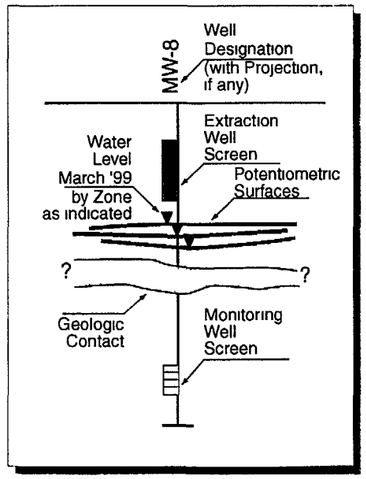
INVESTIGATION SCHEDULE

Job Number	Drawing No.	Rev
20376	Figure 2-2	0



EXPLANATION:

- CLAY AND SILT (very low K)
- SILTY SAND AND SILT (low K)
- SAND WITH SILT (medium K)
- SAND AND GRAVEL (high K)
- ▼▼▼ WATER LEVEL BY ZONE AS INDICATED March 1999)



NOTES:

1) Vertical exaggeration = 5x
2) BGS = Below Ground Surface
   MSL = Mean Sea Level
3) K = Hydraulic Conductivity

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FRONTIER FERTILIZER PROJECT

HYDROGEOLOGIC CROSS-SECTION A-A'

Job Number	Drawing No	Rev
20376	FIGURE 3-1	1

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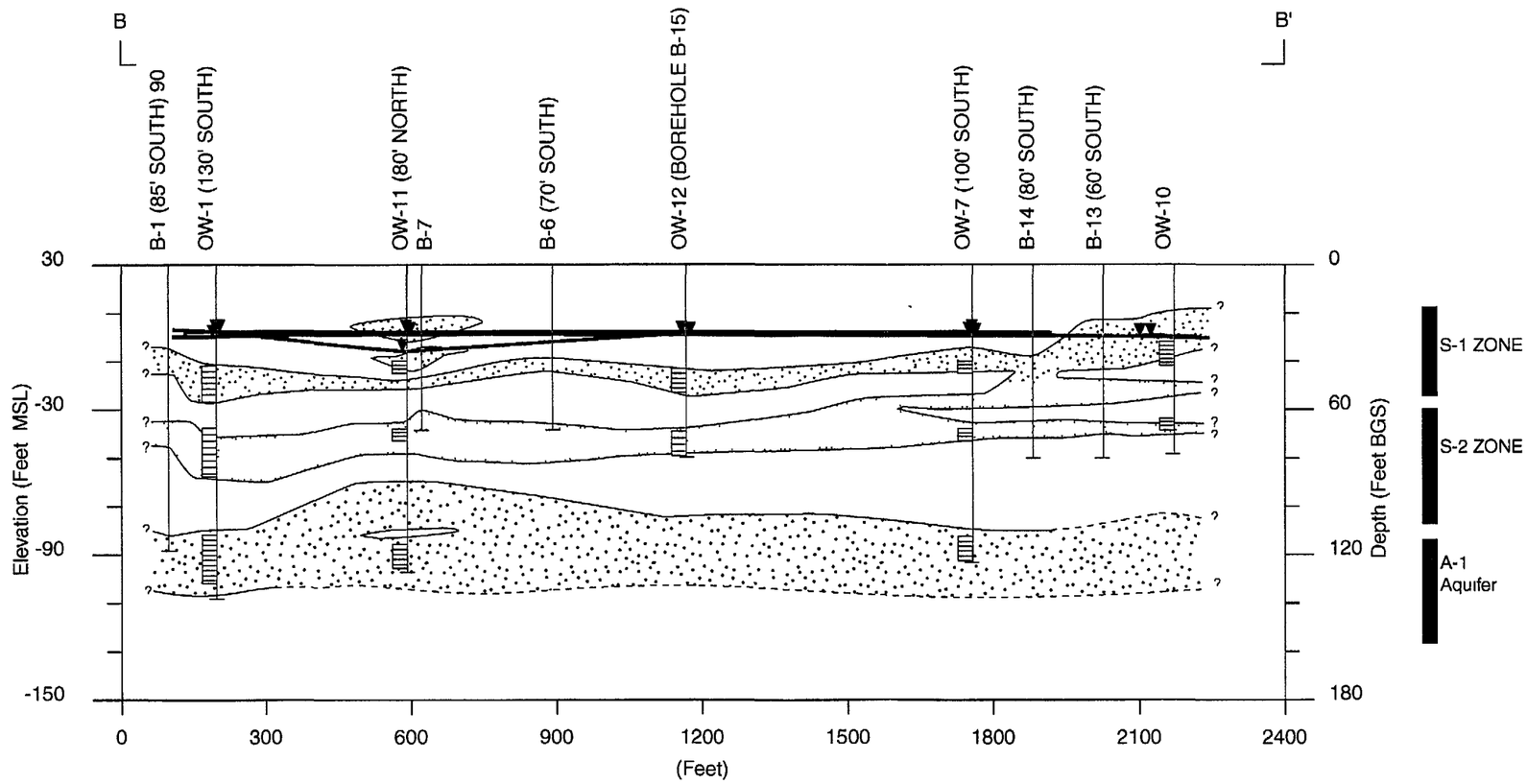
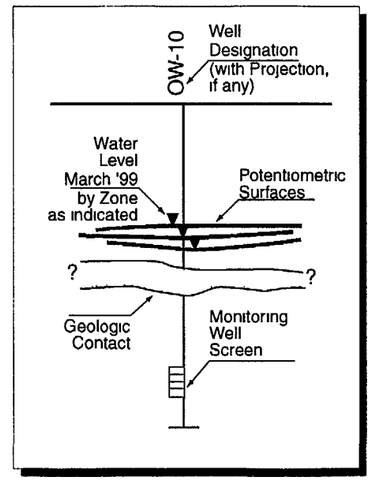
6/22/99a/da



EXPLANATION:

- CLAY AND SILT (very low K)
- SILTY SAND AND SILT (low K)
- SAND WITH SILT (medium K)
- SAND AND GRAVEL (high K)
- ▼▼▼ WATER LEVEL BY ZONE AS INDICATED (March 1999)



NOTES:

1) Vertical exaggeration = 5x
2) BGS = Below Ground Surface
   MSL = Mean Sea Level
3) K = Hydraulic Conductivity

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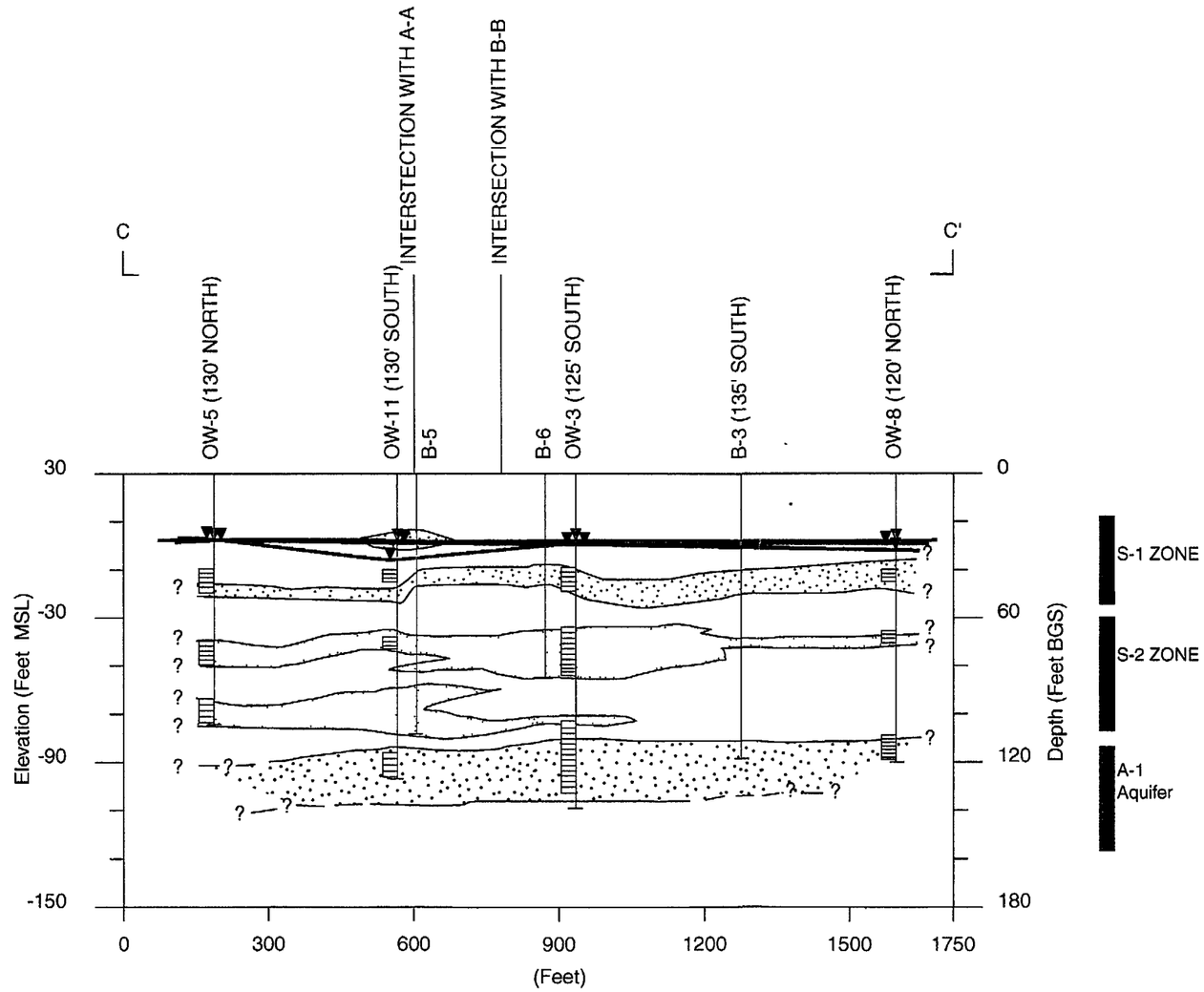
FRONTIER FERTILIZER PROJECT

HYDROGEOLOGIC CROSS-SECTION B-B'

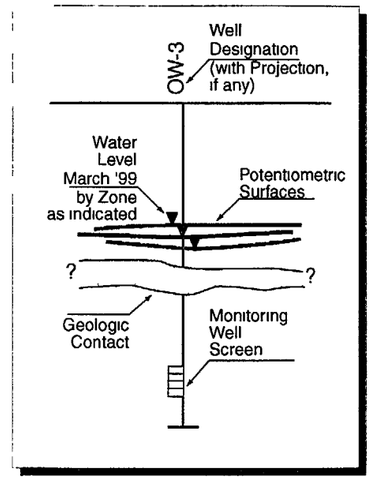
Job Number	Drawing No	Rev
20376	FIGURE 3-2	1

SFOSB061\BEI_DESIGN2\FRONTIER/RI98\xsecbbR1 ai
6/22/99ai/da



EXPLANATION:

- CLAY AND SILT (very low K)
- SILTY SAND AND SILT (low K)
- SAND WITH SILT (medium K)
- SAND AND GRAVEL (high K)
- ▼▼▼ WATER LEVEL BY ZONE AS INDICATED March 1999)



NOTES:

1) Vertical exaggeration = 5x
2) BGS = Below Ground Surface
   MSL = Mean Sea Level
3) K = Hydraulic Conductivity

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FRONTIER FERTILIZER PROJECT

HYDROGEOLOGIC CROSS-SECTION C-C'

Job Number	Drawing No	Rev
20376	FIGURE 3-3	1

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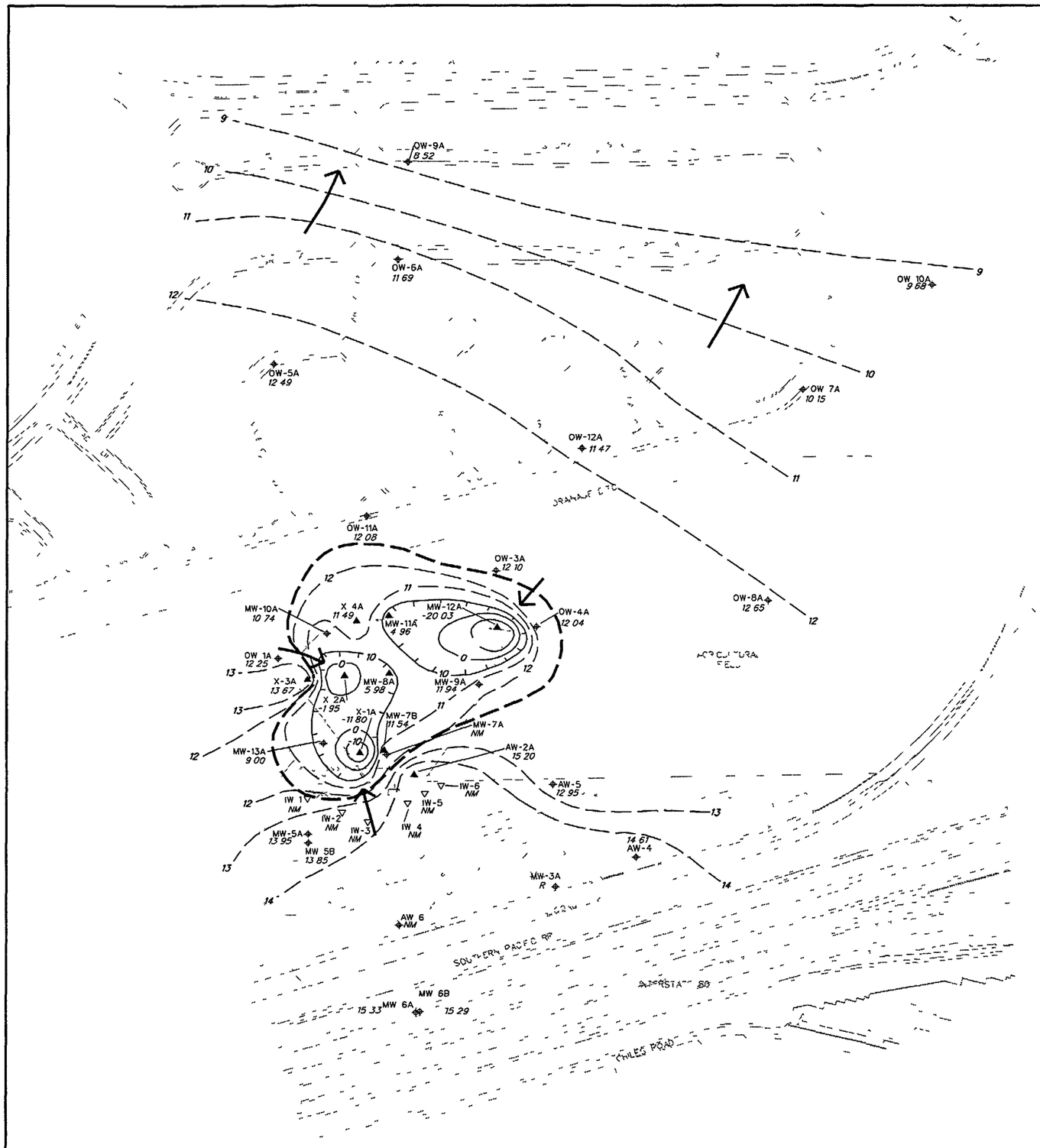
6/22/99ai/da



EXPLANATION

MW-10A 10 74	Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level
IW-6 NM	Injection Well
X-2A -1 95	Extraction Well, Groundwater Elevation (MSL) Represents 1 Week Average
-10	Groundwater Elevation Contour, 10 ft interval
14	Groundwater Elevation Contour, (Uncertain), 1 ft interval
	Estimated Extent of Groundwater Pumping Influence
	Direction of Groundwater Flow

NOTES:

1) NM = Not Measured

2) R = Rejected

N

100 0 100 200 400

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FRONTIER FERTILIZER
DAVIS, CALIFORNIA

GROUNDWATER ELEVATIONS IN THE S-1 ZONE, DECEMBER 1998

Job Number	Drawing No	Rev
20376	FIGURE 3-4	0

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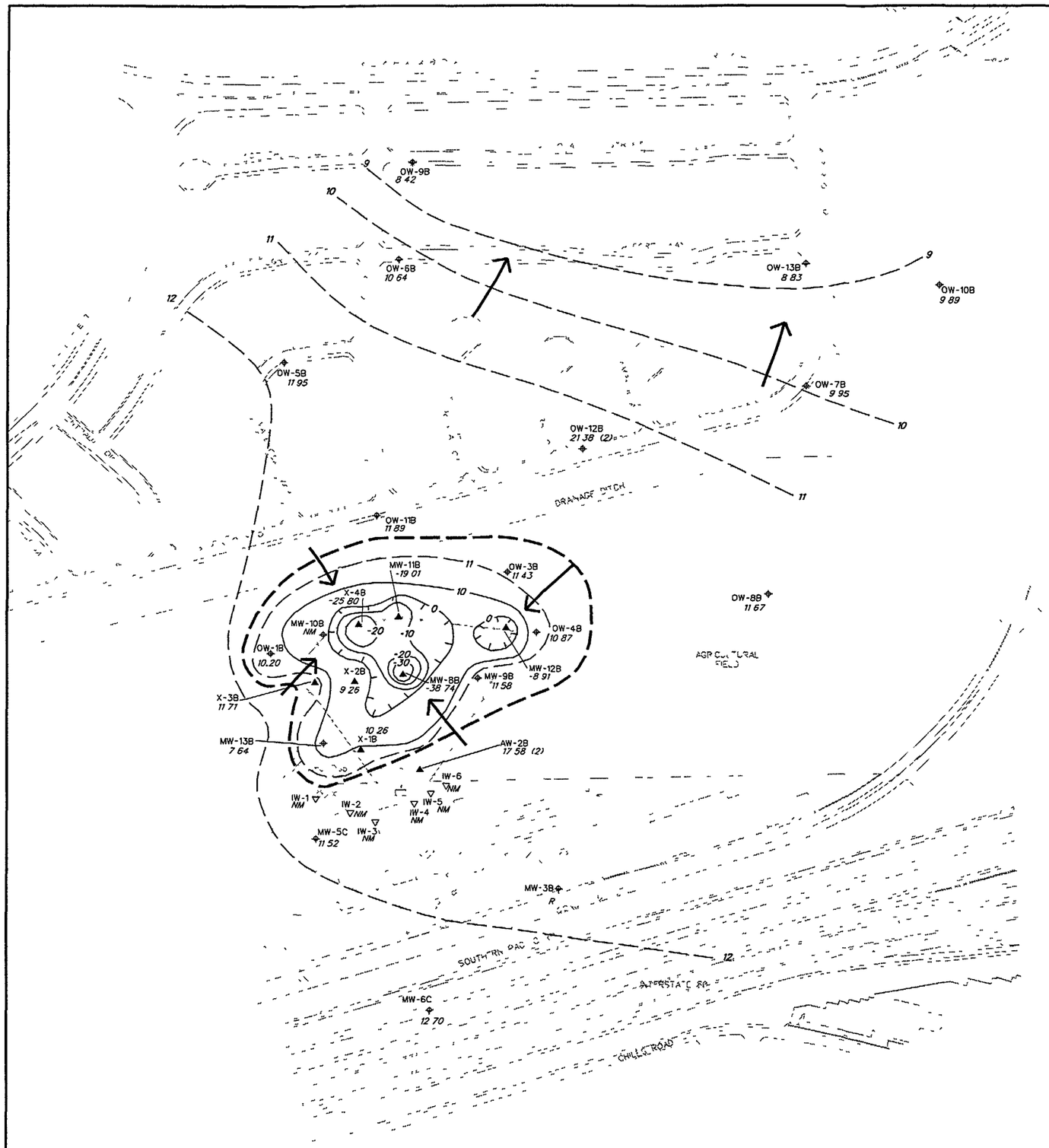

EXPLANATION

MW-9B 11 58 — Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level

IW-6 NM — Injection Well

X-1B 10 26 — Extraction Well, Groundwater Elevation (MSL) Represents 1 Week Average

10 — Groundwater Elevation Contour, 10 ft interval

12 — Groundwater Elevation Contour, (Uncertain), 1 ft interval

Estimated Extent of Groundwater Pumping Influence

Direction of Groundwater Flow

NOTES:

1) NM = Not Measured.

2) Water elevation for OW-12B and AW-2B questionable

3) R = Rejected.

