

The electronic version of this file/report should have the file name:

Site Plan.HW.932052.1988-07-27.2ND-Revision-Interim-  
GW-Monitoring-Plan.pdf

Type of document . Site Number . Year-Month . File Year-Year or Report name . pdf

---

\_\_\_\_\_ . File \_\_\_\_\_ .pdf

example: letter . Year-Month . File Year-Year . pdf

---

\_\_\_\_\_ .pdf

example: report . Site Number . Year-Month . Report Name . pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - B

Superfund - HW

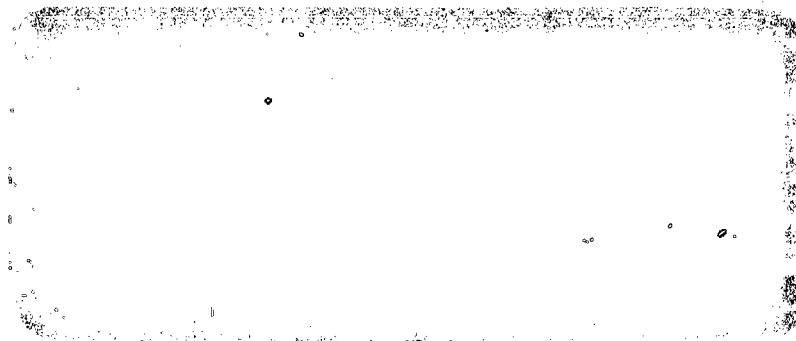
Spills - SP

ERP - E

VCP - V

BCP - C

BEL-1988-5-141



Golden Association

JUL 29 1988 TJD



## Golder Associates

CONSULTING GEOTECHNICAL AND MINING ENGINEERS

RECEIVED

AUG 2 1988

N.Y.S. DEPT. OF  
ENVIRONMENTAL CONSERVATION  
REGION 9

SECOND REVISION  
REVISED INTERIM GROUNDWATER MONITORING PLAN  
BELL AEROSPACE TEXTRON  
WHEATFIELD  
NEW YORK

Distribution:

10 Copies: Bell Aerospace Textron  
Wheatfield, New York

1 Copy: Golder Associates  
Mississauga, Ontario

1 Copy: Golder Associates  
Atlanta, Georgia

1 Copy: Golder Associates  
Mt. Laurel, New Jersey

July 1988

871-1057



## Golder Associates

CONSULTING GEOTECHNICAL AND MINING ENGINEERS

July 27, 1988

Our ref: 871-1057

Bell Aerospace Textron  
P.O. Box One  
Buffalo, New York  
14240

ATTENTION: Mr. Thomas J. Comer, P.E.  
Executive Director, Operations Support

RE: 2ND REVISION, INTERIM GROUNDWATER MONITORING PLAN

Dear Sirs:

The Interim Groundwater Monitoring Plan for the Bell Aerospace Neutralization Pond facility was established by Golder Associates in October 1985 and approved by the NYSDEC. It is now proposed that it be revised to accomodate the recent results of the Phase III Plume Definition investigation carried out between August 1987 and April 1988. The monitoring well locations, including the previously drilled GZA Consultants monitoring wells and the Golder Associates monitoring wells are shown on Figure 1. The figure also outlines the extent of volatile organic groundwater contamination in the overburden, Zone 1 and Zone 3 bedrock defined by the Phase III Plume Definition work to date. The Interim Groundwater Monitoring Plan carried out between July 1986 and April 1988 involved the 19 GZA overburden and Zone 1 bedrock wells designated as B-1, B-3 to B-10A, B-11S, B-11D to B-18 on Figure 1.

The current Interim Groundwater Monitoring Plan included water levels, pH, conductivity and volatile organics by EPA Method 624. The specific details of the monitoring plan are provided in the Interim Groundwater Monitoring Plan for Bell Aerospace, dated October 1985. The monitoring data obtained from the plan has provided an assessment of the variability with time of the concentrations of the 3 principal contaminants including methylene chloride, trans-1,2-dichloroethene and trichloroethene. The concentrations of these compounds in the 6 GZA bedrock wells, including B-10A, B-11D, B-13, B-14, B-15 and B-16 for the 8 quarterly monitoring periods and a preliminary sampling from June 1985 are shown on Figures 2 to 7.

The volatile concentrations obtained for the individual wells show a wide range of variability with time although in the more highly contaminated Wells 10A and 11D, (concentrations of 100,000 to 1,000,000 ppb), the variability per well tends to be within one order of magnitude which is considered relatively consistent for the volatile organics present. The initial results for June 1985 are not considered to be representative due to analytical related problems.

The widest fluctuations with time are associated with Wells 13, 14, 15 and 16 which have lower volatile concentrations between 1 and 1000 ppb. These fluctuations do not appear to directly reflect seasonal variations due to dilution by recharge water. However, the quarterly monitoring has served to establish the degree of variability in the groundwater concentrations that can occur within the plume.

The presently known groundwater contamination as indicated by the overburden and bedrock plumes shown on Figure 1 extends well beyond the scope of the GZA monitoring wells to include those areas south and east of the Neutralization Pond and apparently extending beyond Bergholtz Creek. Therefore, it is apparent that the scope of the monitoring plan requires expansion to include several of the Phase III monitoring wells both on and off site. The Revised Interim Groundwater Monitoring Plan will include six overburden Wells, fourteen Zone 1 Bedrock Wells and four Zone 3 bedrock wells totalling twenty-four wells in all, as outlined below.