N

100 0 100 200 400

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GROUNDWATER ELEVATIONS IN THE S-2 ZONE, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-5	0

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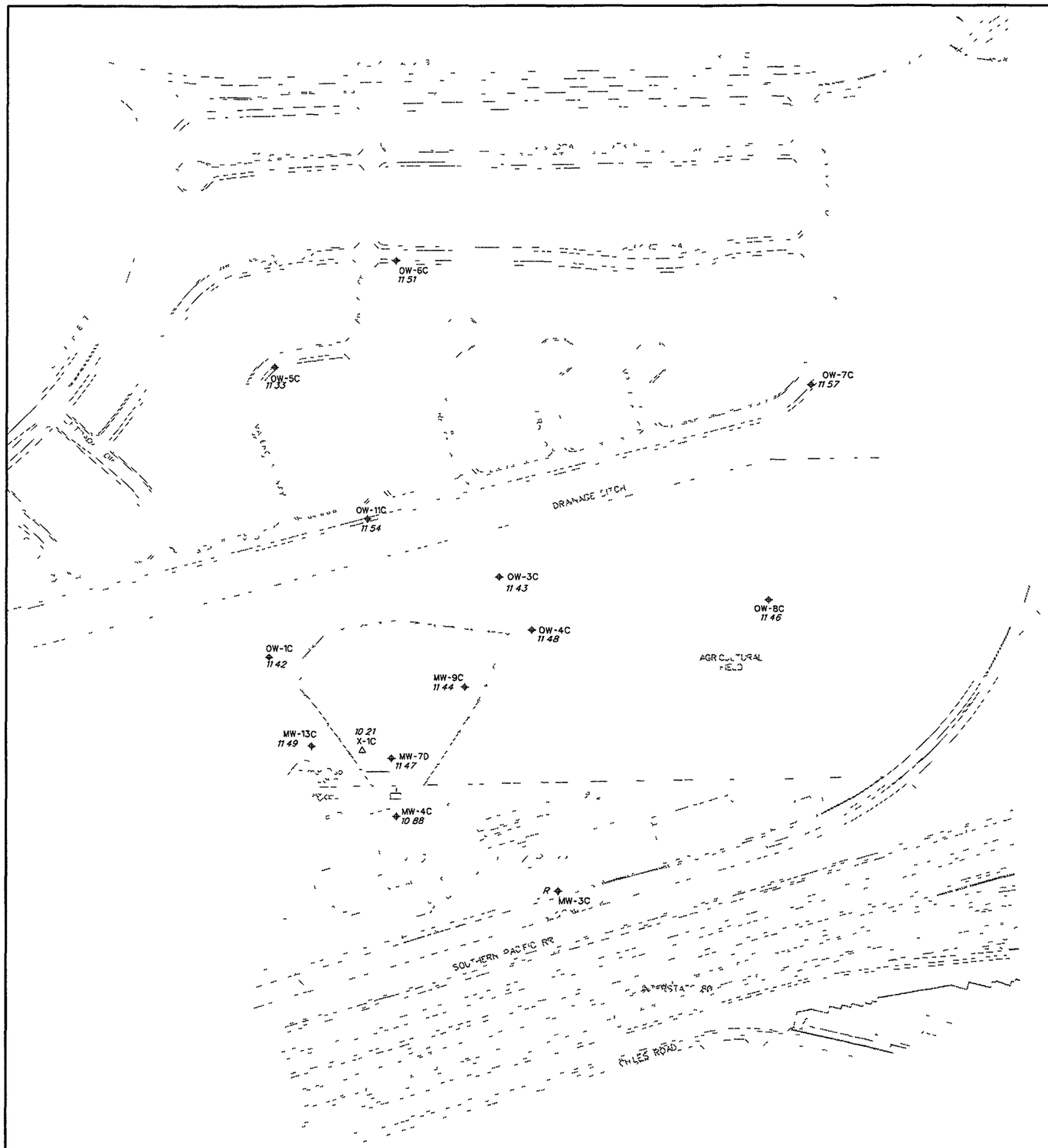

EXPLANATION

MW-7D
11.47 — Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level

X-1C
10 21 — Extraction Well with Groundwater Elevation in Feet Above Mean Sea Level. Groundwater Elevation (MSL) Represents 1 Week Average, Not Operating

NOTES:

1) There is no discernable trend or gradient suggested by water levels No groundwater contours constructed

2) R = Rejected

N

100 0 100 200 400

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GROUNDWATER ELEVATIONS IN THE A-1 AQUIFER, DECEMBER 1998

Job Number	Drawing No.	Rev.
20376	FIGURE 3-6	0

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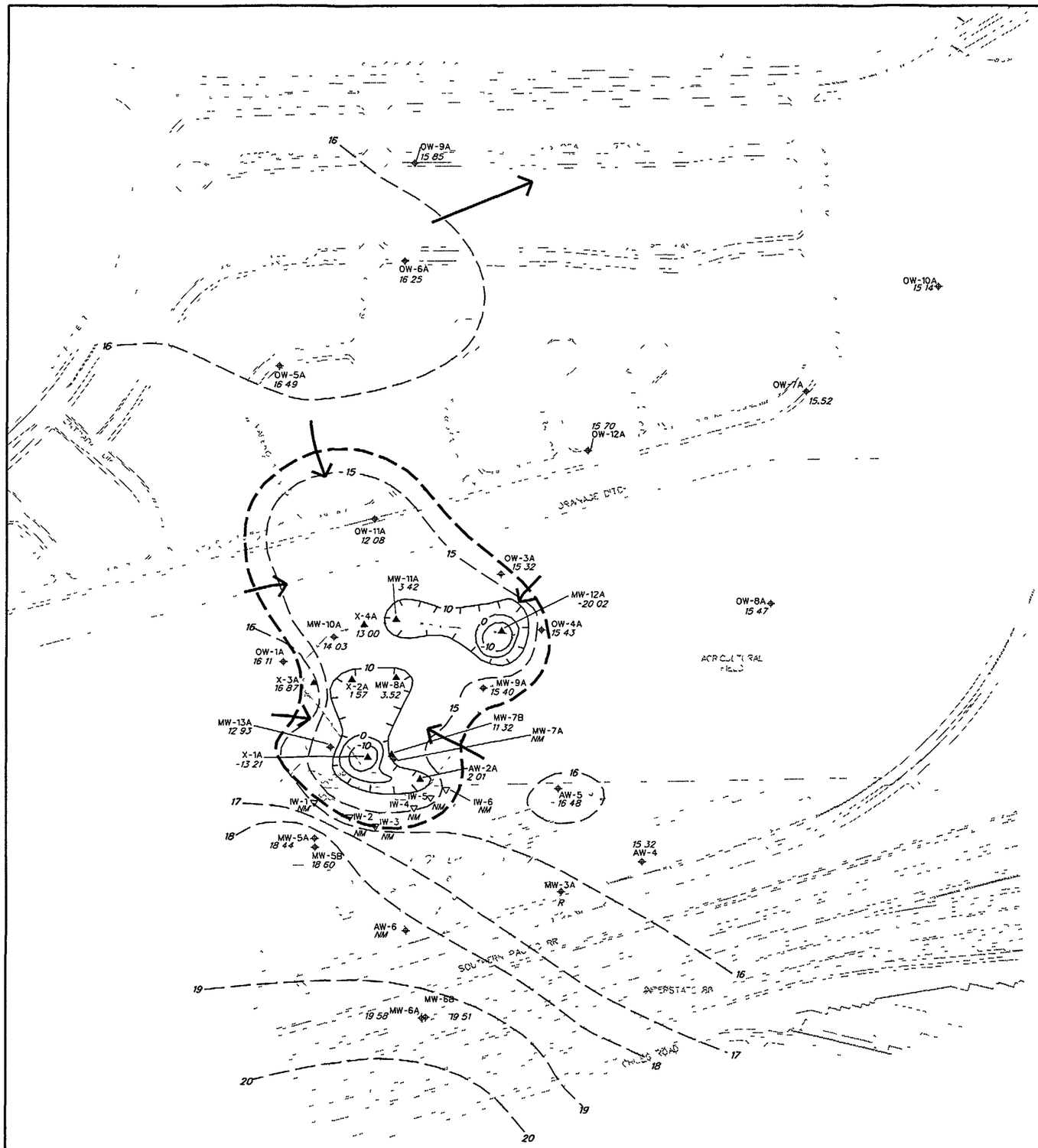

EXPLANATION

MW-10A 14 03	Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level
IW-6 NM	Injection Well
X-2A 1.57	Extraction Well, Groundwater Elevation (MSL) Represents 1 Week Average
10	Groundwater Elevation Contour, 10 ft interval
17	Groundwater Elevation Contour, (Uncertain), 1 ft interval
	Estimated Extent of Groundwater Pumping Influence
	Direction of Groundwater Flow

NOTES:

1) NM - Not Measured.

2) R = Rejected

N

100 0 100 200 400

Bechtel
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FRONTIER FERTILIZER
DAVIS, CALIFORNIA

GROUNDWATER ELEVATIONS IN THE S-1 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-7	0

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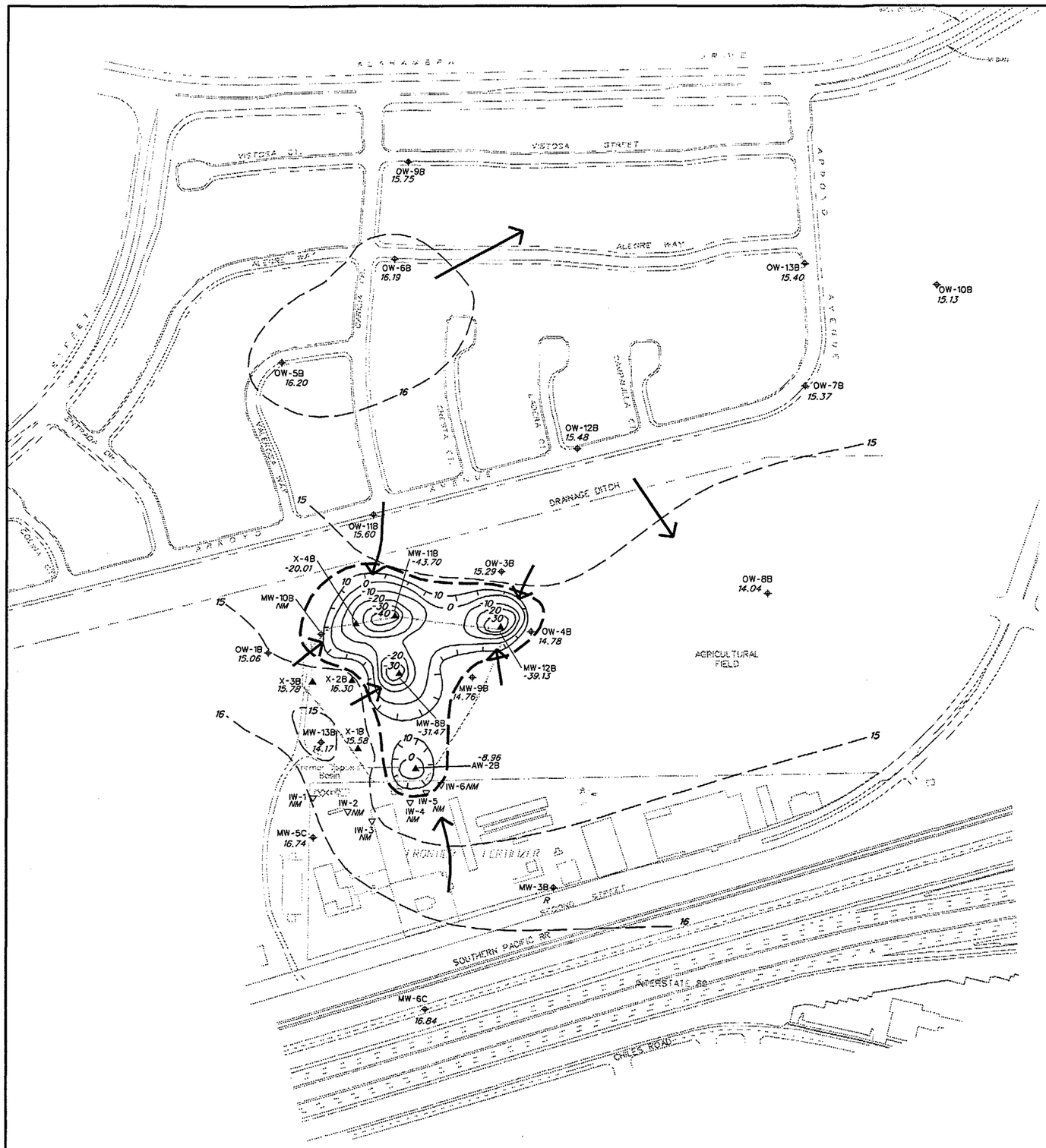

EXPLANATION

MW-9B 14.76	Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level
IW-6 NM	Injection Well
X-1B 15.58	Extraction Well, Groundwater Elevation (MSL) Represents 1 Week Average
10	Groundwater Elevation Contour, 10 ft interval
17	Groundwater Elevation Contour, (Uncertain), 1 ft interval
	Estimated Extent of Groundwater Pumping Influence
	Direction of Groundwater Flow

NOTES:

1) NM = Not Measured.

2) R = Rejected

N

100 0 100 200 400

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DAVIS, CALIFORNIA

GROUNDWATER ELEVATIONS IN THE S-2 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-8	0

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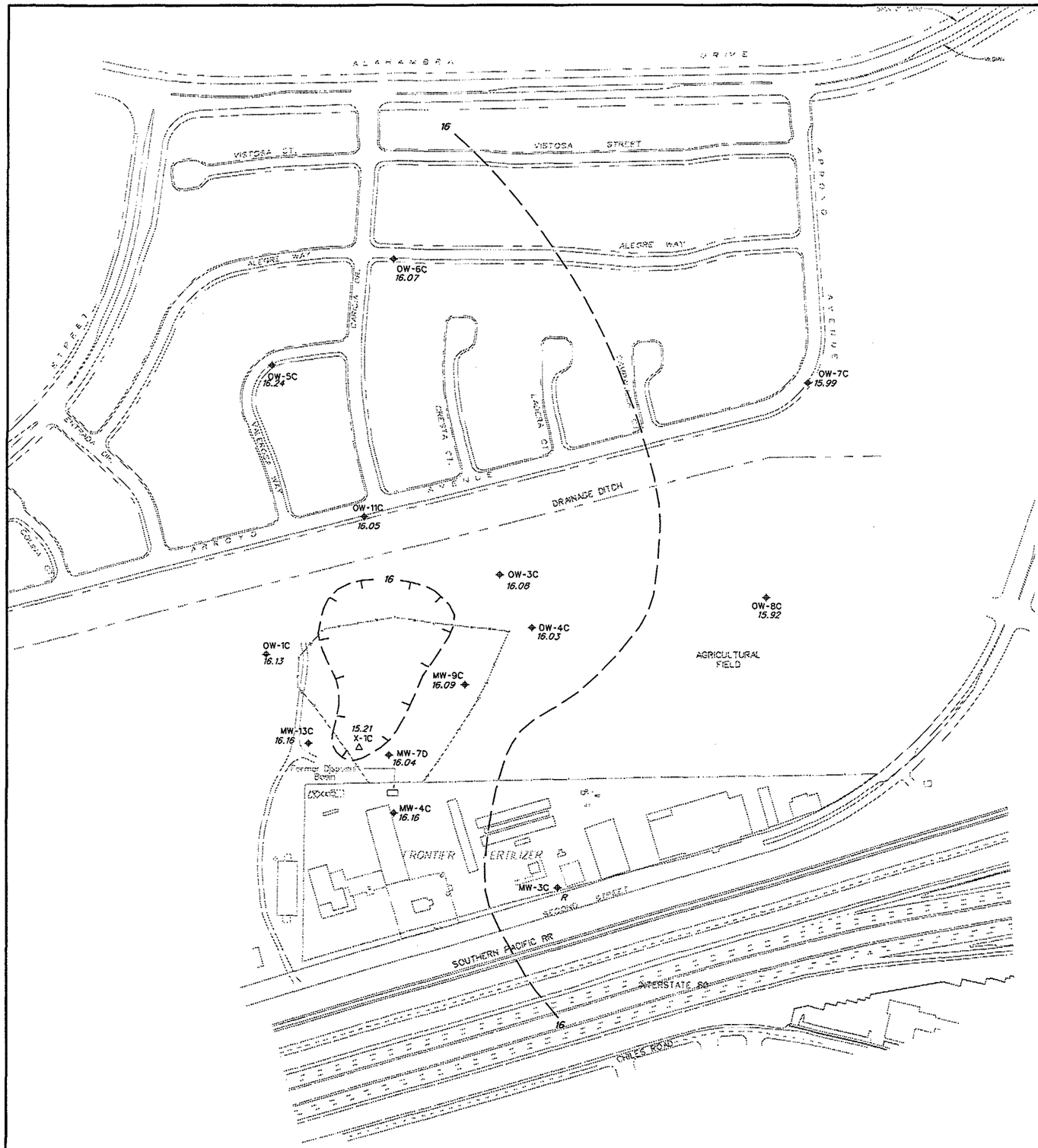

EXPLANATION

MW-7D 16.04 — Monitoring Well with Groundwater Elevation in Feet Above Mean Sea Level

X-1C 15.21 △ — Extraction Well with Groundwater Elevation in Feet Above Mean Sea Level. Groundwater Elevation (MSL) Represents 1 Week Average, Not Operating

16 — Groundwater Elevation Contour, Poorly Defined

NOTES:

1) There is little to no discernable trend or gradient suggested by the water levels.

2) R = Rejected

N

100 0 100 200 400

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DAVIS, CALIFORNIA

GROUNDWATER ELEVATIONS IN THE A-1 AQUIFER, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-9	0

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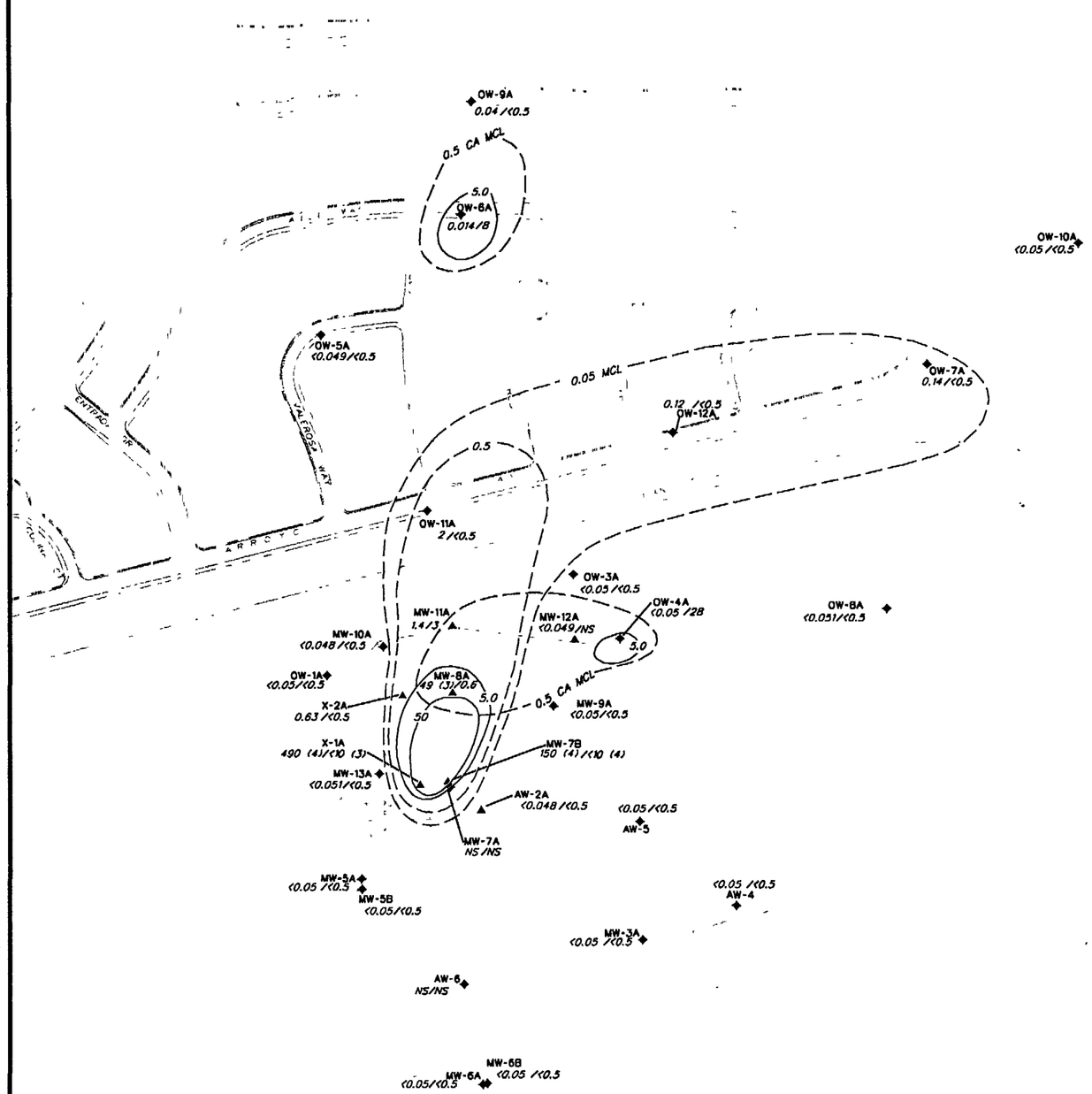

EXPLANATION

MW-9A ⌖	Monitoring Well
X-2A ▲	Extraction Well
50	1,2 Dibromethane (EDB) Concentration Contour, December 1998 (Dashed Where Uncertain)
50	Carbon Tetrachloride (CCl_4) Concentration Contour, December 1998 (Dashed Where Uncertain)
OW-5A ⌖ <0.049 / <0.5 (EDB / CCl_4)	Concentrations of EDB/CCl_4, in ug/L, measured December 1998

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method, unless otherwise noted.
3) Used 25 ml purge method.
4) Used 5 ml purge method.
5) NS - Not Sampled
6) < - Not Detected
7) MCL - Maximum Contaminant Level (40 CFR 141.61)
8) CA MCL - California Maximum Contaminant Level (Title 22 CFR 64444.5)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE S-1 ZONE, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-10	0

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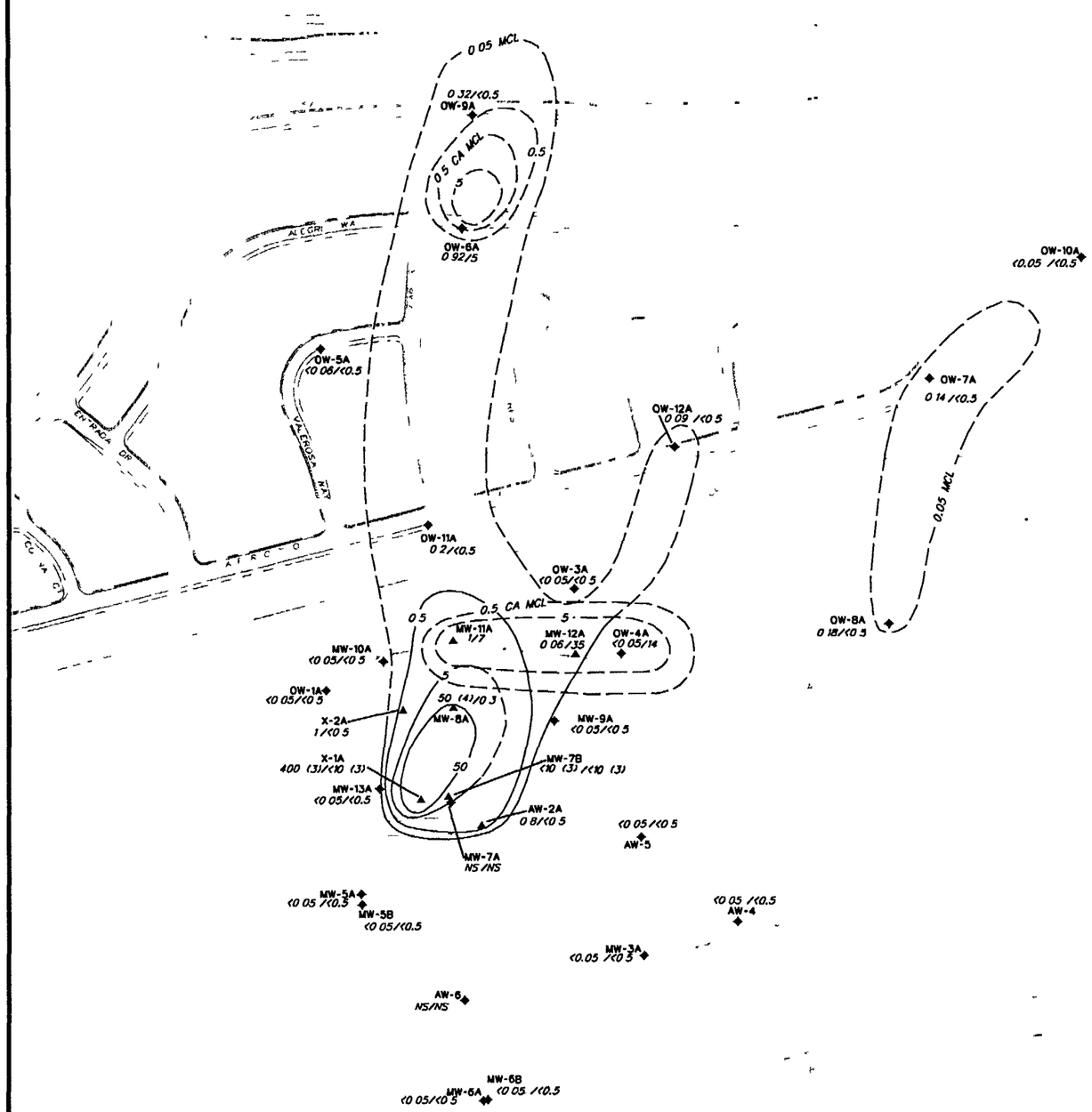

EXPLANATION

MW-9A — Monitoring Well

X-2A — Extraction Well

0.5 — 1,2 Dibromethane (EDB) Concentration Contour, March 1999 (Dashed Where Uncertain)

5 — Carbon Tetrachloride (CCl_4) Concentration Contour, March 1999 (Uncertain)

OW-5A <0.06/<0.5 (EDB / CCl_4) — Concentrations of EDB/CCl_4, in ug/L, measured March 1999.

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method, unless otherwise noted.
3) Used 5 ml purge method.
4) Used 25 ml purge method.
5) NS - Not Sampled
6) < - Not Detected
7) MCL - Maximum Contaminant Level (40 CFR 141.61)
8) CA MCL - California Maximum Contaminant Level (Title 22 CFR 64444.5)

N

100 0 100 200 400

Bechtel
SAN FRANCISCO

FRONTIER FERTILIZER
DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE S-1 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-11	0

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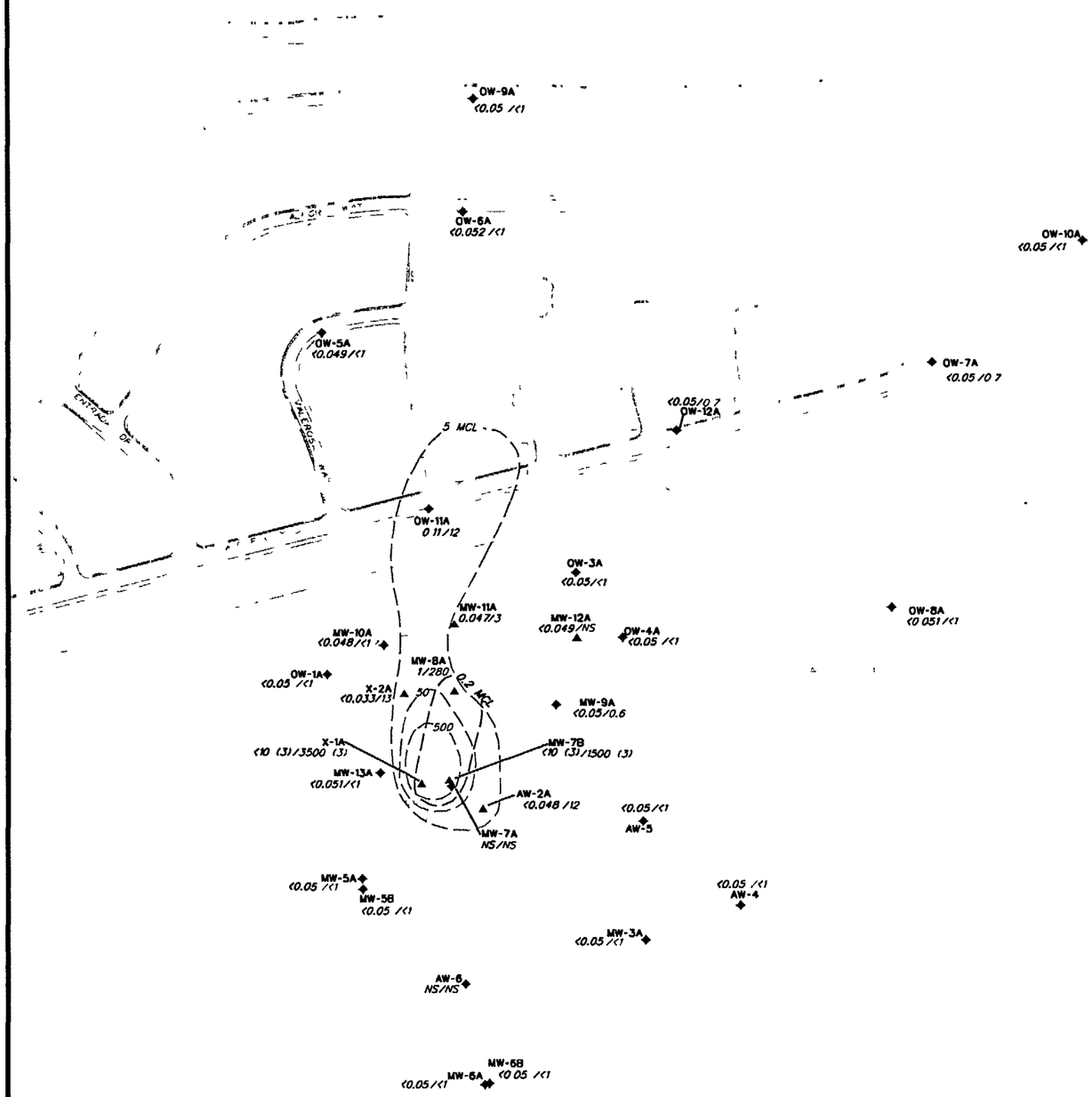

EXPLANATION

MW-9A ⌖ Monitoring Well

X-2A ▲ Extraction Well

0.2 MCL — Dibromochloropropane (DBCP) Concentration Contour, December 1998 (Uncertain)

50 — 1,2-Dichloropropane (DCP) Concentration Contour, December 1998 (Uncertain)

OW-5A ⌖ <0.049 / <1 (DBCP / DCP) — Concentrations of DBCP/DCP, in ug/L

NOTES:

1) DBCP concentrations determined using EPA Method 504, unless otherwise noted.

2) DCP concentrations determined using 25 ml purge method, unless otherwise noted.

3) Used 5 ml purge method.

4) NS - Not Sampled

5) < - Not Detected

6) MCL - Maximum Contaminant Level (40 CFR 141.61)

N

100 0 100 200 400

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DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE S-1 ZONE, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-12	0

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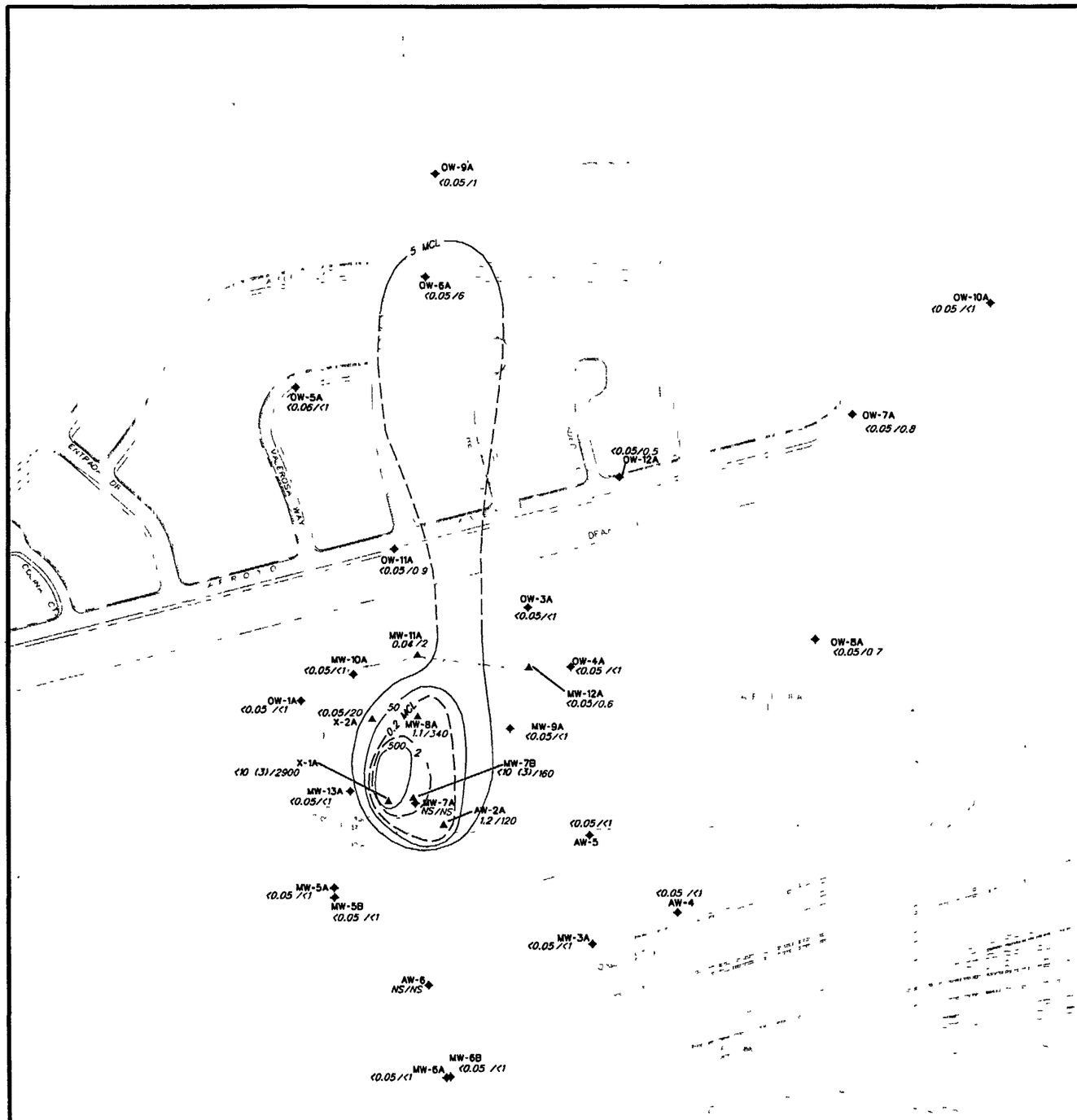

EXPLANATION

MW-9A — Monitoring Well

X-2A — Extraction Well

2 — Dibromochloropropane (DBCP) Concentration Contour, March 1999 (Dashed Where Uncertain)

50 — 1,2-Dichloropropane (DCP) Concentration Contour, March 1999 (Dashed Where Uncertain)

OW-5A <0.06/<1 (DBCP / DCP) — Concentrations of DBCP/DCP, in ug/L

NOTES:

1) DBCP concentrations determined using EPA Method 504, unless otherwise noted.
2) DCP concentrations determined using 25 ml purge method, unless otherwise noted.
3) Used 25 ml purge method.
4) NS = Not Sampled
5) < = Not Detected
6) MCL = Maximum Contaminant Level (40 CFR 141.61)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE S-1 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-13	0

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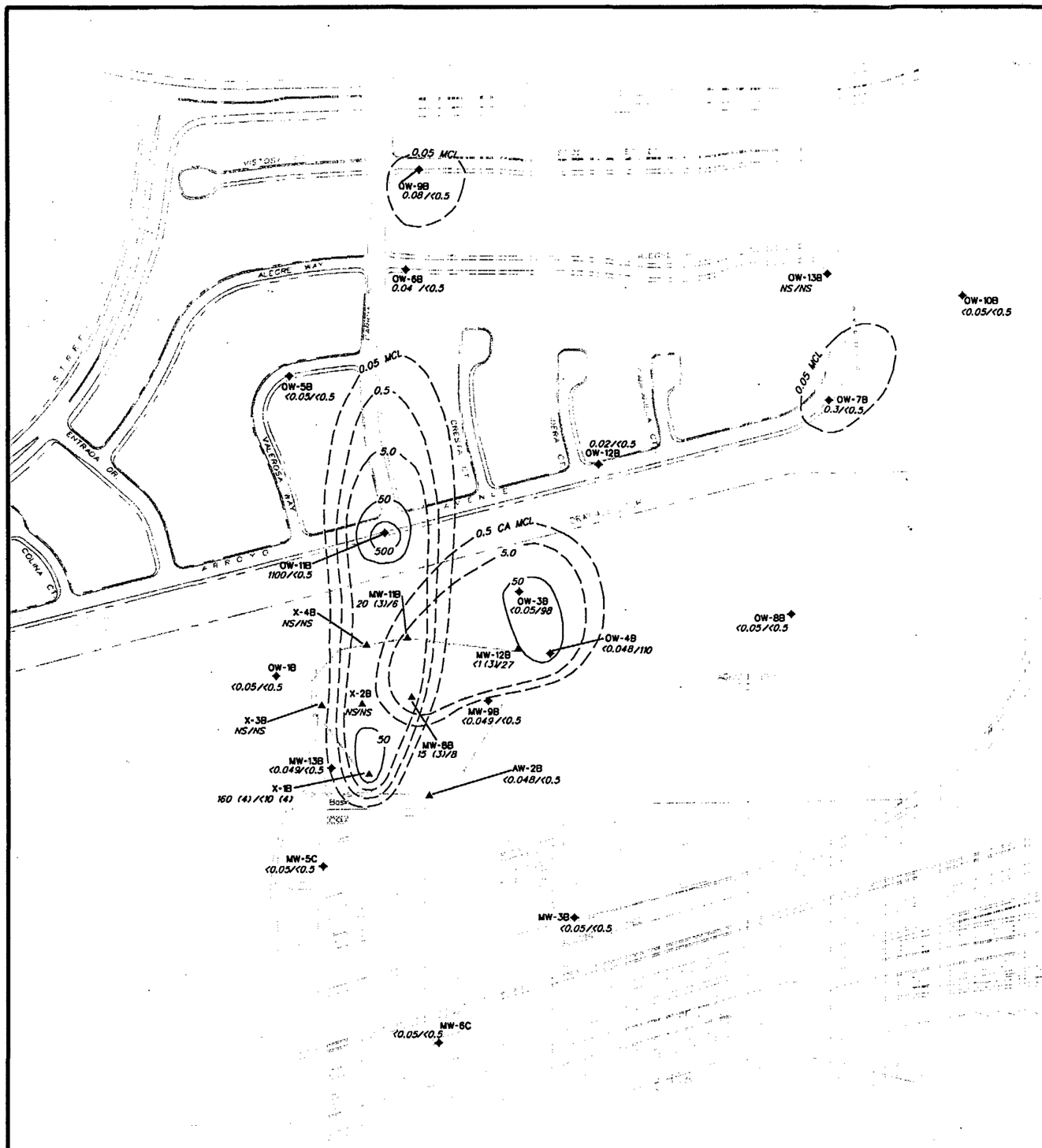
6/22/99da



EXPLANATION

MW-9B ⌖	Monitoring Well
X-2B ▲	Extraction Well
50	1,2 Dibromethane (EDB) Concentration Contour, December 1998 (Dashed Where Uncertain)
50	Carbon Tetrachloride (CCl_4) Concentration Contour, December 1998 (Dashed Where Uncertain)
OW-7B ⌖ 0.3 /<0.5 (EDB / CCl_4)	Concentrations of EDB/CCl_4, in ug/L measured December 1998

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method, unless otherwise noted.
3) Used 25 ml purge method.
4) Used 5 ml purge method.
5) NS - Not Sampled
6) < - Not Detected
7) MCL - Maximum Contaminant Level (40 CFR 141.61)
8) CA MCL - California Maximum Contaminant Level (Title 22 CFR 64444.5)

N

100 0 100 200 400

Bechtel
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FRONTIER FERTILIZER
DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE S-2 ZONE, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-14	0

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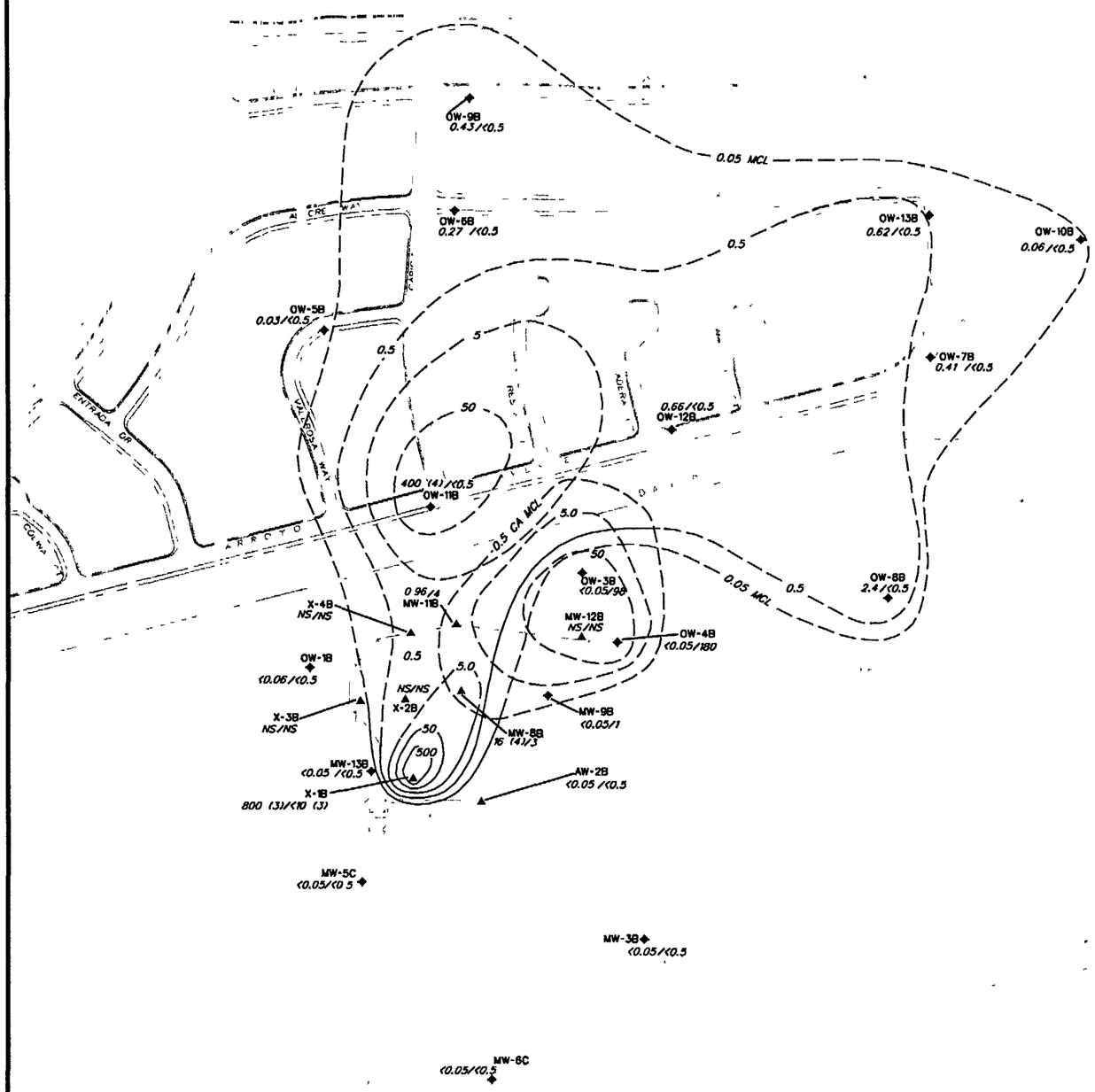
8/22/99de