- Overburden Wells (for locations, see Figure 8)

B-8 (upgradient background)

B-12

87-4(0)

87-8(0)

87-13(0)

87-17(0)

- Zone 1 Bedrock Wells (for locations see Figure 9)

ON SITE WELLS

OFF SITE WELLS

B-15(upgradient background)

87-1(1)

87-4(1)

87-9(1)

87-10(1)

87-12(1)

87-13(1)

87-15(1)

87-18(1)

87-19(1)

87-20(1)

87-21(1)

87-22(1)

87-23(1)

- Zone 3 Bedrock Wells (for locations see Figure 10)

87-2(3)

87-4(3)

87-13(3)

87-15(3) (upgradient background)

The Revised Interim Groundwater Monitoring Plan will use the existing sampling protocol outlined in the Interim Groundwater Monitoring Plan. The sampling will include water level recording, field pH and

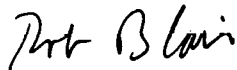
conductivity and volatile organic compounds by EPA Method 624. It is recommended that the Revised Interim Groundwater Monitoring Plan should be implemented in October, 1988. The Golder Monitoring Wells (87 series) would be monitored quarterly for one year to provide a data base comparable with the previous monitoring. The quarterly monitoring of the Golder Wells would be terminated following completion of the October 1989 sampling. The sample frequency of the Golder Wells would then be reduced to semi-annually beginning with the January 1990 sampling. The next semi-annual sampling period would be in July 1990. The results of the quarterly Revised Interim Groundwater Monitoring Program would be evaluated prior to commencing with the semi-annual Interim Groundwater Monitoring in 1990. However, it is considered that the monitoring of the three B series wells included in the Revised Monitoring Plan be reduced from quarterly to semi-annually considering the amount of quarterly data collected to date. The semi-annual sampling of the B series wells would begin in January 1989 and there would be no sampling of these wells in October 1988.

The results of the Revised Interim Groundwater Monitoring Plan will be used to assess any changes in groundwater contaminant concentrations with time and to monitor the groundwater contaminant plume as defined to date. The Revised Interim Groundwater Monitoring Plan will also be used along with additional Phase III plume definition groundwater sampling and further off-site investigations to define the extent of the contaminant plume.


We trust this Revised Interim Groundwater Monitoring Plan meets with your approval. It should be submitted to the NYSDEC for their approval. If you have any questions, please do not hesitate to call us.

Yours truly,

GOLDER ASSOCIATES



Rob Blair, M.Sc.  
Hydrogeologist



Denys Reades, P. Eng.



Gary Collison, P.E.

cc: D. Darragh  
Saperston & Day, P.C.

871-1057

PRESENT PHASE 3 MONITORING  
WELL LOCATION PLAN AND EXTENT  
OF GROUNDWATER CONTAMINATION

FIGURE 1

**SYMBOLS**

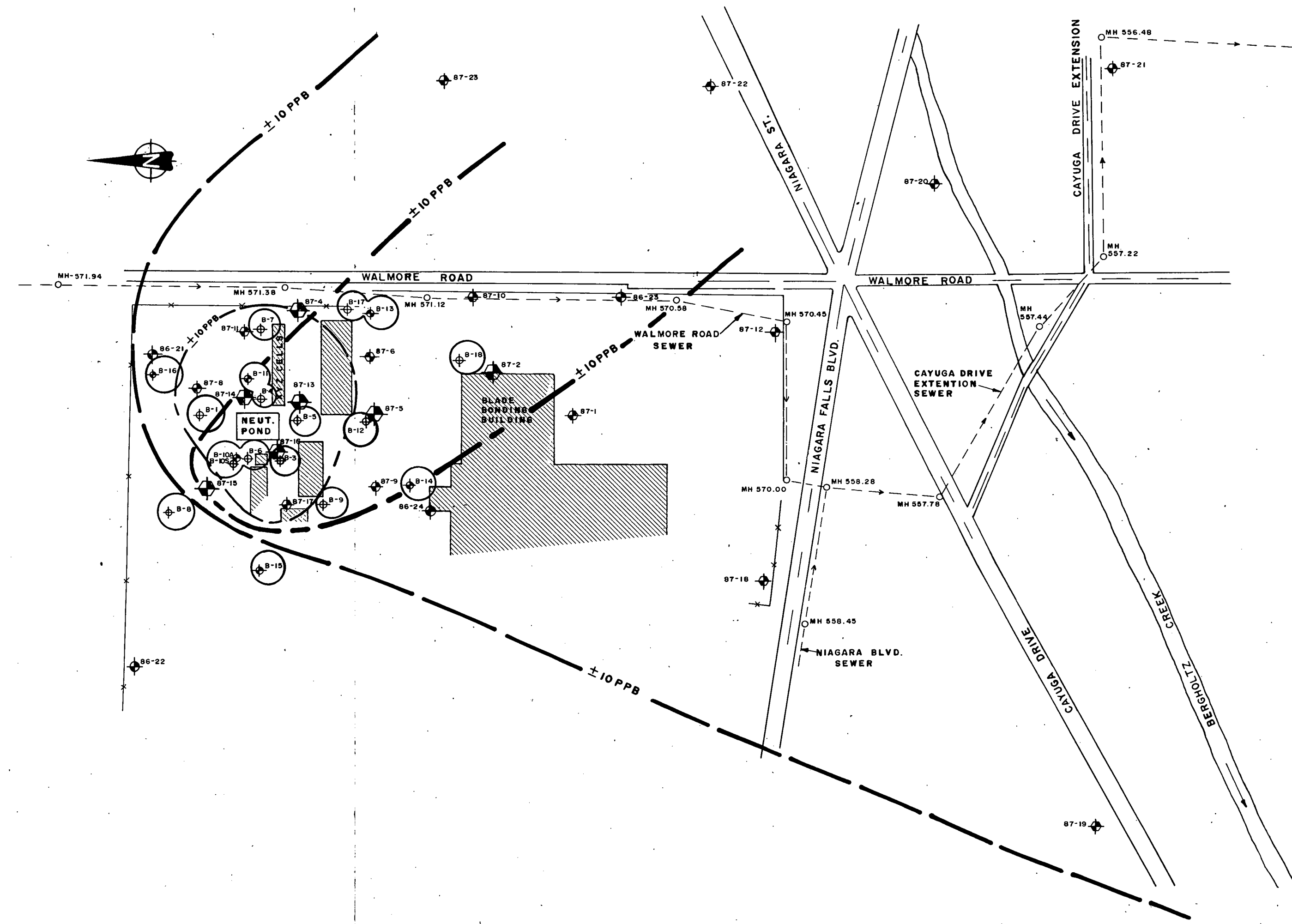
- GZA BOREHOLES**
- ⊕ B-1 OVERBURDEN MONITORING WELL
  - ⊕ B-10A ZONE 1 BEDROCK MONITORING WELL
- GOLDER ASSOCIATES BOREHOLES**
- ⊕ 86-21 EXPLORATION BOREHOLE WITH NESTED PIEZOMETERS
  - ⊕ 87-1 OVERBURDEN AND ZONE 1 BEDROCK MONITORING WELLS
  - ⊕ 87-2 ZONE 3 BEDROCK WELL (INCLUDES ZONE 1 BEDROCK WELL AND OVERBURDEN WELL)
- ○ MUNICIPAL SEWER AND MANHOLE WITH INVERT ELEVATION IN FT.
- APPROXIMATE EXTENT OF OVERBURDEN CONTAMINATION
- APPROXIMATE EXTENT OF ZONE 1 BEDROCK CONTAMINATION
- APPROXIMATE EXTENT OF ZONE 3 BEDROCK CONTAMINATION
- ⊕ B-1 MONITORING WELL FOR EXISTING INTERIM GROUNDWATER MONITORING PLAN