EXPLANATION

MW-9B ⌖ Monitoring Well

X-2B ▲ Extraction Well

500 — 1,2 Dibromethane (EDB) Concentration Contour, March 1999 (Dashed Where Uncertain)

50 — Carbon Tetrachloride (CCl_4) Concentration Contour, March 1999 (Uncertain)

OW-7B ⌖ 0.41/<0.5 — Concentrations of EDB/CCl_4, in ug/L measured March 1999 (EDB / CCl_4)

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method, unless otherwise noted.
3) Used 5 ml purge method.
4) Used 25 ml purge method.
5) NS - Not Sampled
6) < - Not Detected
7) MCL - Maximum Contaminant Level (40 CFR 141.61)
8) CA MCL - California Maximum Contaminant Level (Title 22 CFR 64444.5)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE S-2 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-15	0

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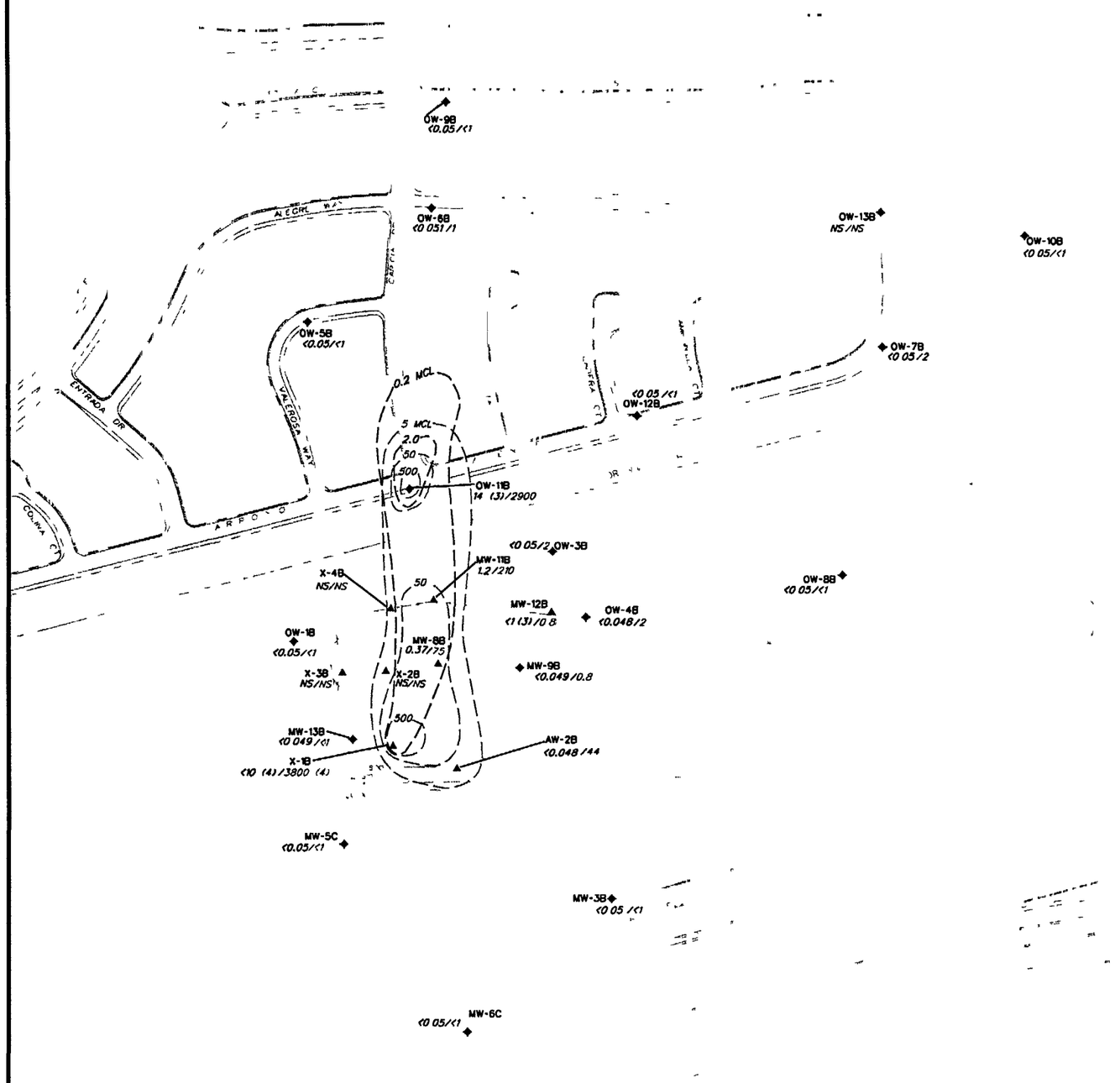

EXPLANATION

MW-9B — Monitoring Well

X-2B — Extraction Well

2 — Dibromochloropropane (DBCP) Concentration Contour, December 1998 (Uncertain)

50 — 1,2-Dichloropropane (DCP) Concentration Contour, December 1998 (Uncertain)

OW-4B <0.048/2 (DBCP / DCP) — Concentrations of DBCP/DCP, in ug/L

NOTES:

1) DBCP concentrations determined using EPA Method 504, unless otherwise noted.
2) DCP concentrations determined using 25 ml purge method, unless otherwise noted.
3) Used 25 ml purge method.
4) Used 5 ml purge method.
5) NS - Not Sampled
6) < - Not Detected
7) MCL - Maximum Contaminant Level (40 CFR 141.61)

N

100 0 100 200 400

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DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE S-2 ZONE, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-16	0

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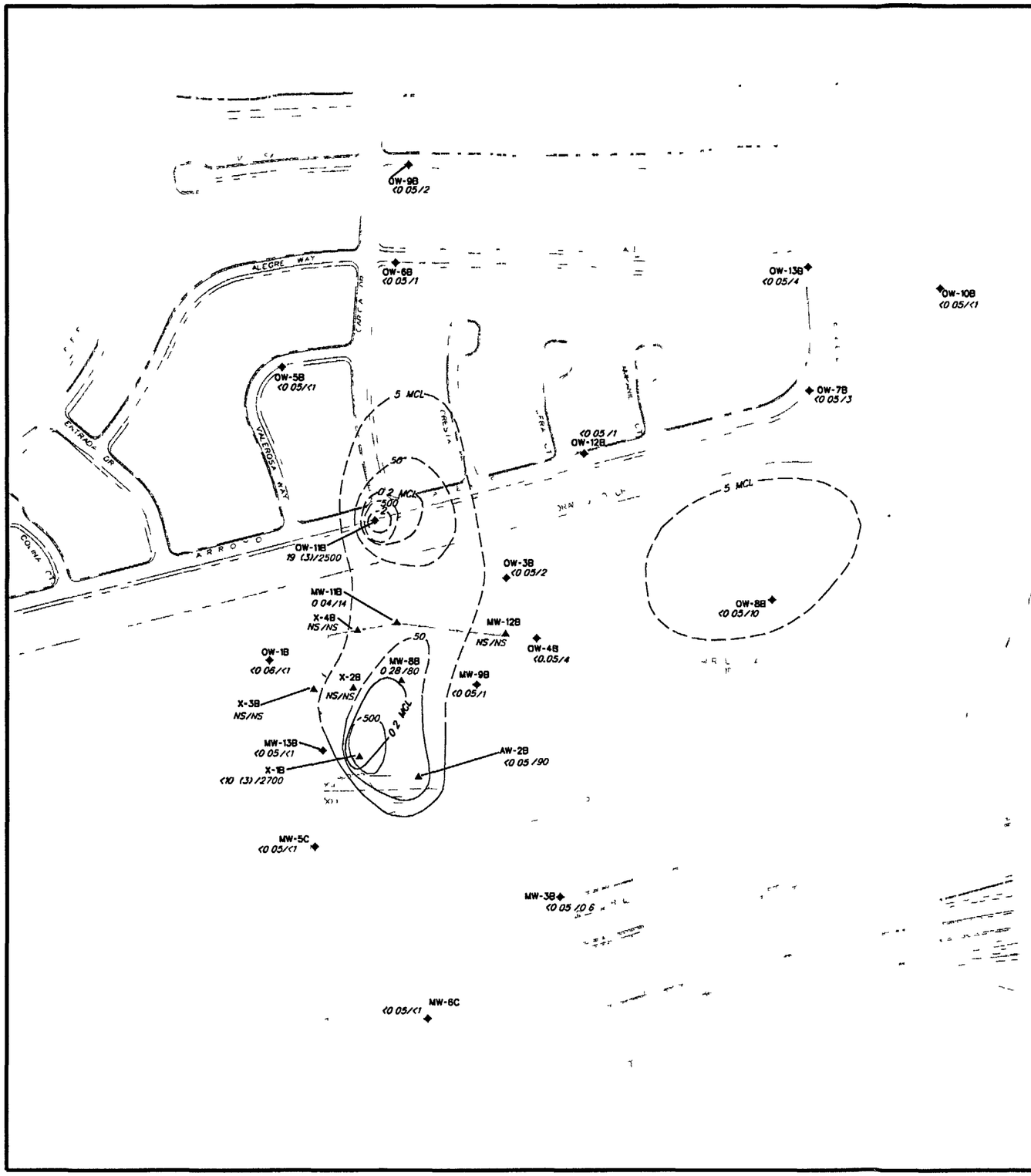
6/22/99da



EXPLANATION

MW-9B ⌖	Monitoring Well
X-2B ▲	Extraction Well
2	Dibromochloropropane (DBCP) Concentration Contour, March 1999 (Dashed Where Uncertain)
50	1,2-Dichloropropane (DCP) Concentration Contour, March 1999 (Dashed Where Uncertain)
OW-7B ⌖ <0.05/3 (DBCP / DCP)	Concentrations of DBCP/DCP, in ug/L

NOTES:

1) DBCP concentrations determined using EPA Method 504, unless otherwise noted.

2) DCP concentrations determined using 25 ml purge method, unless otherwise noted.

3) Used 25 ml purge method.

4) NS = Not Sampled

5) < = Not Detected

6) MCL = Maximum Contaminant Level (40 CFR 141 61)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE S-2 ZONE, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-17	0

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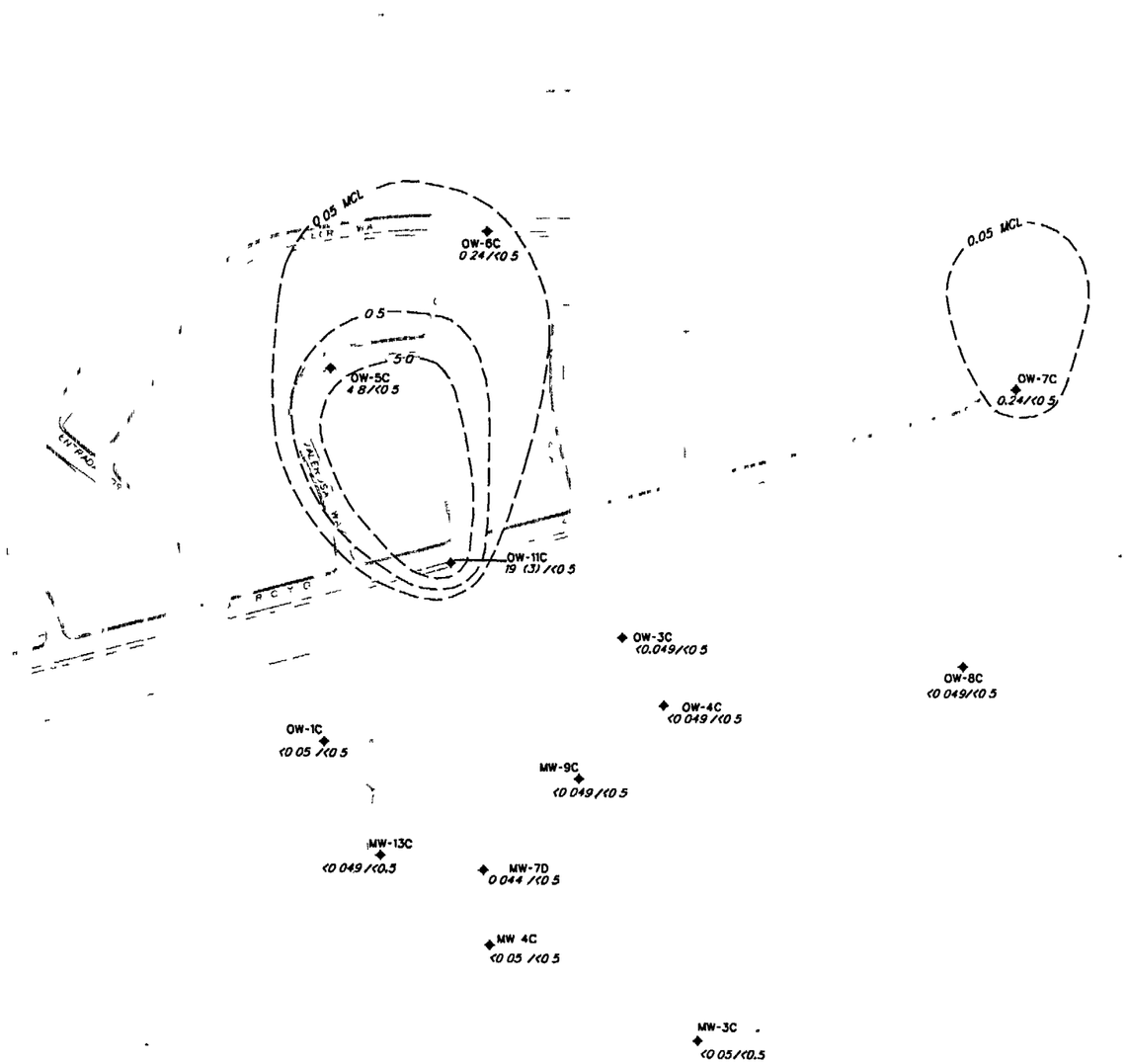

EXPLANATION

MW-7D — Monitoring Well

0.5 — Interpreted 1,2 Dibromethane (EDB) Concentration Contour, December 1998 (Dashed Where Inferred, Queried Where Uncertain)

OW-8C <0.049/<0.5 (EDB / CCl_4) — Concentrations of EDB/CCl_4, in ug/L measured December 1998

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method.
3) Used 25 ml purge method
4) < = Not Detected
5) MCL = Maximum Contaminant Level (40 CFR 141.61)

N

100 0 100 200 400

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FRONTIER FERTILIZER
DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE A-1 AQUIFER, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-18	0

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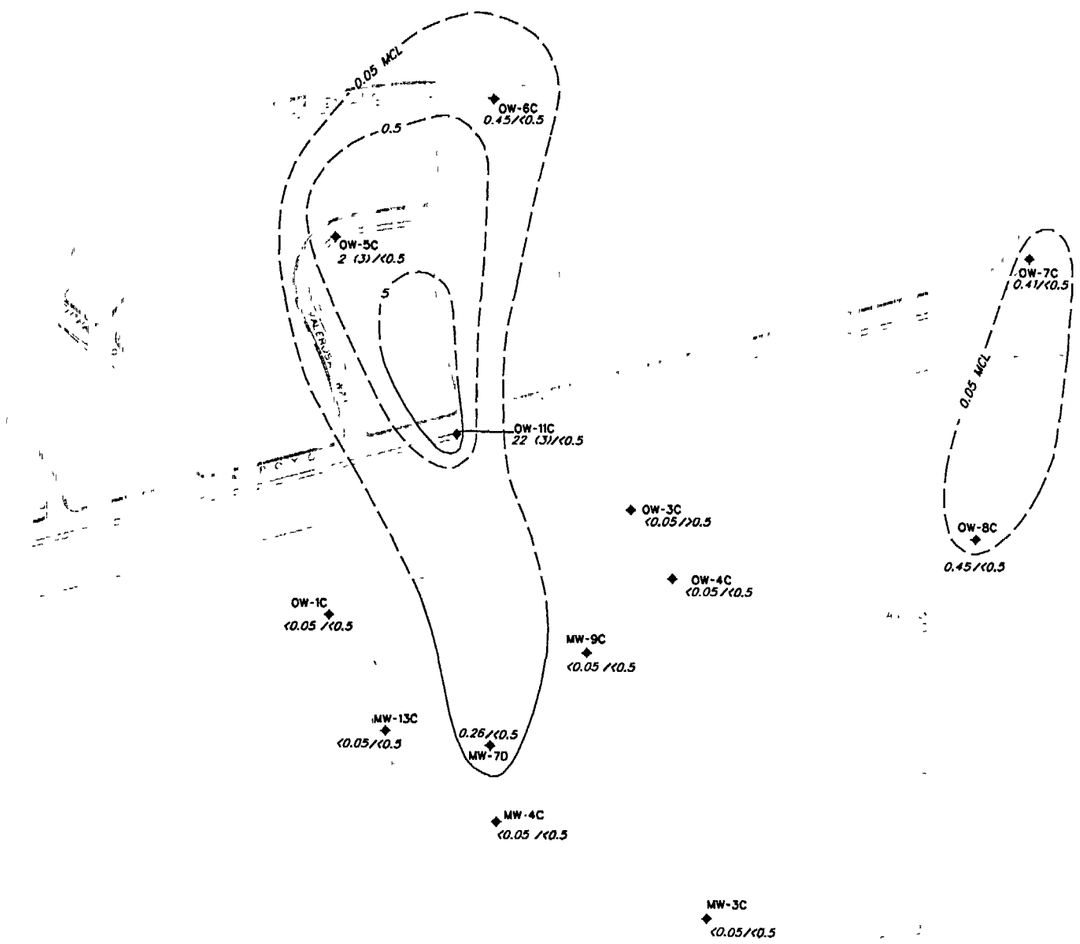
6/22/99da



EXPLANATION

MW-7D — Monitoring Well

0.5 — 1,2 Dibromethane (EDB) Concentration Contour, March 1999 (Dashed Where Uncertain)

OW-8C 0.45/<0.5 (EDB / CCl_4) — Concentrations of EDB/CCl_4, in ug/L measured March 1999

NOTES:

1) EDB concentrations determined using EPA Method 504, unless otherwise noted.
2) CCl_4 by 25 ml purge method, unless otherwise noted.
3) Used 25 ml purge method.
4) Carbon tetrachloride is not shown because it was not detected above the MCL in any of the wells sampled.
5) < = Not Detected
6) MCL = Maximum Contaminant Level (40 CFR 141.61)

N

100 0 100 200 400

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DAVIS, CALIFORNIA

EDB AND CCl_4 IN THE A-1 AQUIFER, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-19	0

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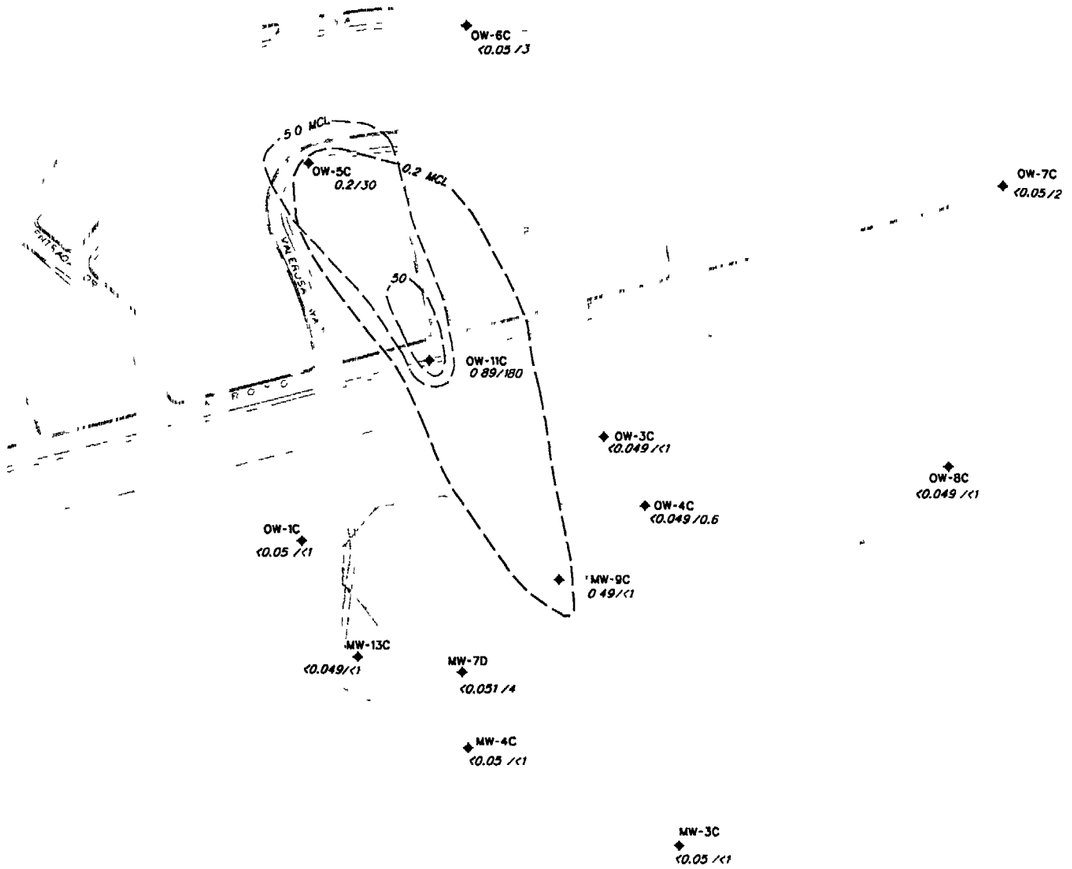
6/22/99da



EXPLANATION

MW-7D — Monitoring Well

0.2 MCL — Dibromochloropropane (DBCP) Concentration Contour, December 1998 (Uncertain)

50 — 1,2-Dichloropropane (DCP) Concentration Contour, December 1998 (Uncertain)

OW-8C <0.049 /<1 (DBCP / DCP) — Concentrations of DBCP/DCP, in ug/L

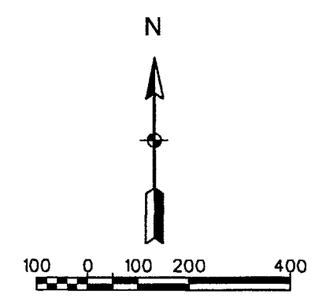
NOTES:

1) DBCP concentrations determined using EPA Method 504.