SCALE 1" to 200 ft

Date JAN. 22/88  
Project 871-1057

Golder Associates

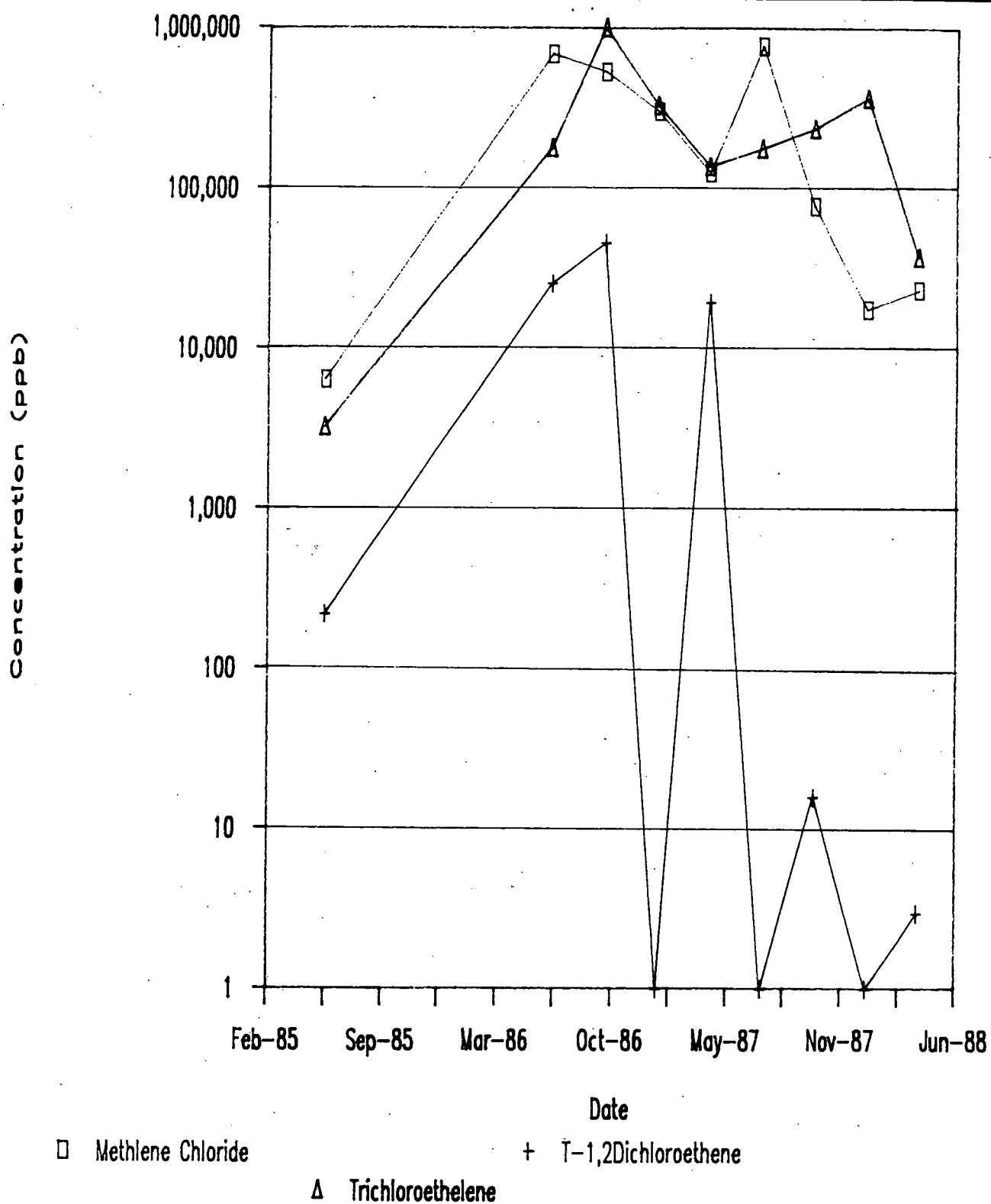
Drawn D.J.R.  
Chkd RB



# Bell Aerospace, Interim GW Monitoring

FIGURE 2

Well 10A



Date JULY 28, 1988  
Project 871-1057

**Golder Associates**

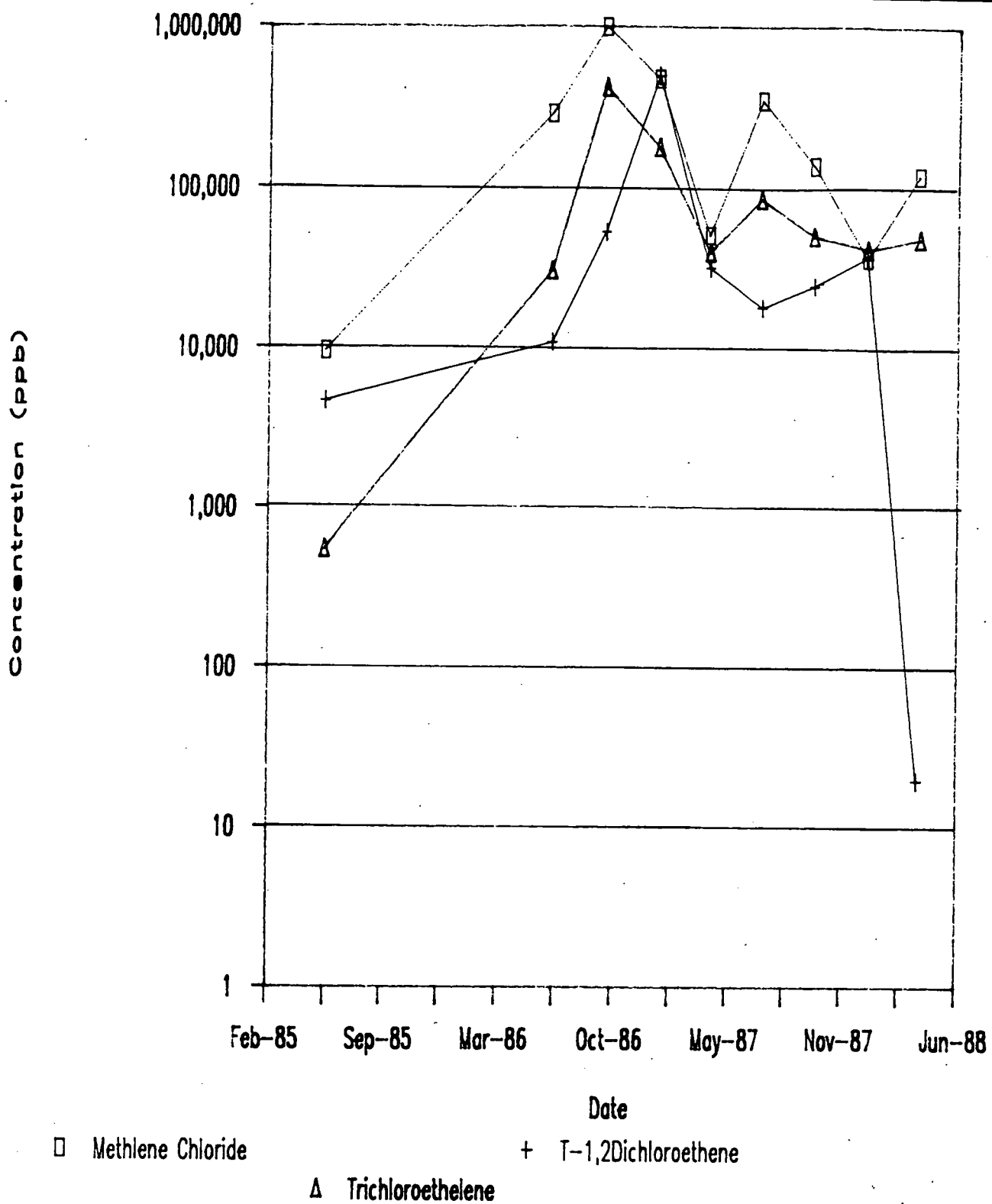
Drawn D.J.R.  
Chkd RB



# Bell Aerospace, Interim GW Monitoring

FIGURE 3

Well 11D



Date JULY 28, 1988

Project 871-1057

Golder Associates