2) DCP concentrations determined using 25 ml purge method.

3) < = Not Detected

4) MCL = Maximum Contaminant Level (40 CFR 141.61)



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DAVIS, CALIFORNIA

DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE A-1 AQUIFER, DECEMBER 1998

Job Number	Drawing No.	Rev
20376	FIGURE 3-20	0

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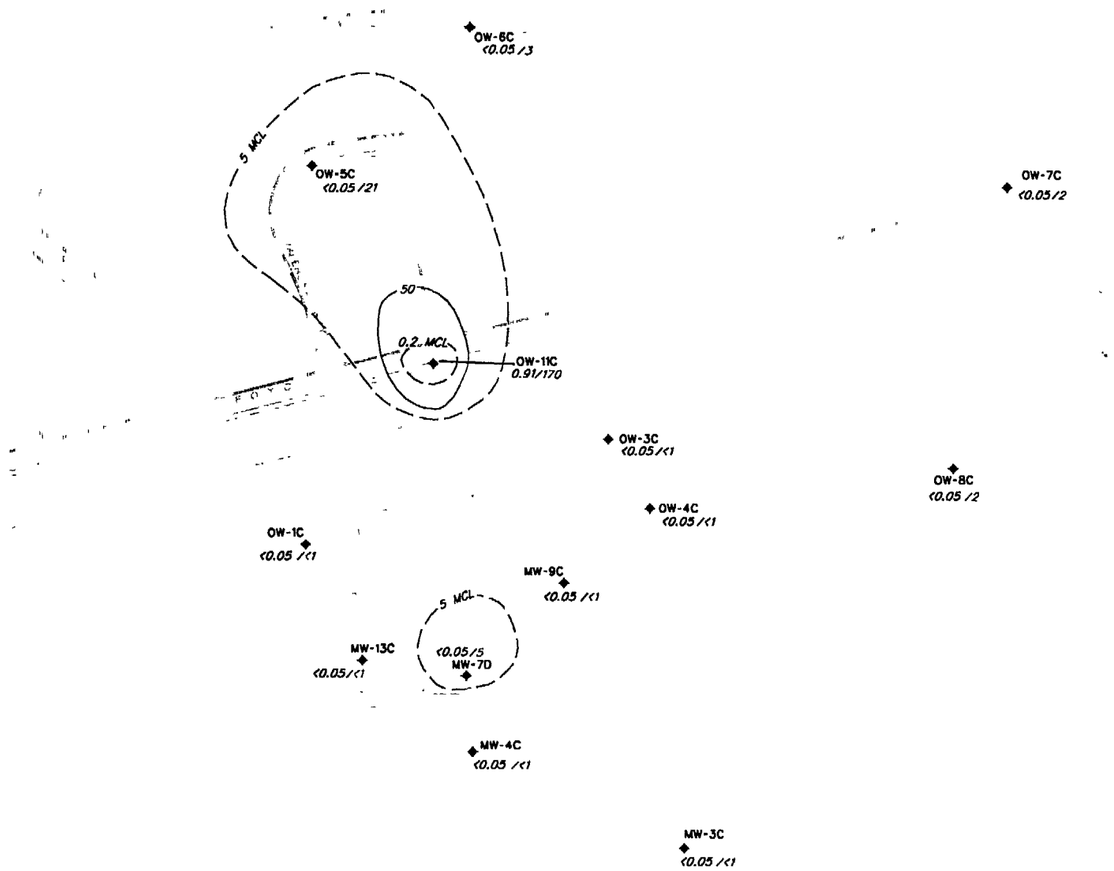
6/22/99da



EXPLANATION

MW-7D — Monitoring Well

0.2 MCL — Dibromochloropropane (DBCP) Concentration Contour, March 1999 (Uncertain)

50 — 1,2-Dichloropropane (DCP) Concentration Contour, March 1999 (Dashed Where Uncertain)

OW-8C <0.05/2 (DBCP / DCP) — Concentrations of DBCP/DCP, in ug/L

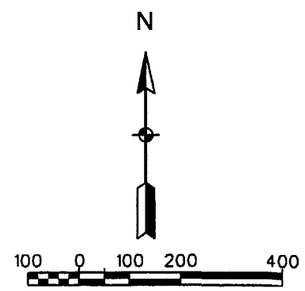
NOTES:

1) DBCP concentrations determined using EPA Method 504.

2) DCP concentrations determined using 25 ml purge method.

3) < = Not Detected

4) MCL = Maximum Contaminant Level (40 CFR 141.61)



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DAVIS, CALIFORNIA

DIBROMOCHLOROPROPANE (DBCP) AND 1,2-DICHLOROPROPANE (DCP) IN THE A-1 AQUIFER, MARCH 1999

Job Number	Drawing No.	Rev
20376	FIGURE 3-21	0

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6/22/99da

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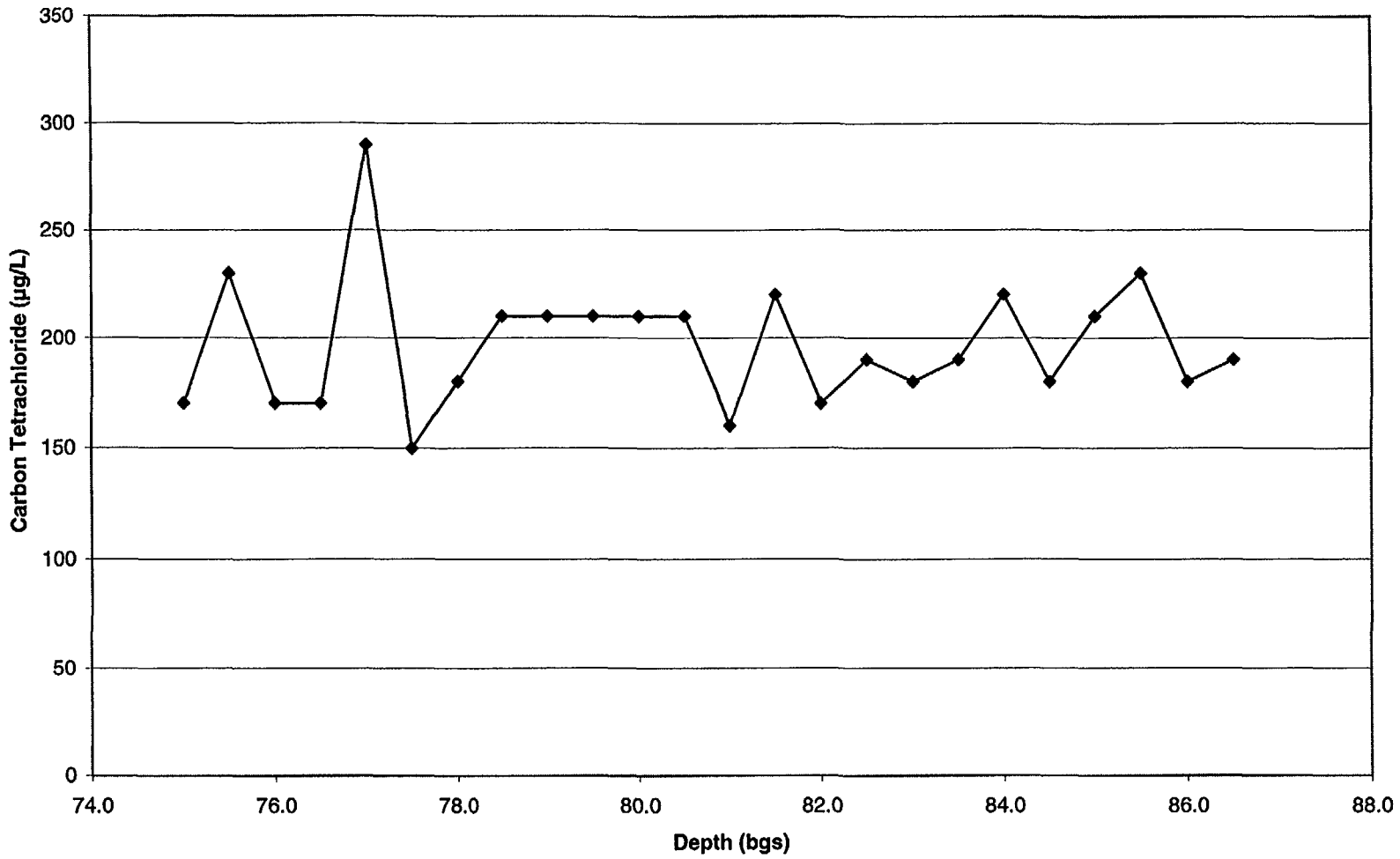
2/8/99da



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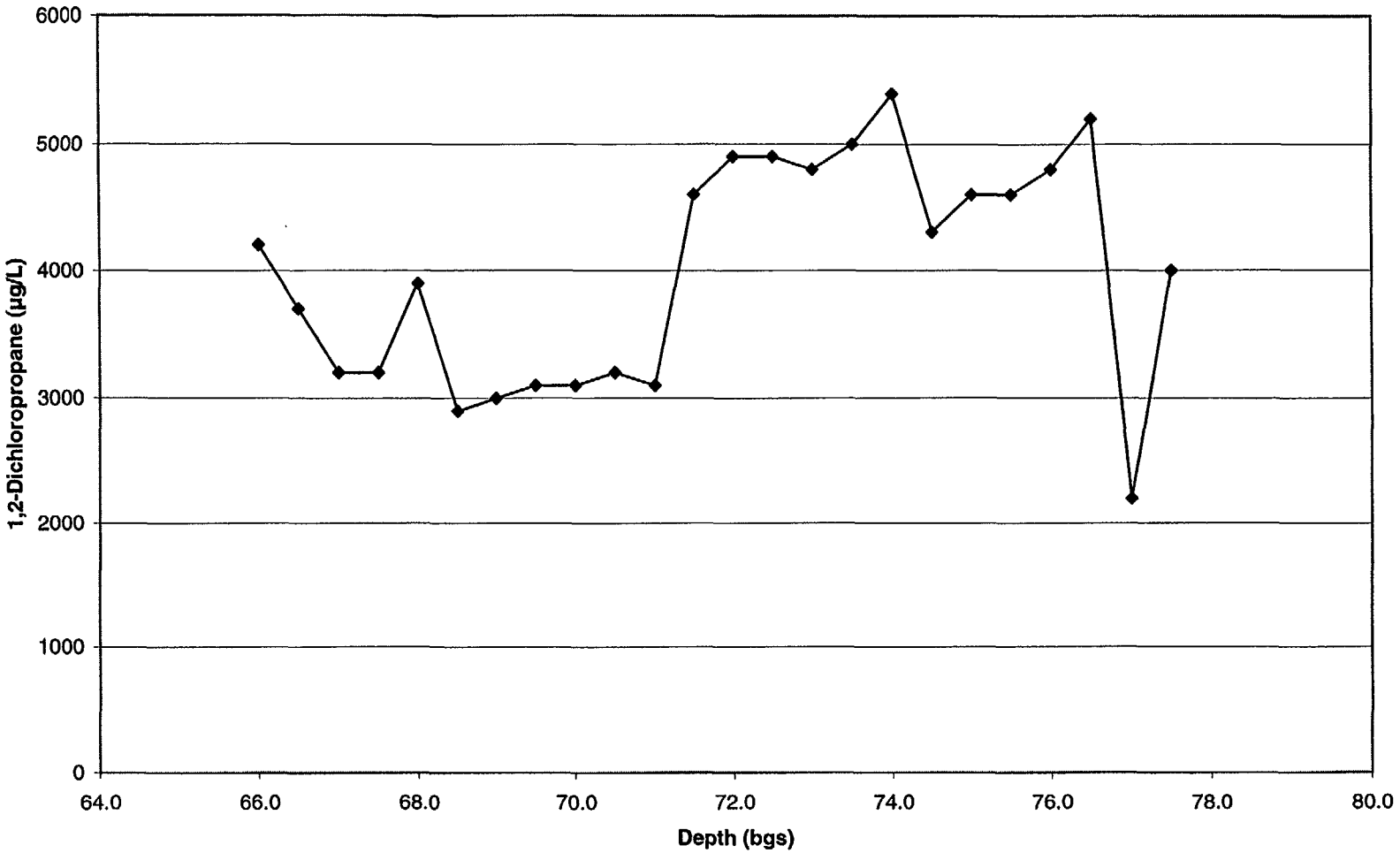
FRONTIER FERTILIZER PROJECT

CCl_4 IN OW-4B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-22	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\dcpX1b.ai
2/8/99da



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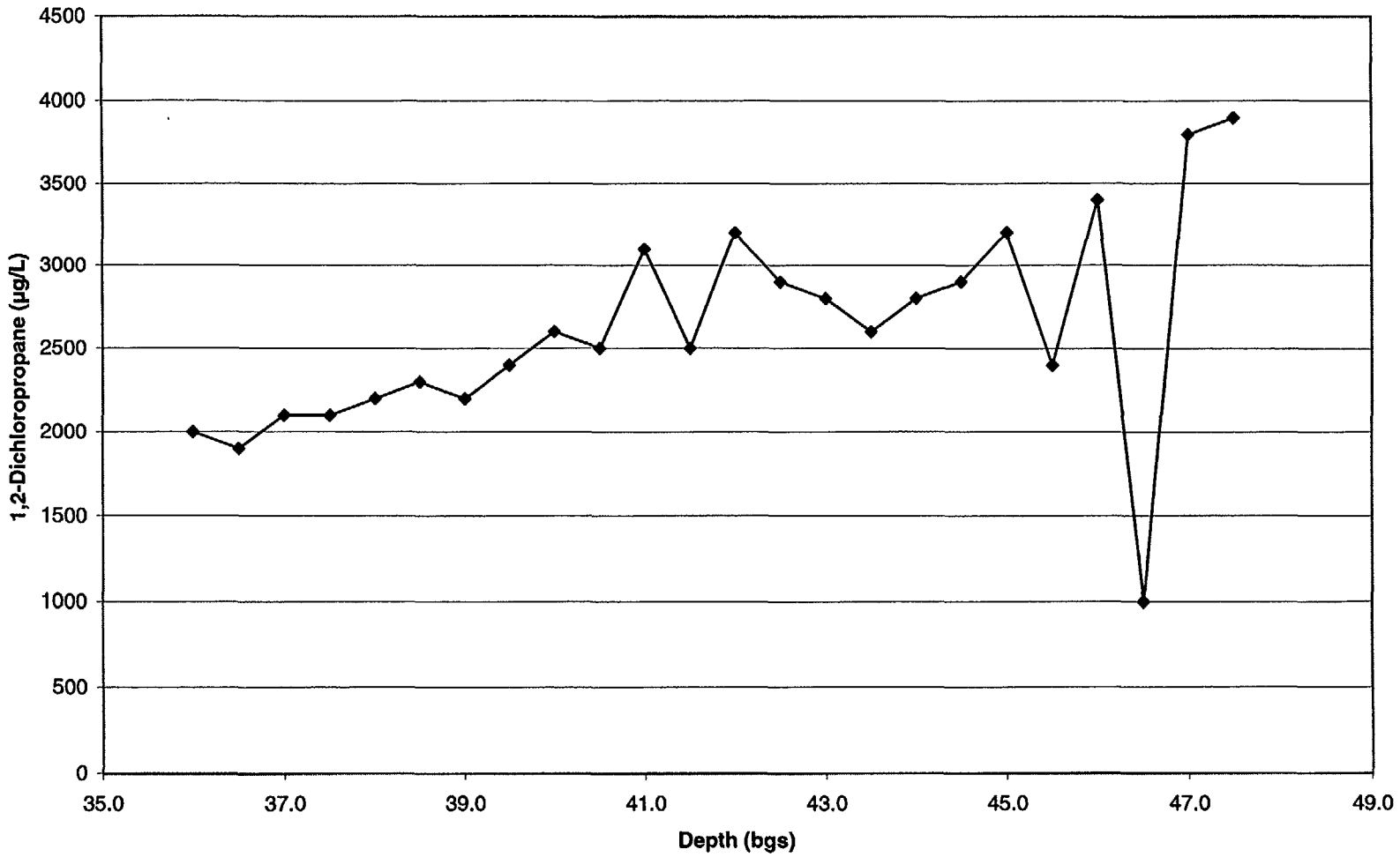
FRONTIER FERTILIZER PROJECT

DCP IN X-1B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-23	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\dcpMW7b.ai
2/8/99da



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FRONTIER FERTILIZER PROJECT

DCP IN MW-7B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-24	0

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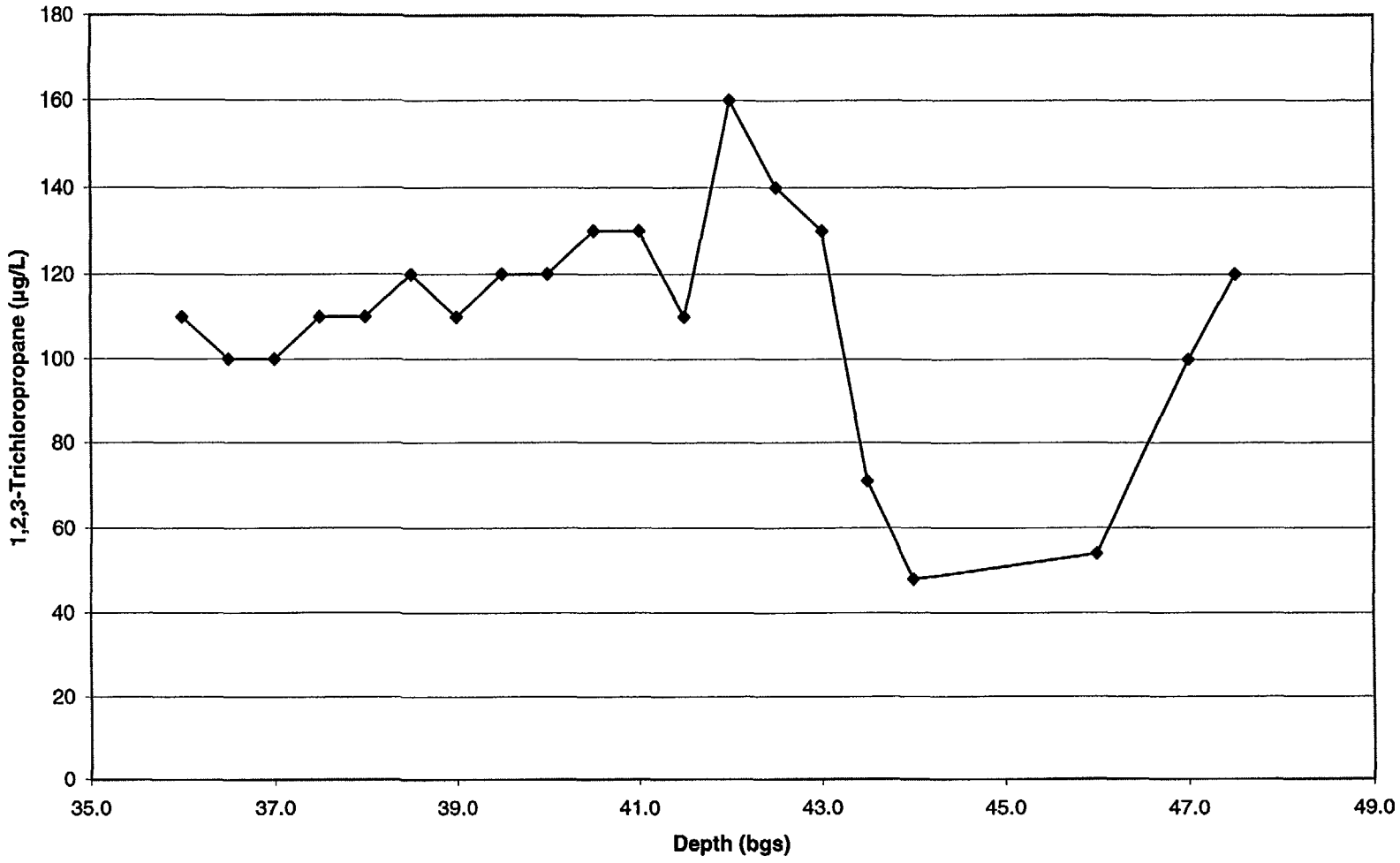
2/8/99da