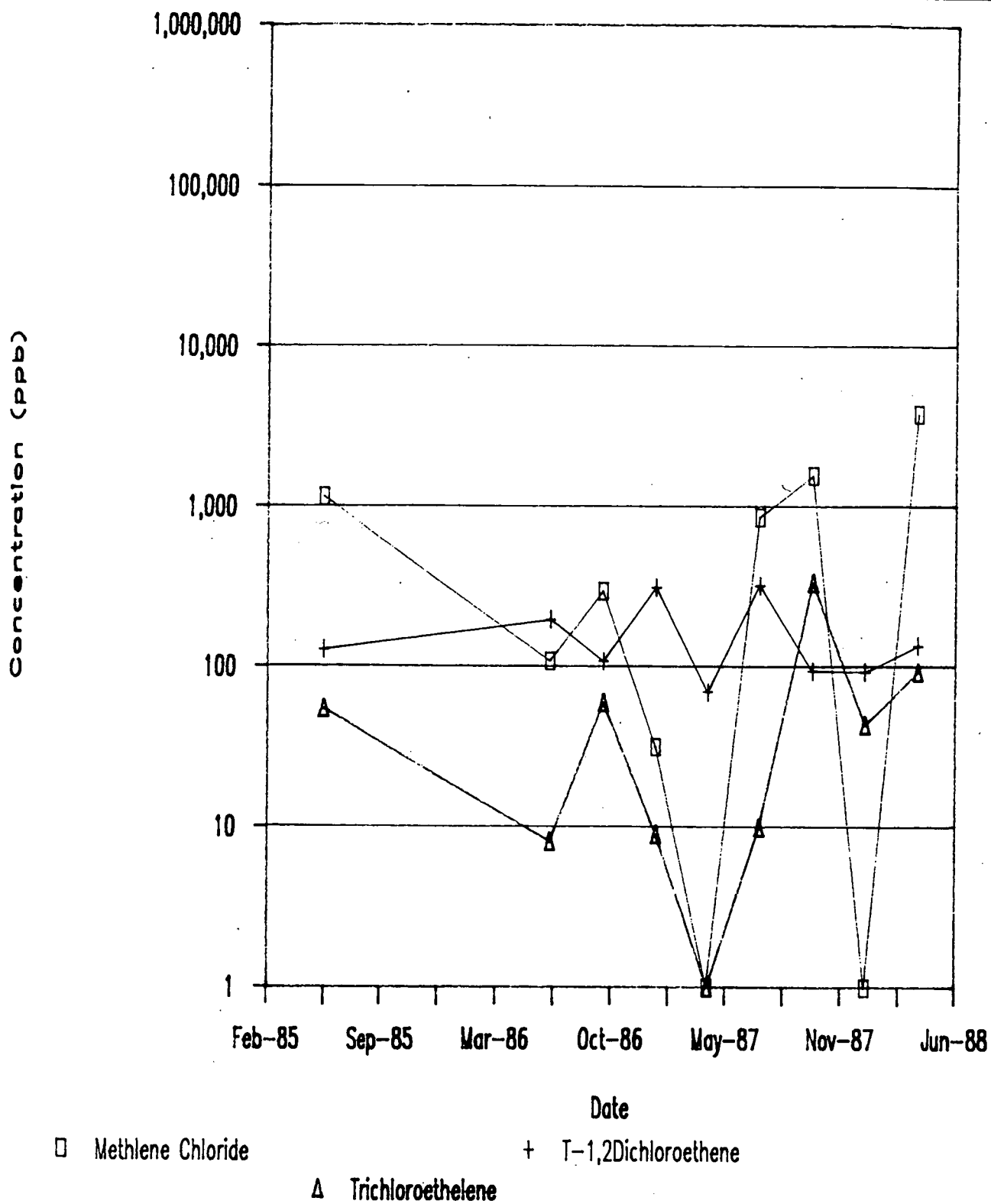
Drawn D.J.R

Chkd P.B.

# Bell Aerospace, Interim GW Monitoring

FIGURE 4

Well 13



Date JULY 28, 1988

Project 871-1057

Golder Associates

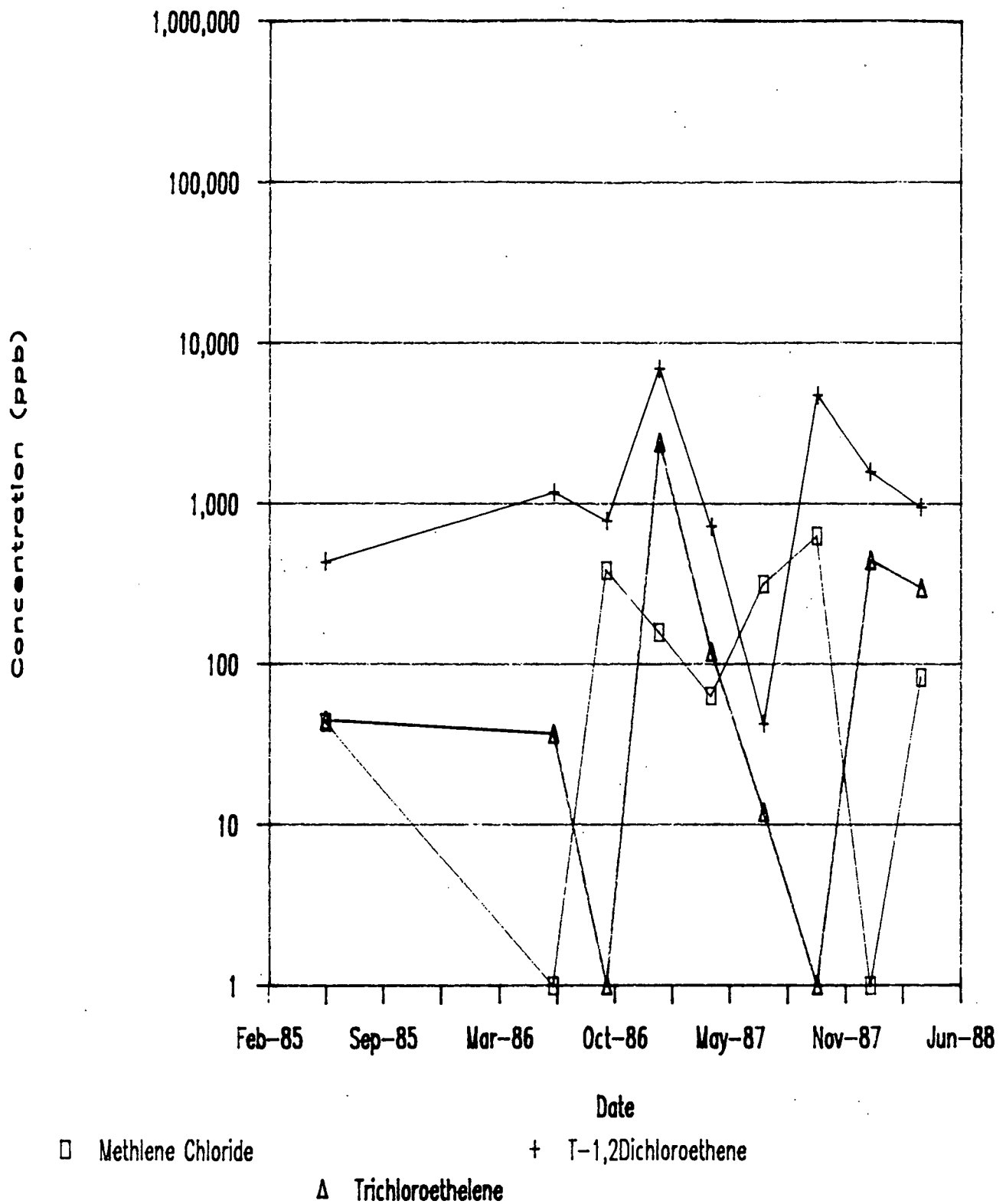
Drawn D.J.R.

Chkd. RB

# Beil Aerospace, Interim GW Monitoring

FIGURE 5

Well 14



Date JULY 28, 1988  
 Project 871-1057

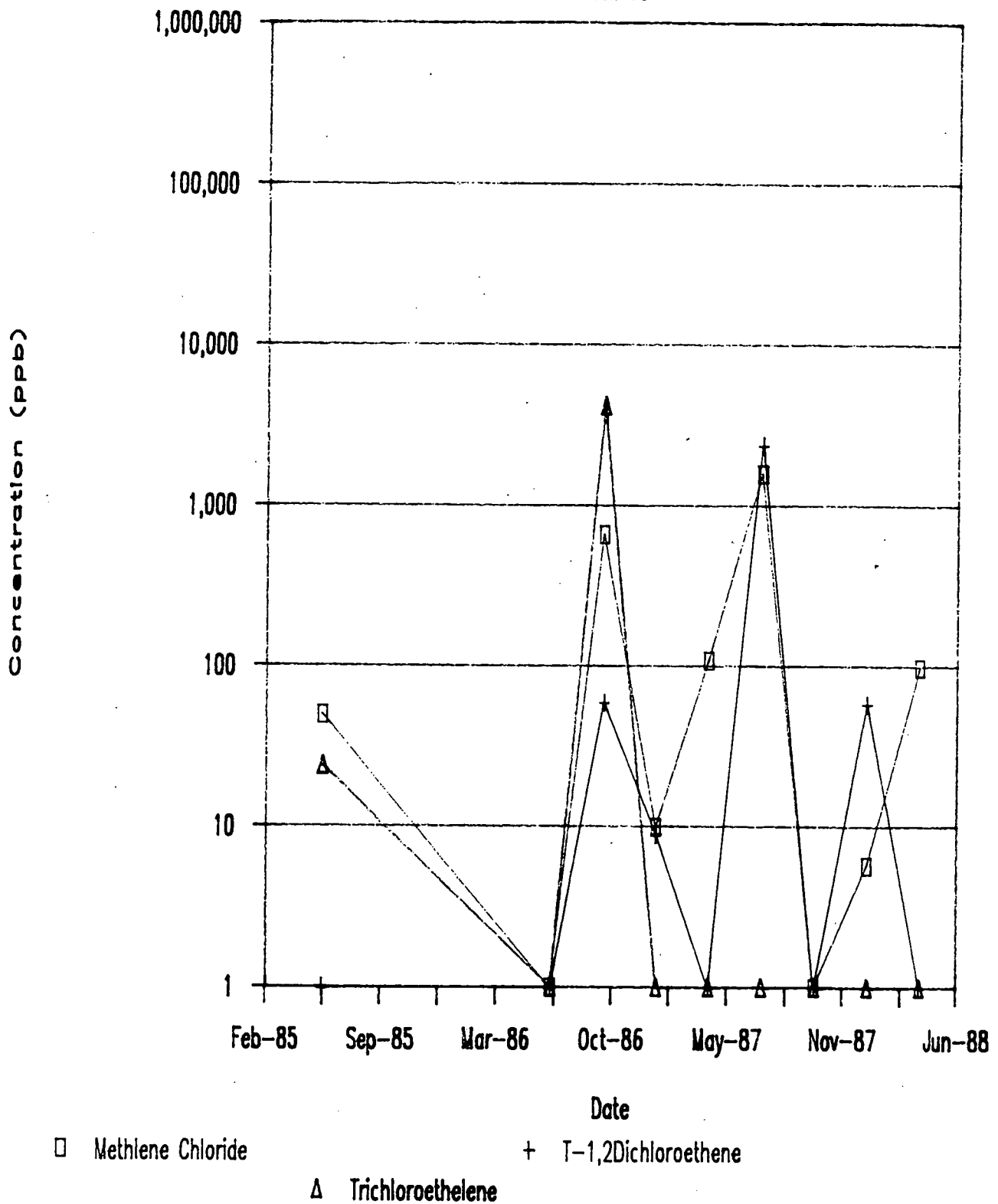
**Golder Associates**

Drawn D.J.R  
 Chkd RS

# Bell Aerospace, Interim GW Monitoring

FIGURE 6

Well 15



Date JULY 28, 1988

Project 871-1057

Golder Associates

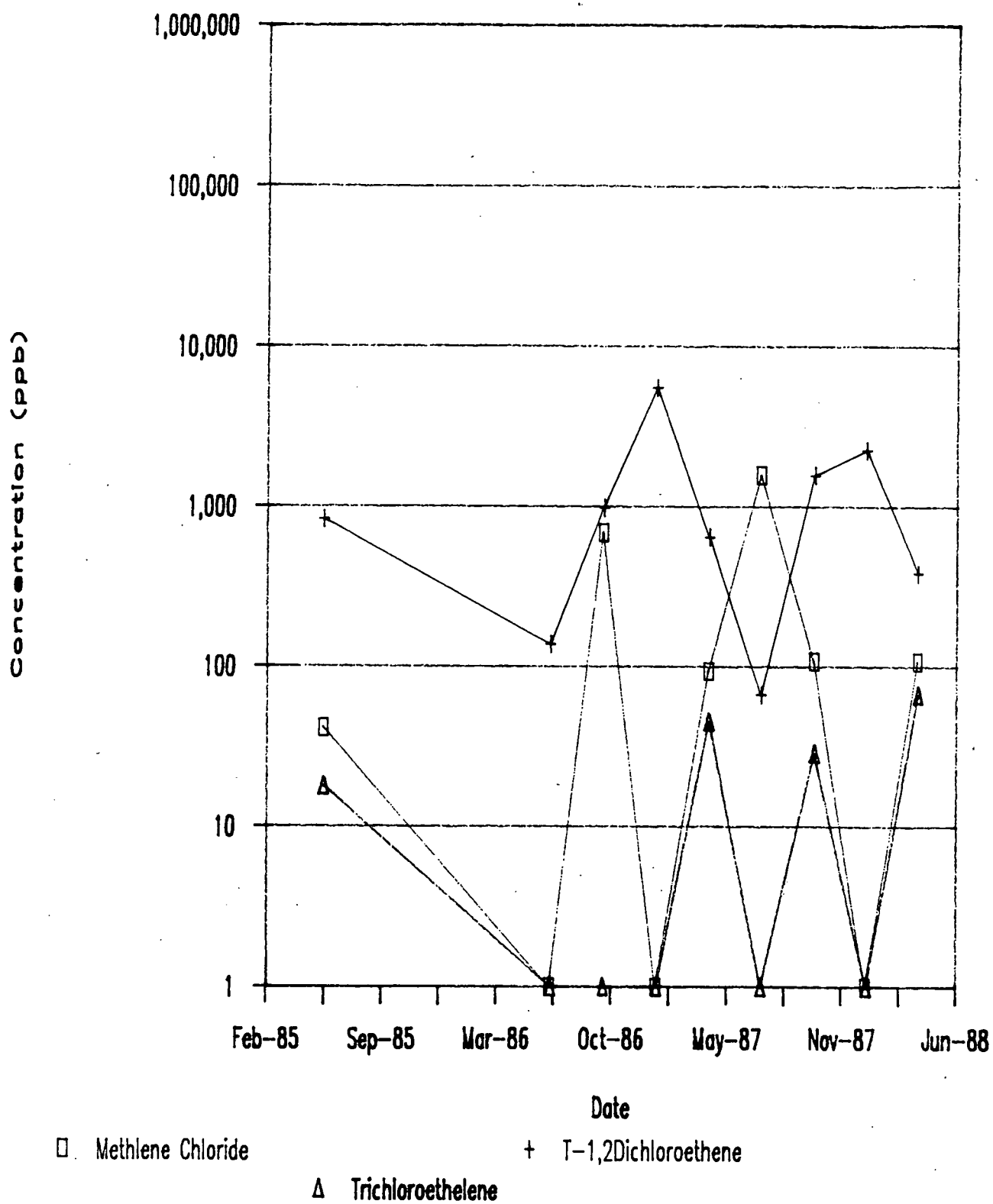
Drawn D.J.R.

Chkd. RB

# Beil Aerospace, Interim GW Monitoring

FIGURE 7

Well 16



Date JULY 28, 1988  
Project 871-1057

**Golder Associates**

Drawn D.J.R.  
Chkd. RB

FIGURE 8

GZA BOREHOLES

GOLDER ASSOCIATES BOREHOLES

→ ○ → MUNICIPAL SEWER AND MANHOLE  
MH 557.22 WITH INVERT ELEVATION IN FT.

— — — — — APPROXIMATE EXTENT OF OVERBURDEN  
CONTAMINATION.

## Golder Associates

Drawn.....**D. J. R**.....  
Chkd.....**RB**.....

871-1057

# ZONE I BEDROCK REVISED INTERIM MONITORING WELL LOCATIONS

FIGURE 9

## SYMBOLS

### GZA BOREHOLES

- ◆ B-1 OVERBURDEN MONITORING WELL
- ◆ B-10A ZONE I BEDROCK MONITORING WELL

### GOLDER ASSOCIATES BOREHOLES

- ◆ 86-21 EXPLORATION BOREHOLE WITH NESTED PIEZOMETERS
- ◆ 87-1 OVERBURDEN AND ZONE I BEDROCK MONITORING WELL
- ◆ 87-2 ZONE 3 BEDROCK WELL (INCLUDES ZONE I BEDROCK WELL AND OVERBURDEN WELL)

- MUNICIPAL SEWER AND MANHOLE WITH INVERT ELEVATION IN FT.