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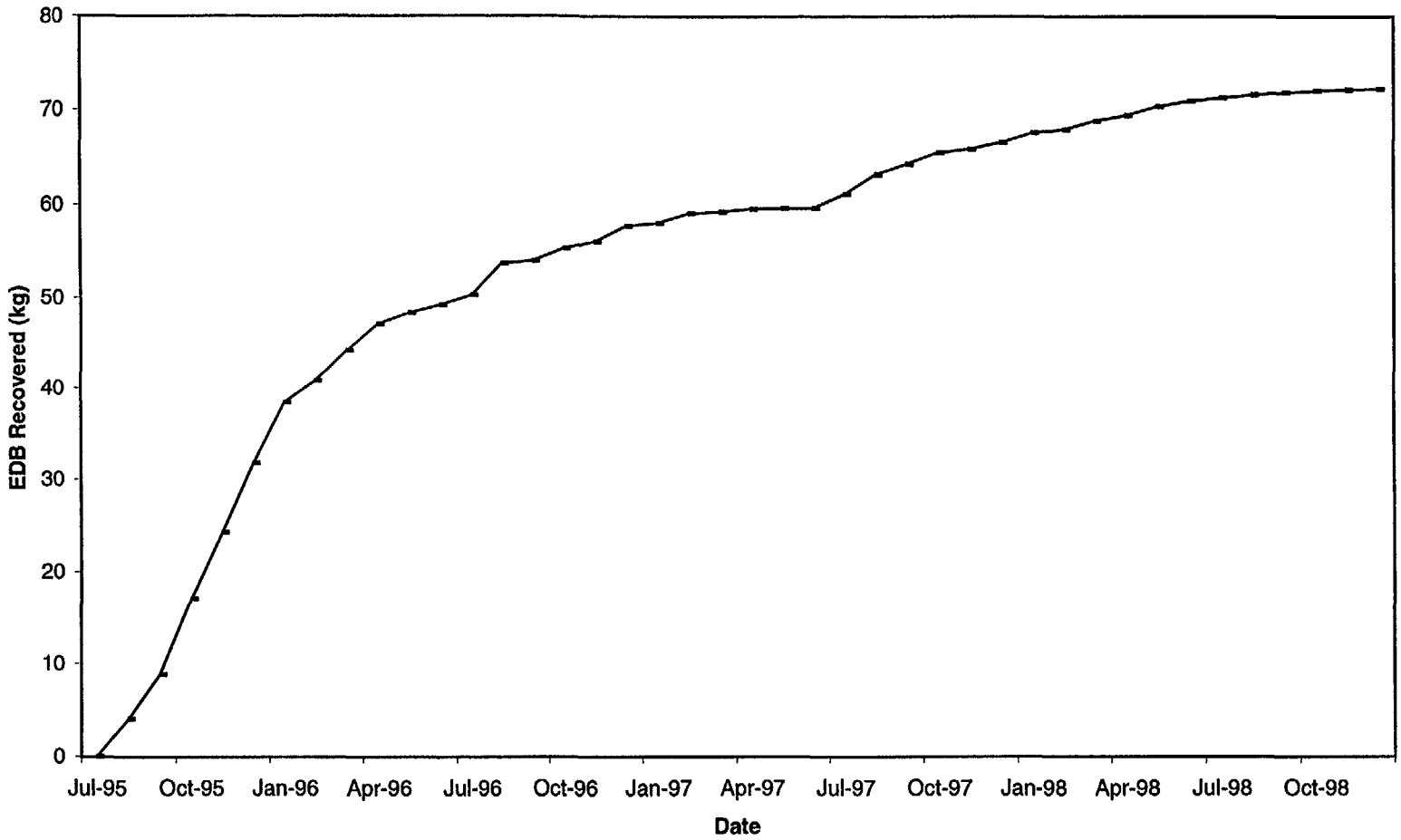
FRONTIER FERTILIZER PROJECT

1,2,3-TRICHLOROPROPANE IN MW-7B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-25	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumEDB.ai
2/2/99da



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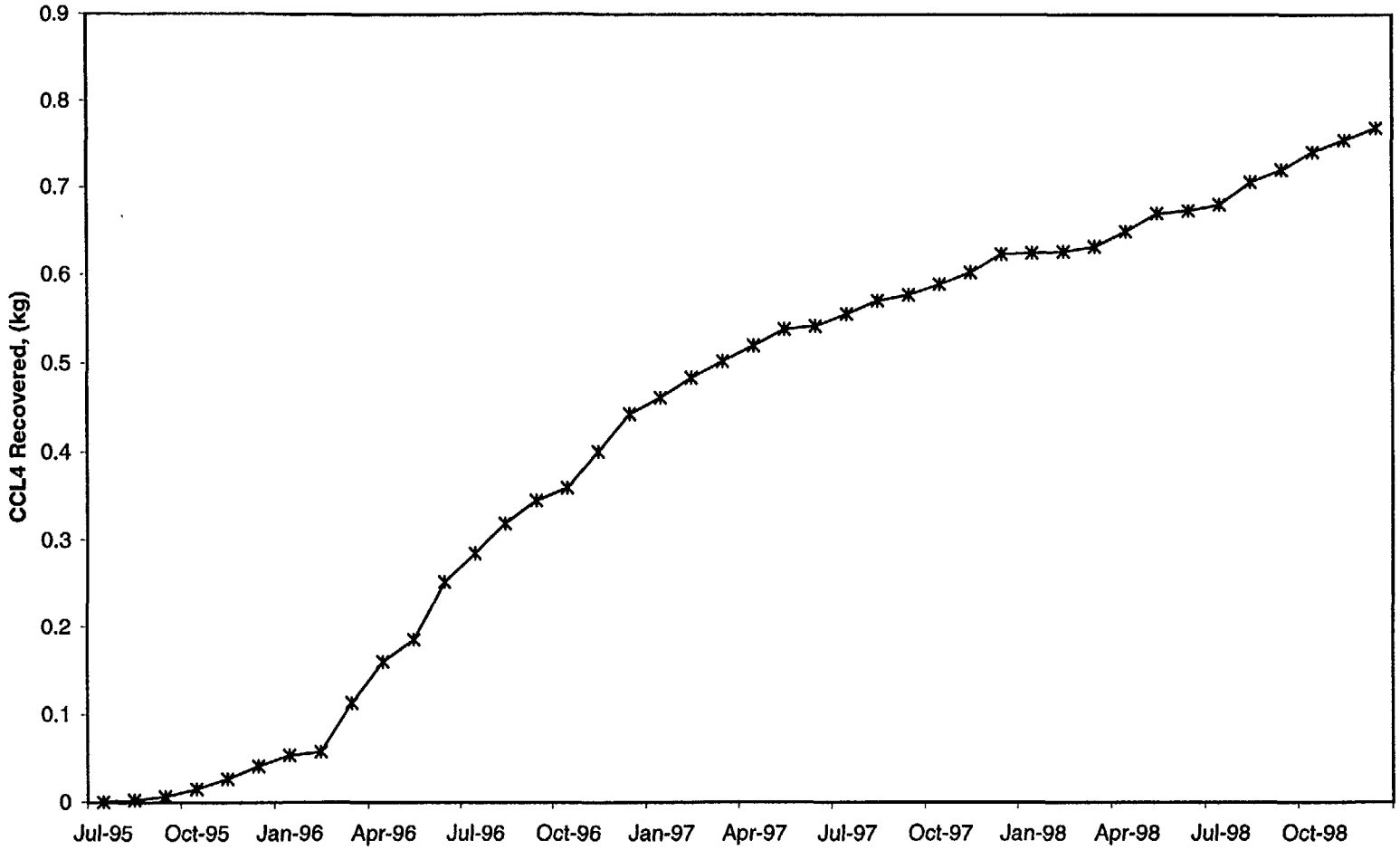
FRONTIER FERTILIZER PROJECT

CUMULATIVE RECOVERY OF EDB

Job Number	Drawing No.	Rev.
20376	Figure 3-26	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumCCl4.ai
2/2/99da



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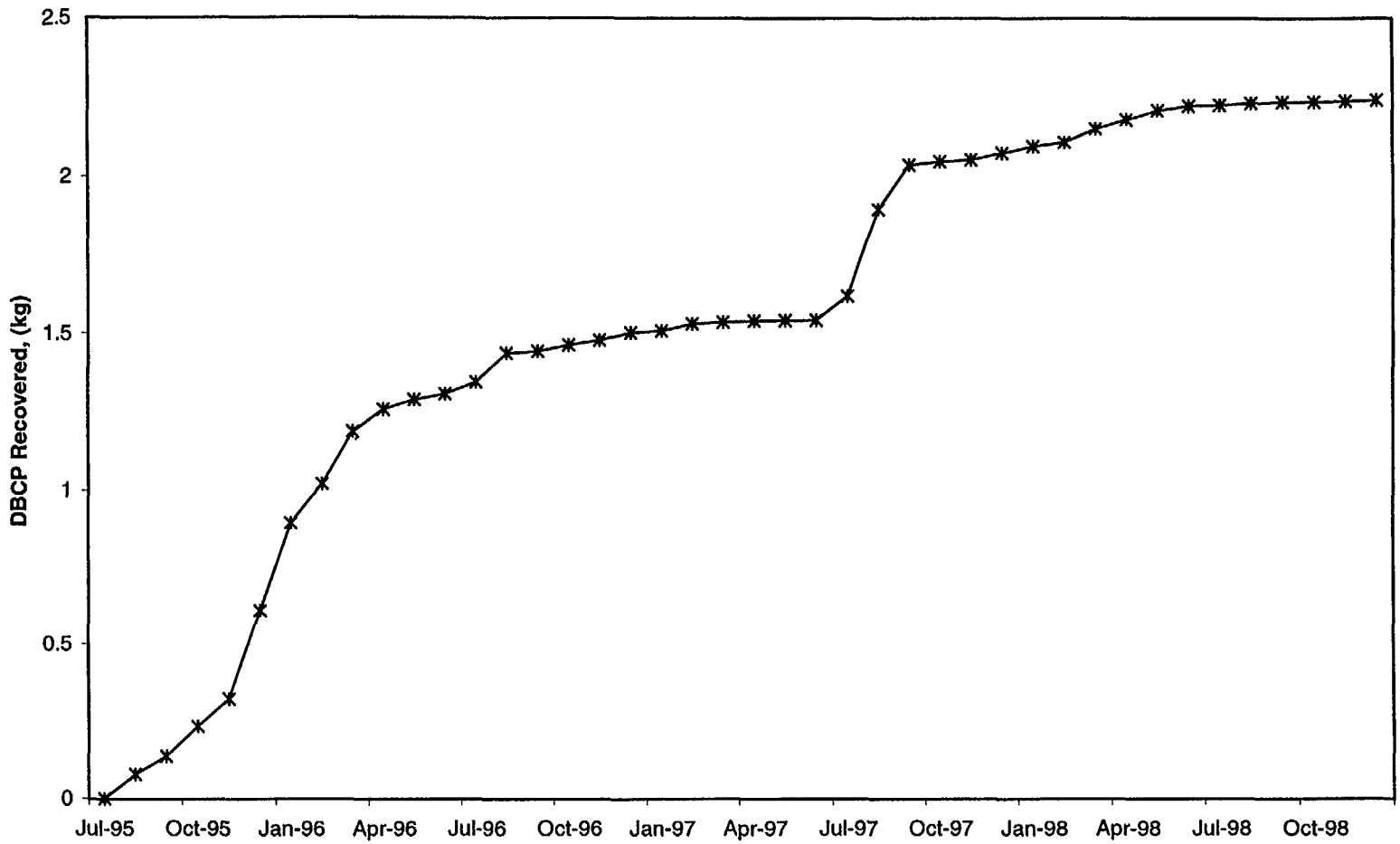
FRONTIER FERTILIZER PROJECT

CUMULATIVE RECOVERY OF CCl_4

Job Number	Drawing No.	Rev.
20376	Figure 3-27	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumDBCP al
2/2/99da



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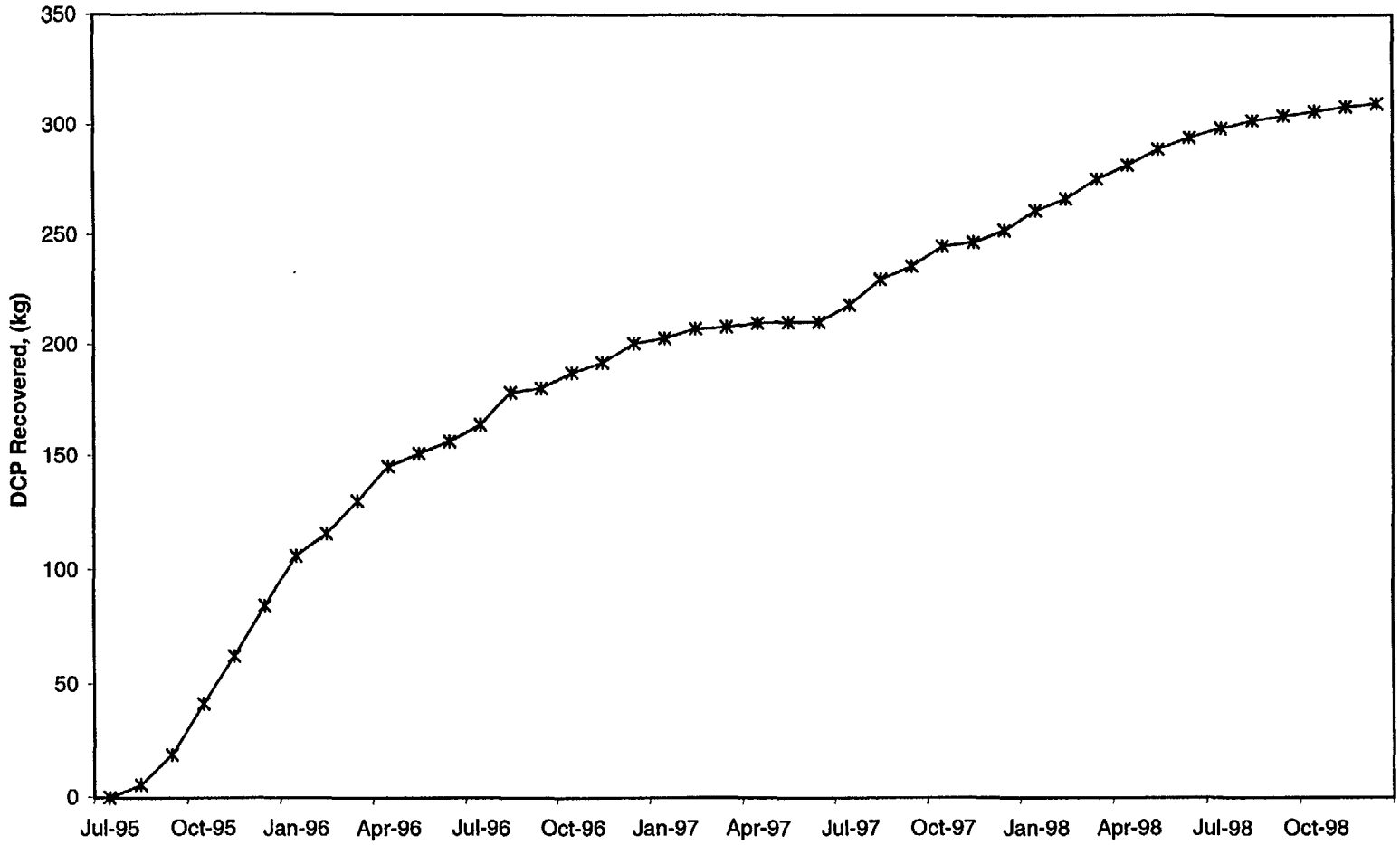
FRONTIER FERTILIZER PROJECT

CUMULATIVE RECOVERY OF DBCP

Job Number	Drawing No.	Rev.
20376	Figure 3-28	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumDCP.ai
2/2/99da



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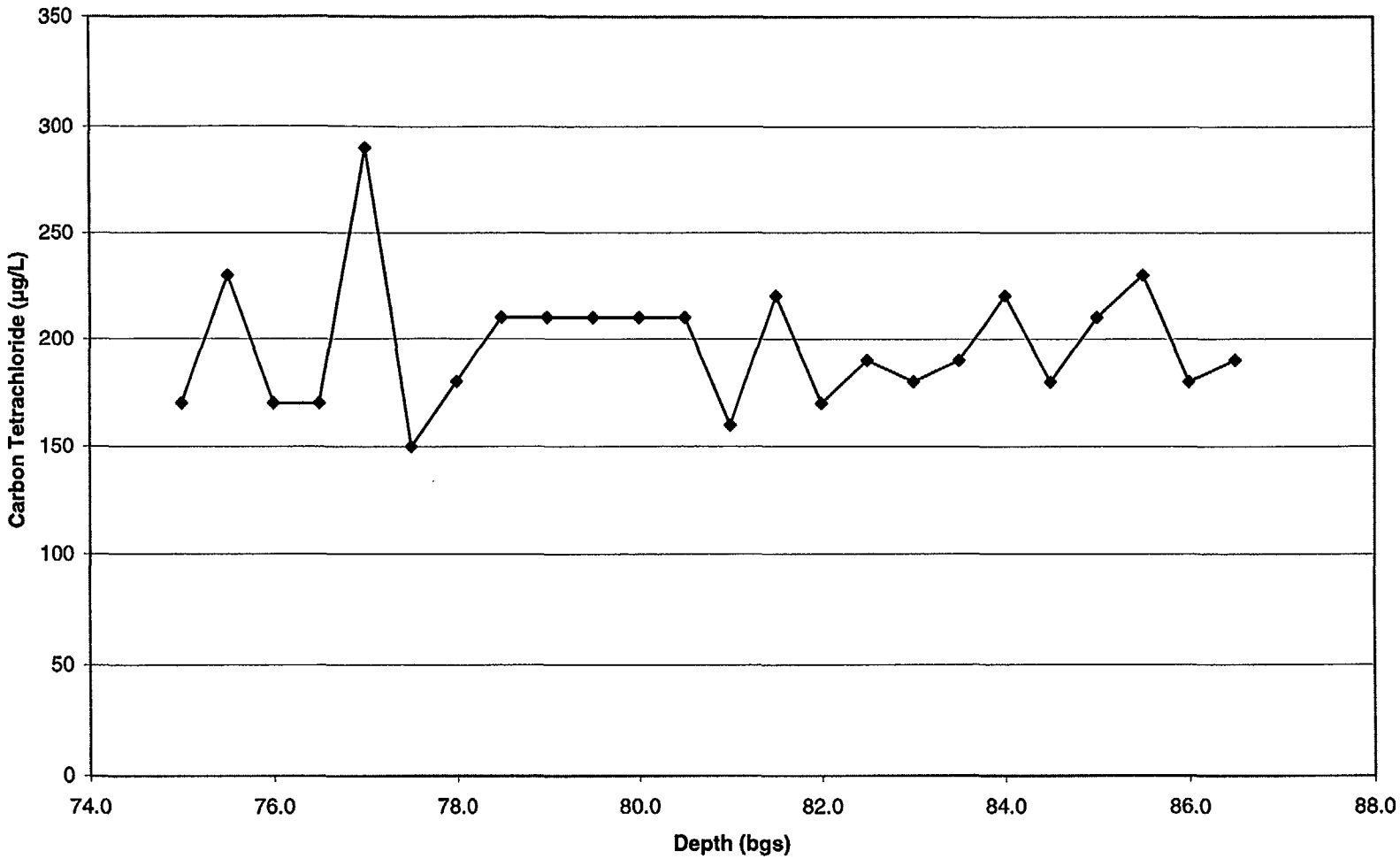
FRONTIER FERTILIZER PROJECT

CUMULATIVE RECOVERY OF DCP

Job Number	Drawing No.	Rev.
20376	Figure 3-29	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\ccl4OW4B.al
2/8/99da



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CCl_4 IN OW-4B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-22	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\dcpX1b.ai
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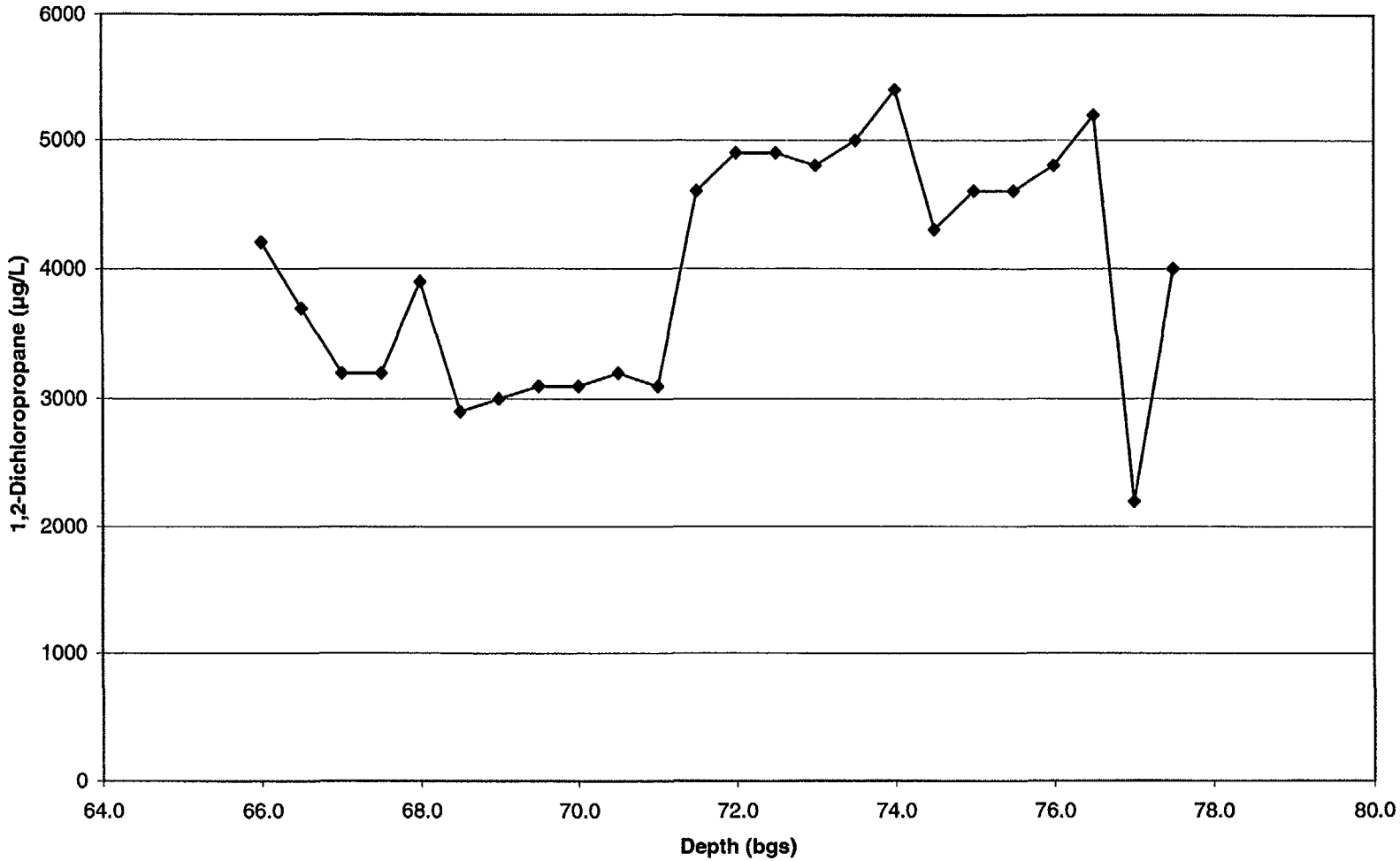

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DCP IN X-1B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-23	0

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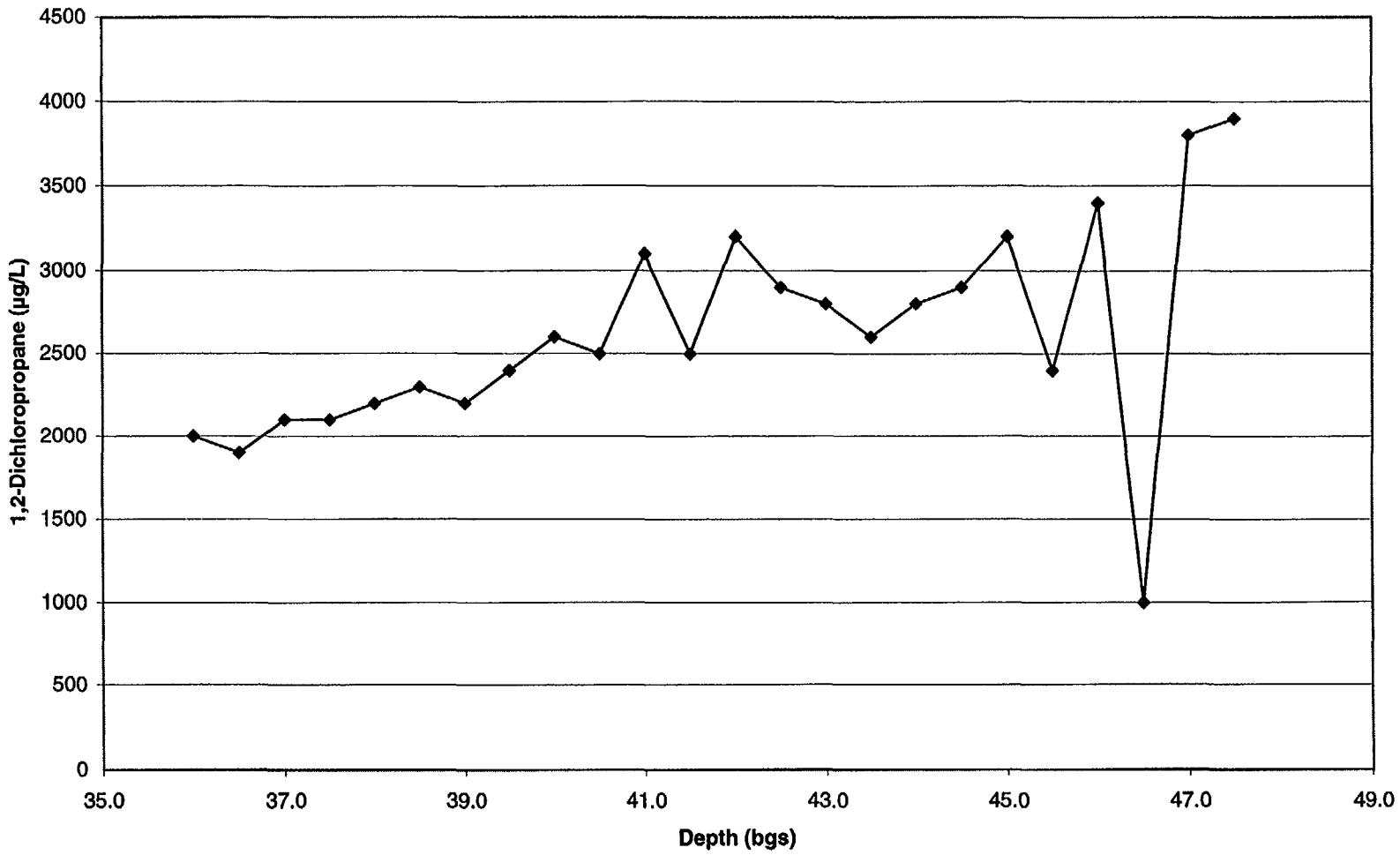

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DCP IN MW-7B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No	Rev
20376	Figure 3-24	0

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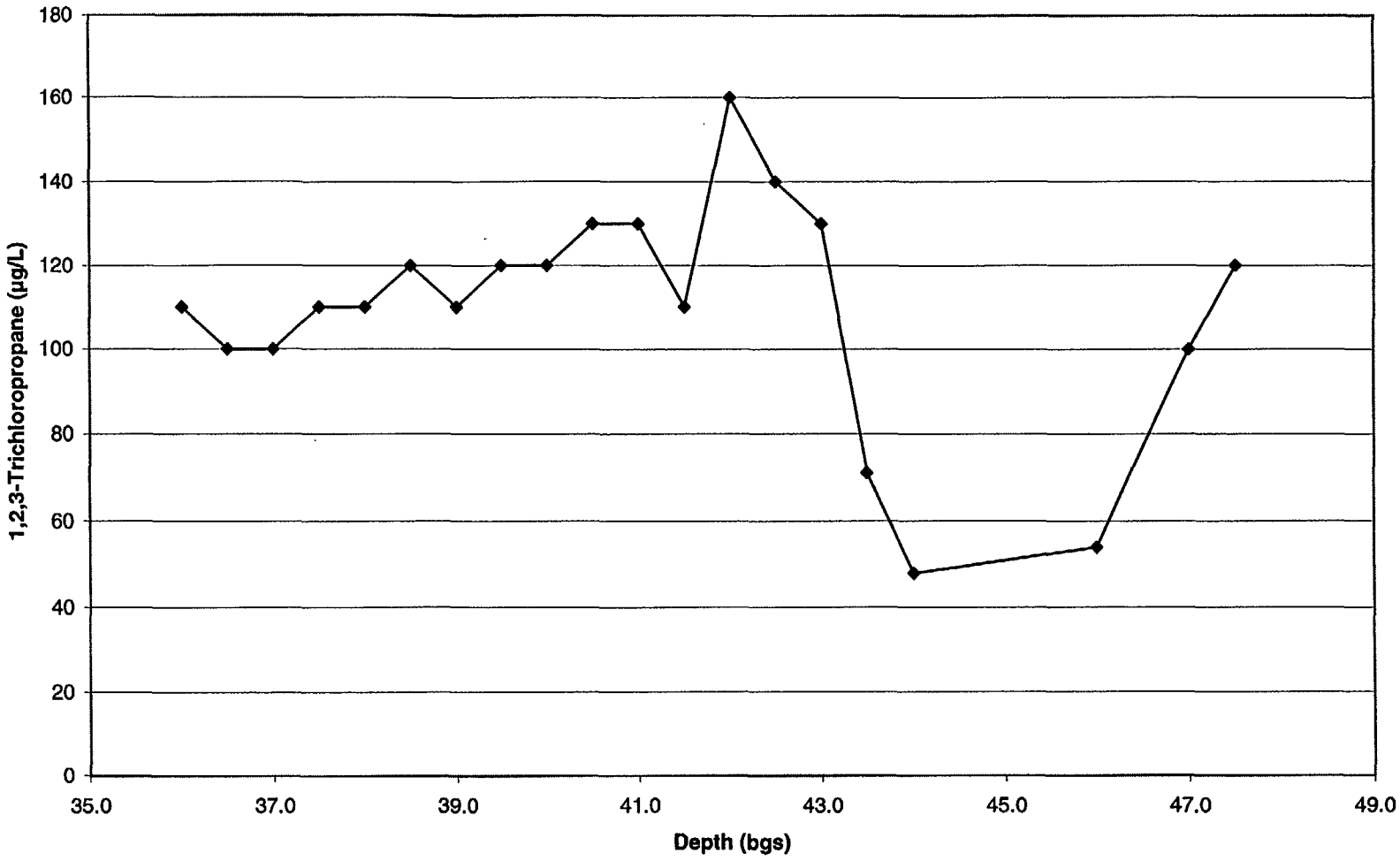

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1,2,3-TRICHLOROPROPANE IN MW-7B, VERTICAL CONCENTRATION PROFILE

Job Number	Drawing No.	Rev.
20376	Figure 3-25	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumEDB.ai
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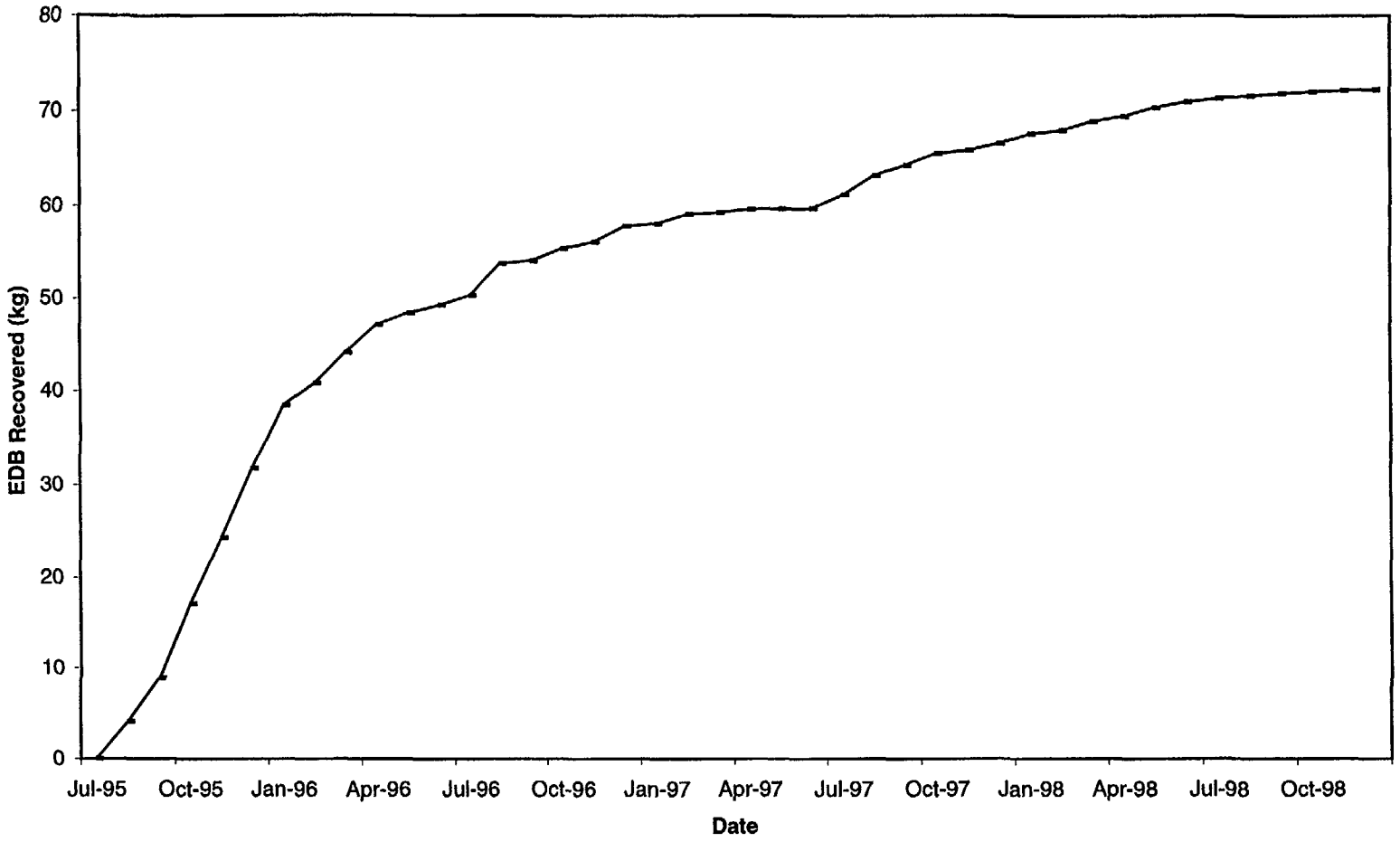

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FRONTIER FERTILIZER PROJECT

CUMULATIVE RECOVERY OF EDB

Job Number	Drawing No.	Rev.
20376	Figure 3-26	0

SFOSB061\BEI_DESIGN2\FRONTIER\RI98\cumCCl4.ai
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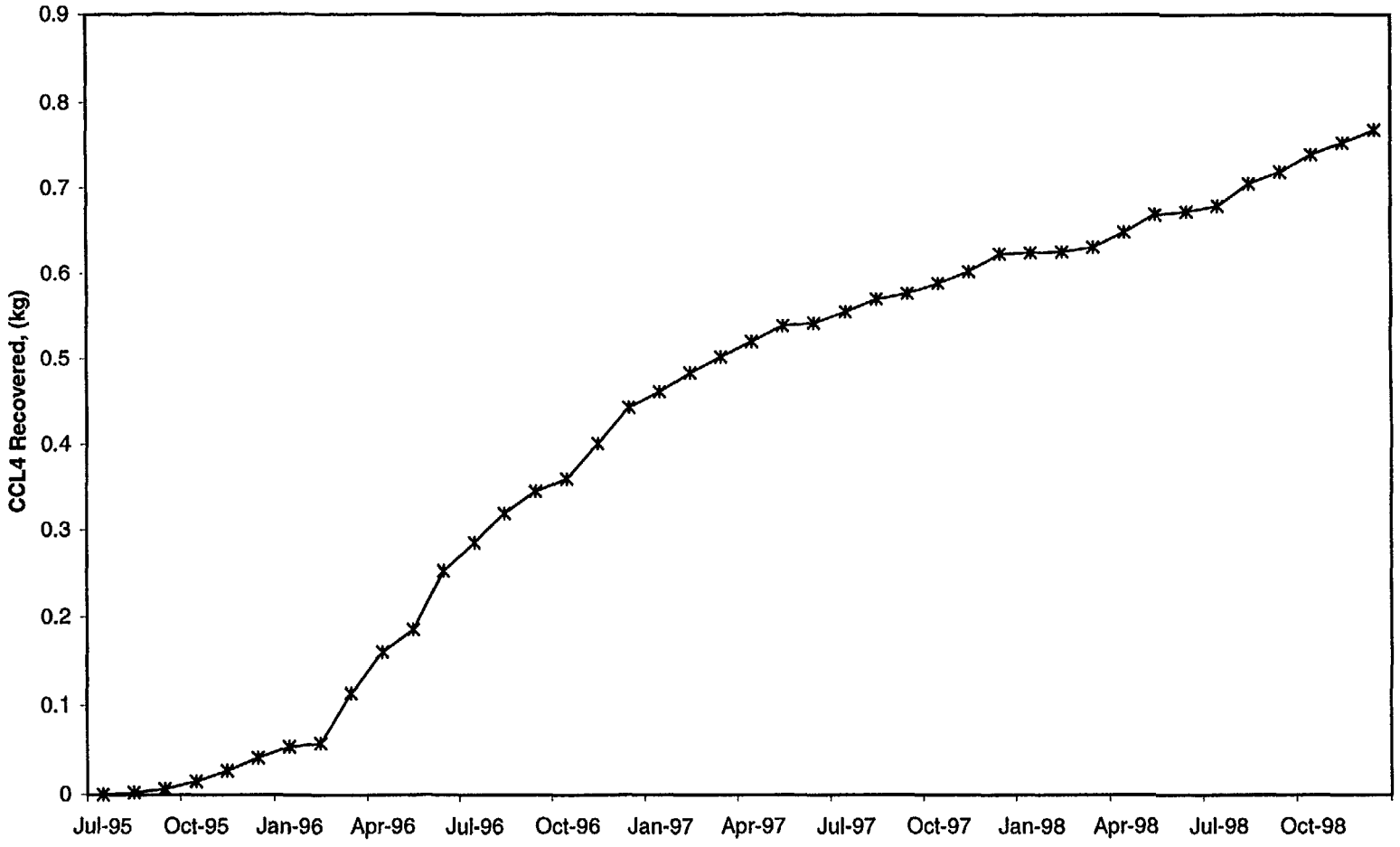

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CUMULATIVE RECOVERY OF CCl_4

Job Number	Drawing No.	Rev.
20376	Figure 3-27	0

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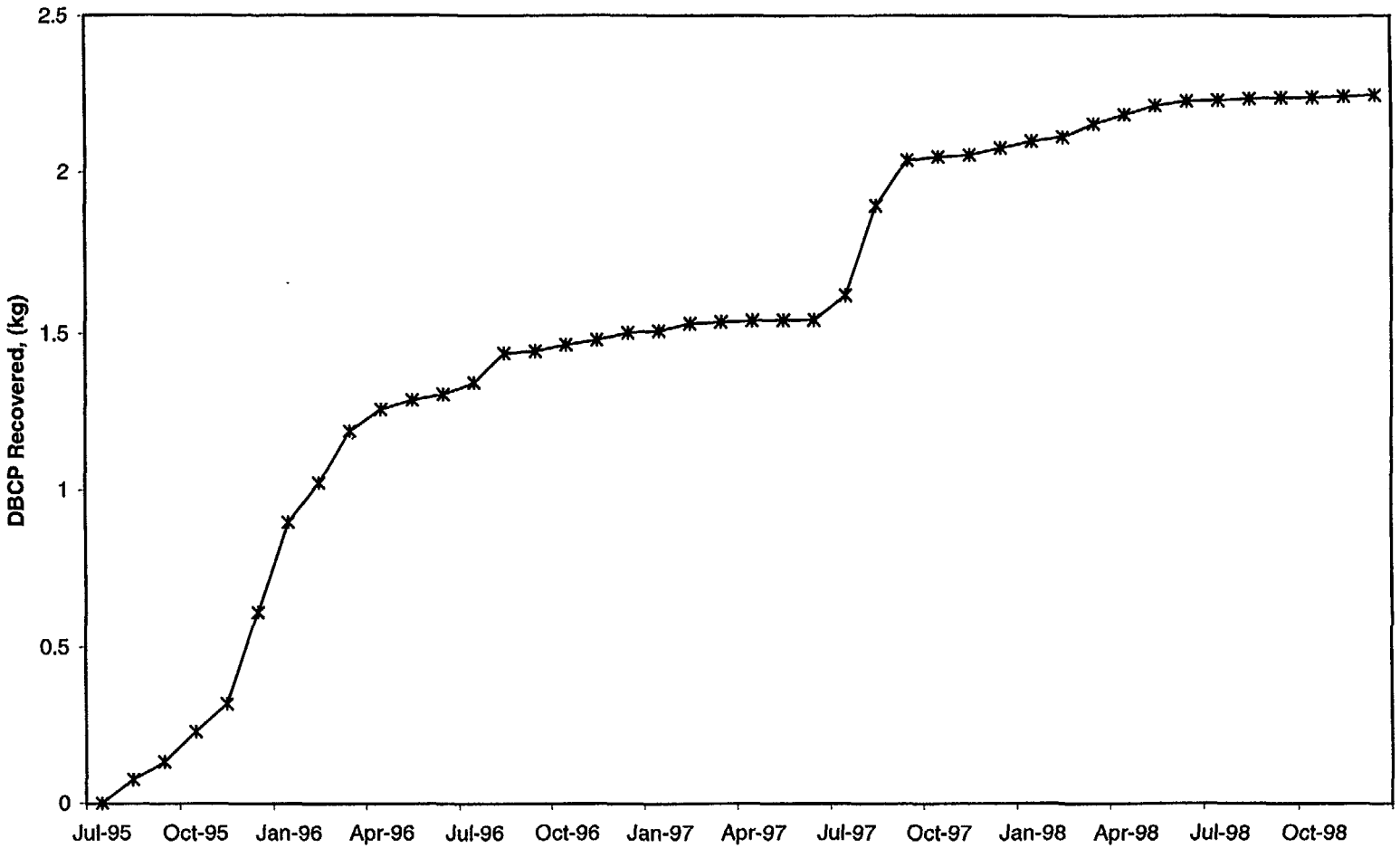