- ◆ 87-1 MONITORING WELL FOR REVISED INTERIM GROUNDWATER MONITORING PLAN

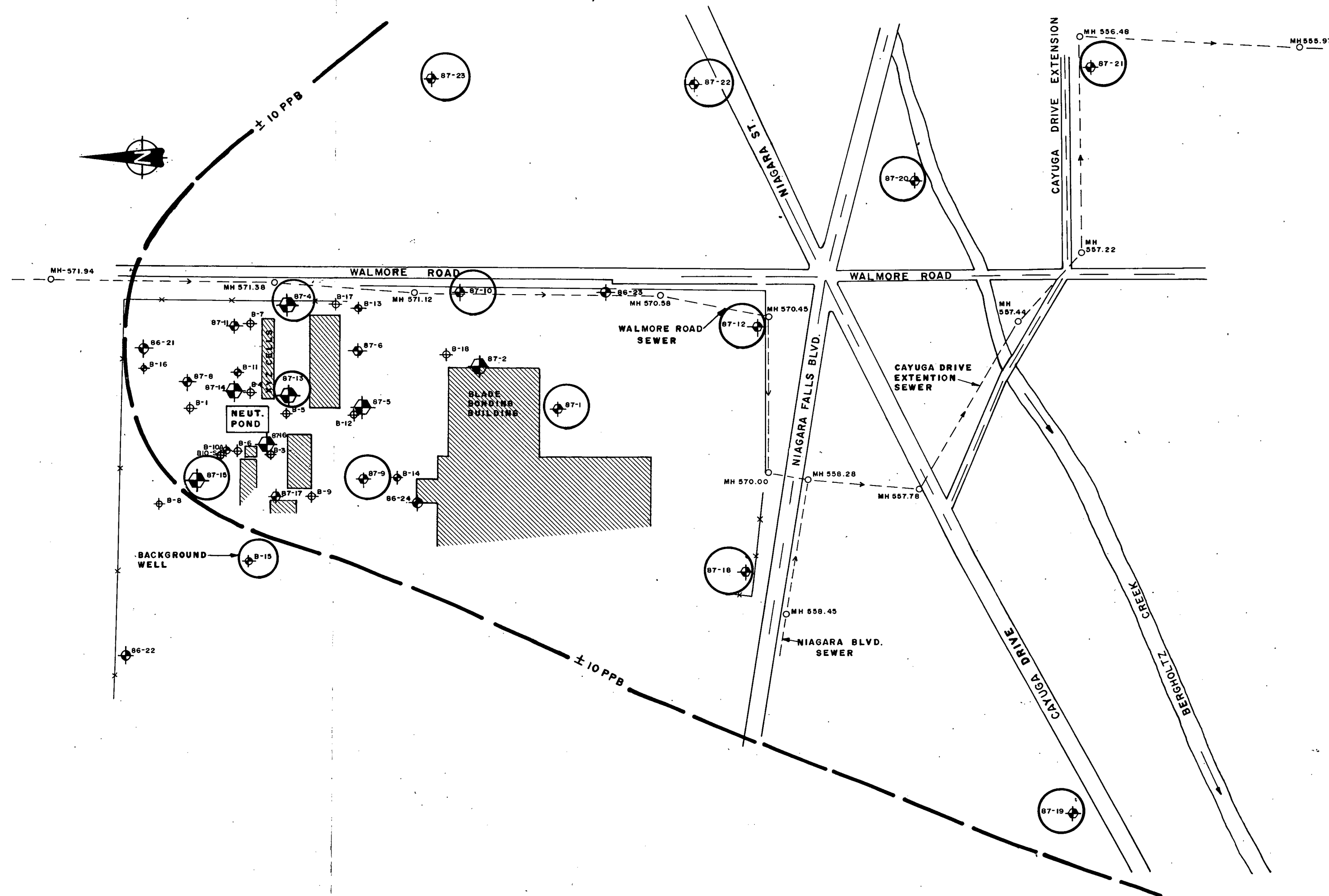
- APPROXIMATE EXTENT OF ZONE I BEDROCK CONTAMINATION

SCALE 1" to 200 ft

Date: JAN 22/88  
Project: 871-1057

Golder Associates

Drawn: D.J.R.  
Chkd: RB



# ZONE 3 BEDROCK REVISED INTERIM MONITORING WELL LOCATIONS

FIGURE 10

## SYMBOLS

### GZA BOREHOLES

- B-1 OVERBURDEN MONITORING WELL
- B-10A ZONE 1 BEDROCK MONITORING WELL

### GOLDER ASSOCIATES BOREHOLES

- 86-21 EXPLORATION BOREHOLE WITH NESTED PIEZOMETERS
- 87-1 OVERBURDEN AND ZONE 1 BEDROCK MONITORING WELL
- 87-2 ZONE 3 BEDROCK WELL (INCLUDES ZONE 1 BEDROCK WELL AND OVERBURDEN WELL)

- MUNICIPAL SEWER AND MANHOLE WITH INVERT ELEVATION IN FT.

- MONITORING WELL FOR REVISED INTERIM GROUNDWATER MONITORING PLAN.

- APPROXIMATE EXTENT OF ZONE 3 BEDROCK CONTAMINATION

SCALE 1" to 200 ft

Date JAN. 22/88  
Project 871-1057

Golder Associates

Drawn D.J.R.  
Chkd R.B.