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CUMULATIVE RECOVERY OF DBCP

Job Number	Drawing No.	Rev.
20376	Figure 3-28	0

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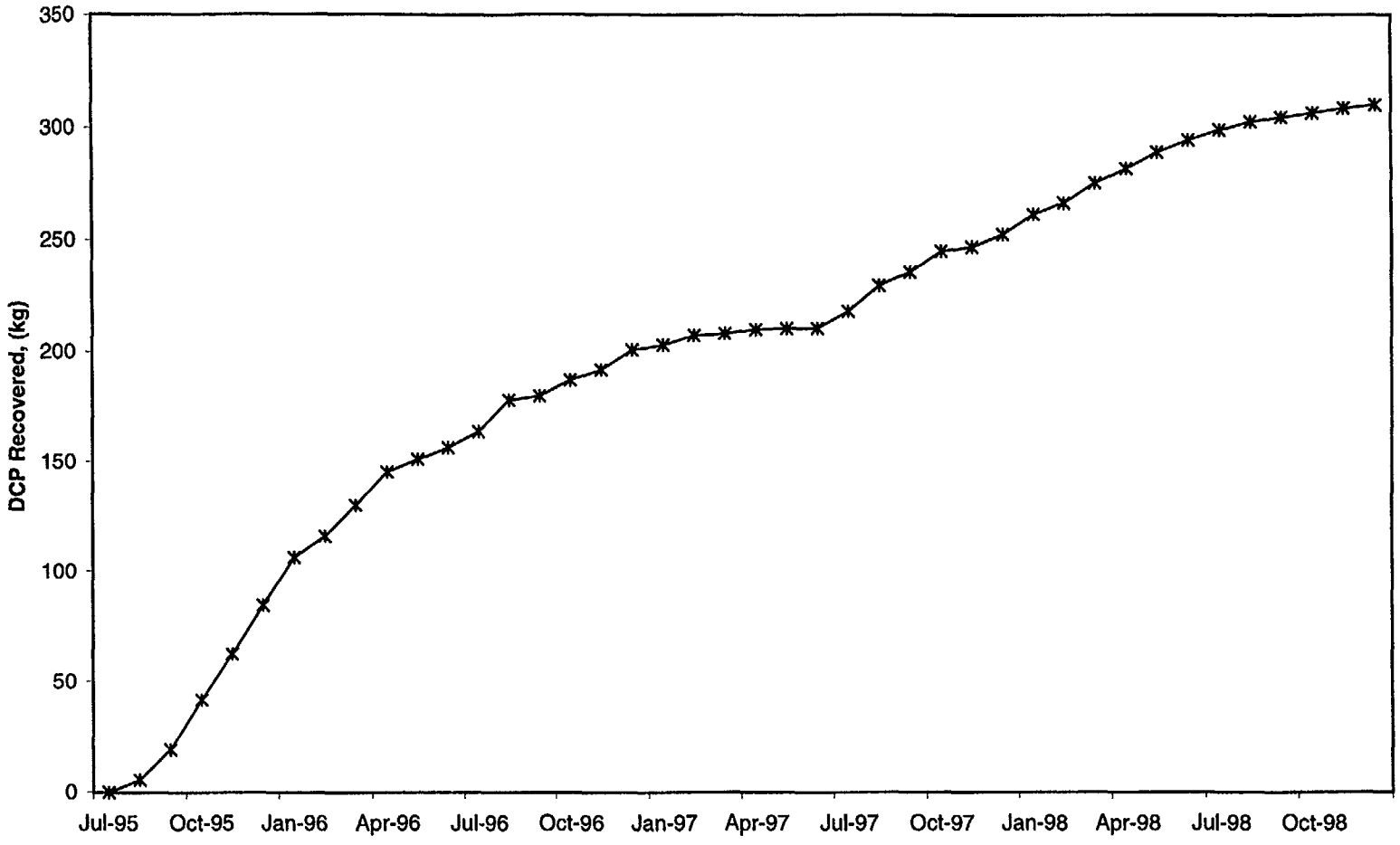

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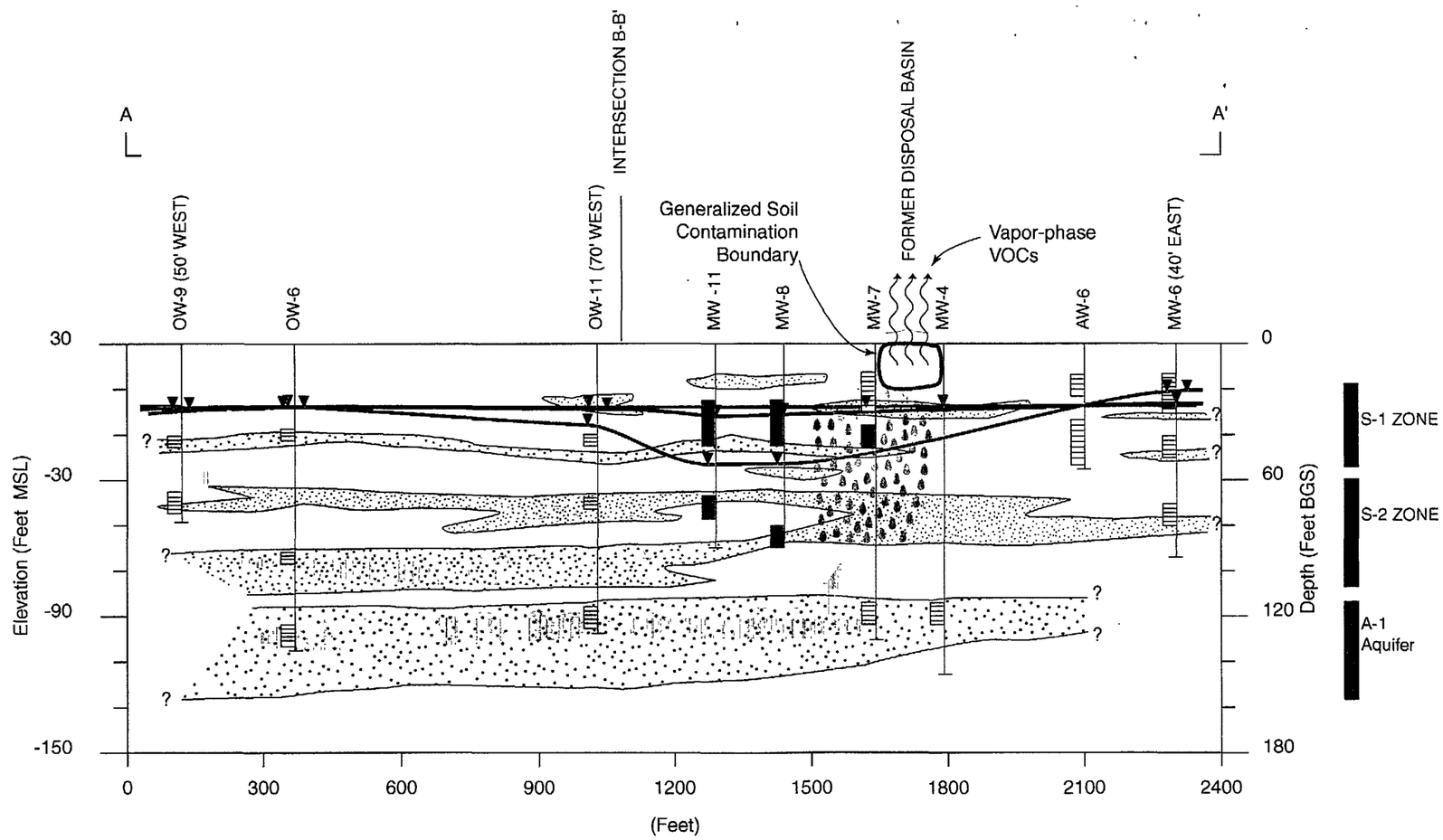
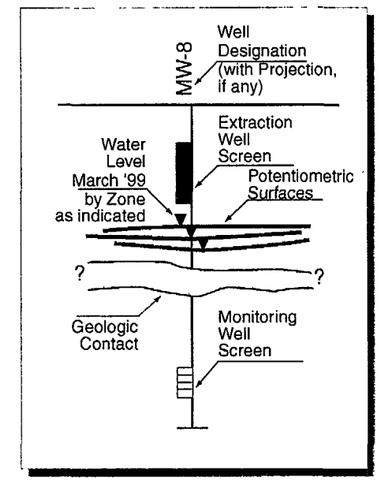
CUMULATIVE RECOVERY OF DCP

Job Number	Drawing No.	Rev.
20376	Figure 3-29	0



EXPLANATION:

- CLAY AND SILT (very low K)
- SILTY SAND AND SILT (low K)
- SAND WITH SILT (medium K)
- SAND AND GRAVEL (high K)
- ▼▼▼ WATER LEVEL BY ZONE AS INDICATED March 1999)
- GENERALIZED EXTENT OF VOC PLUME
- POTENTIAL DNAPL REGION



NOTES:

1) Vertical exaggeration = 5x
2) BGS = Below Ground Surface
   MSL = Mean Sea Level
3) K = Hydraulic Conductivity

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CONCEPTUAL MODEL

Job Number	Drawing No.	Rev
20376	FIGURE 3-30	1

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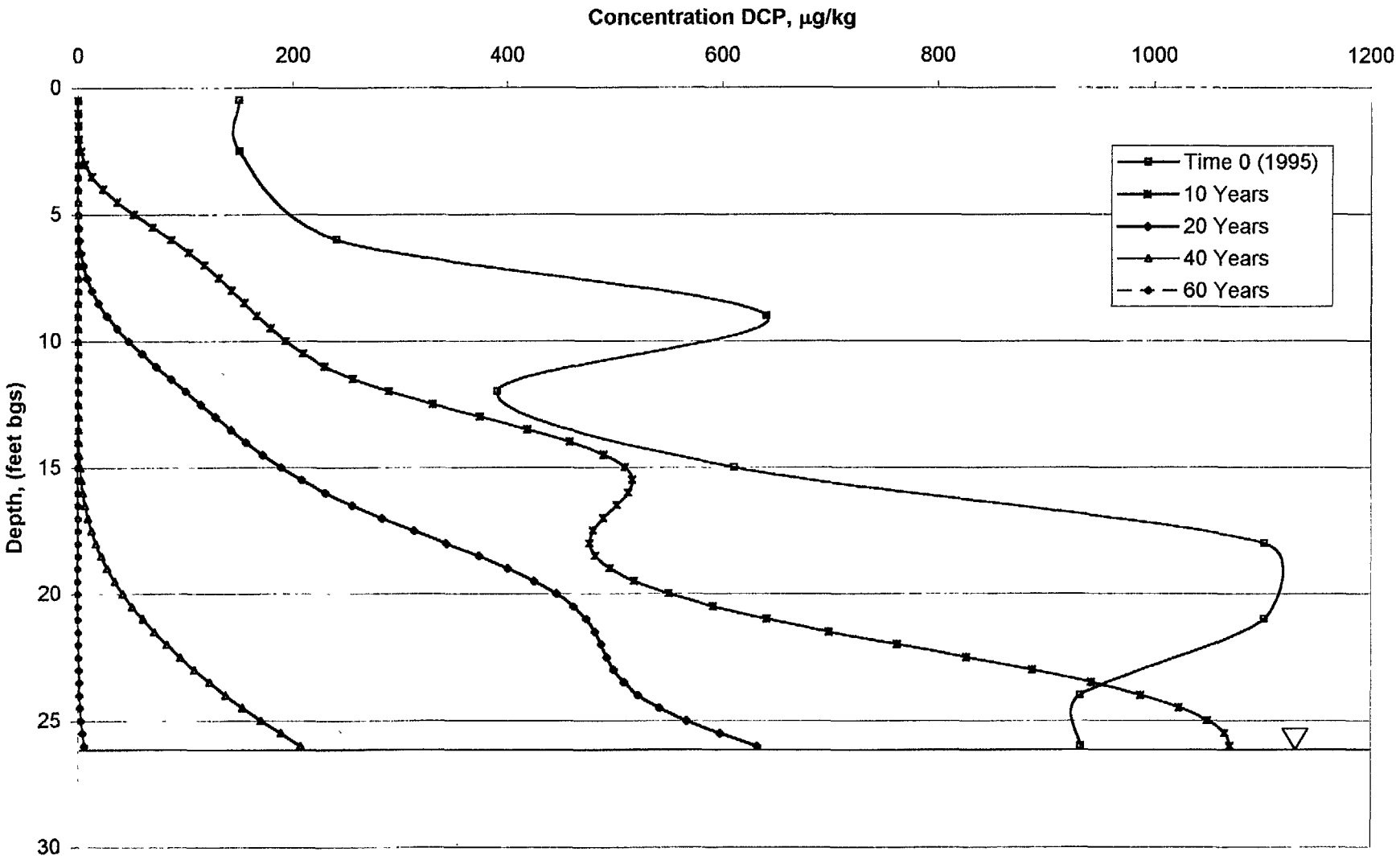
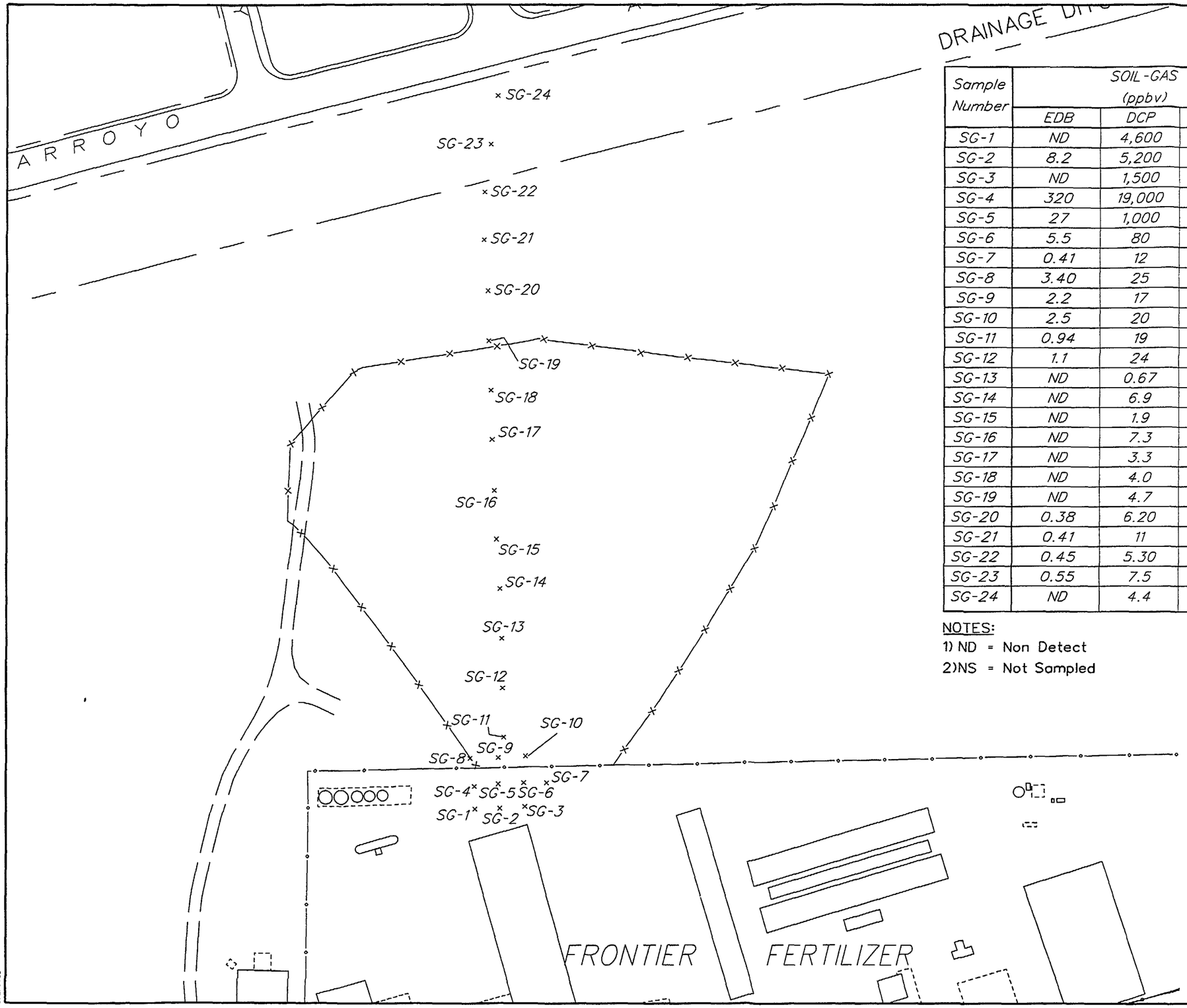
Figure 4-1 DCP Soil Concentration Profile Over Time





Sample Number	SOIL-GAS (ppbv)			FLUX-CHAMBER (ug/m^2-min)		
	EDB	DCP	CCl_4	EDB	DCP	CCl_4
SG-1	ND	4,600	1.23	ND	0.085	0.023
SG-2	8.2	5,200	ND	ND	0.17	0.0048
SG-3	ND	1,500	2.41	ND	0.0076	0.0047
SG-4	320	19,000	ND	ND	2.8	0.011
SG-5	27	1,000	0.48	ND	0.37	0.0053
SG-6	5.5	80	1.13	ND	0.022	0.0074
SG-7	0.41	12	ND	ND	0.0055	0.028
SG-8	3.40	25	ND	ND	0.0033	0.013
SG-9	2.2	17	ND	ND	?	0.022
SG-10	2.5	20	ND	ND	0.0021	0.016
SG-11	0.94	19	ND	ND	ND	0.039
SG-12	1.1	24	ND	ND	ND	0.014
SG-13	ND	0.67	ND	ND	ND	0.023
SG-14	ND	6.9	ND	ND	ND	0.021
SG-15	ND	1.9	ND	ND	ND	0.025
SG-16	ND	7.3	ND	ND	ND	0.019
SG-17	ND	3.3	ND	ND	ND	0.022
SG-18	ND	4.0	ND	ND	ND	0.022
SG-19	ND	4.7	ND	ND	ND	0.025
SG-20	0.38	6.20	ND	ND	ND	0.019
SG-21	0.41	11	ND	NS	NS	NS
SG-22	0.45	5.30	ND	ND	ND	0.0071
SG-23	0.55	7.5	ND	ND	ND	0.023
SG-24	ND	4.4	4.62	ND	ND	0.011

NOTES:
1) ND = Non Detect
2) NS = Not Sampled

50 0 50 100 150
Approximate Scale in Feet

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DAVIS, CALIFORNIA

SOIL GAS AND FLUX CHAMBER RESULTS

Job Number	Drawing No.	Rev
20376	FIGURE 5-1	0

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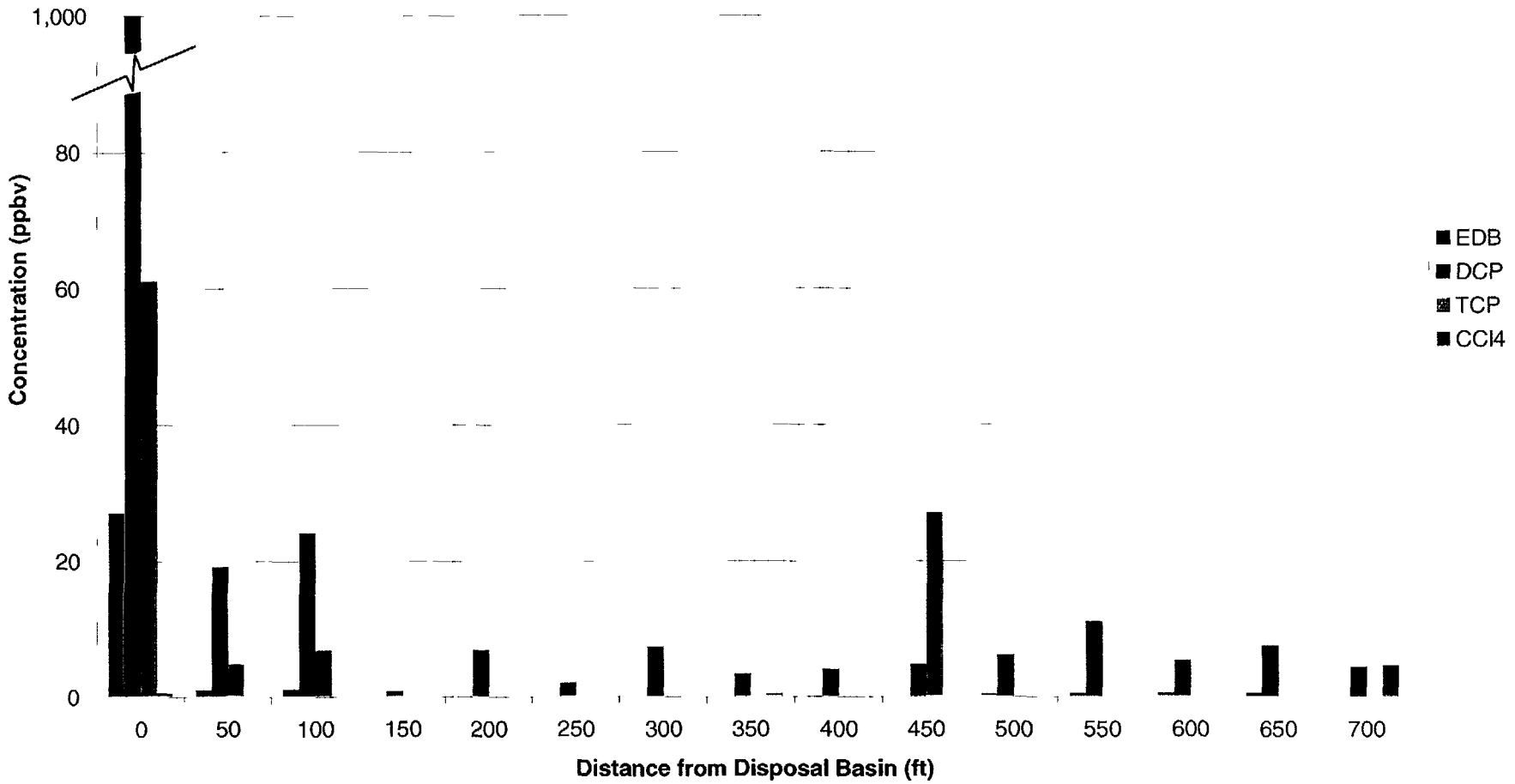

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SOIL-GAS RESULTS

Job Number	Drawing No	Rev
20376	Figure 5-2	0