GROUNDWATER MONITORING REVIEW
MONITORING YEAR 1999

WINNEBAGO RECLAMATION LANDFILL
IEPA SITE NUMBER 2018080001
WINNEBAGO COUNTY, ILLINOIS

VOLUME I – REPORT

US EPA RECORDS CENTER REGION 5
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1 INTRODUCTION

This groundwater monitoring review summarizes the laboratory analysis results of monitoring data collected during quarterly sampling in 1999 from monitoring wells (Figure 1 and Table 1) at the Winnebago Reclamation Landfill located in Winnebago County, Illinois. Groundwater flow directions in both the unconsolidated sediments and dolomite are presented for each quarter in 1999. Concentration versus time data are presented for relevant compounds at appropriately sampled wells in the monitoring network and statistical summaries of the groundwater monitoring data are also provided.

This report also provides an analysis of groundwater sampling data from February 1997 to November 1999 as recommended in the groundwater summary report (HSI GeoTrans, 1999) as a continuation of the analysis required in the remedial performance groundwater monitoring plan (HSI GeoTrans, 1997). The objective of the monitoring program is to evaluate the effectiveness of source reduction and natural attenuation remedial measures for impacted groundwater at the Winnebago Reclamation Landfill (WRL) located in Winnebago County, Illinois. The groundwater sampling data collected in 1997 and 1998 have been presented previously in HSI GeoTrans (1997;1998).

Because decreases in plume size takes considerable amounts of time, significant effects of these remedial measures on groundwater quality are not expected to be observed at downgradient monitoring wells after almost three years of remediation from February 1997 to November 1999. Previous analyses indicate that the ammonia plume mass is decreasing (HSI GeoTrans, 1999). This plume recession is likely caused by source reduction measures (partial landfill capping and leachate removal) and natural attenuation. This report will summarize the results of quantitative trend analyses that have been performed on groundwater monitoring data collected from February 1997 to present from the site network of 36 monitoring points (Figure 1 and Table 1) in order to determine the degree that plume recession is occurring.

2 RELEVANT BACKGROUND

Historical groundwater sampling has shown that impacted groundwater is present beneath and downgradient of the Pagel Landfill Facility. The elevated compounds are primarily inorganic compounds released from the Pagel Landfill and low levels of organic solvents which are attributed to the upgradient Acme Solvents Superfund site. Based on several studies (Andrews, 1996; GeoTrans, 1995 a, b, h; 1996; 1999), source reduction and natural attenuation were chosen as the remedy to address both ammonia and low levels of organic and inorganic compounds in groundwater. Source reduction measures include leachate collection and installation of a low permeability final cover in order to reduce releases to groundwater. Natural attenuation mechanisms such as precipitation recharge, volatization, dispersion, and degradation will reduce existing elevated concentration levels. With the current operation of a pump-and-treat system at Acme Solvents, organic concentration levels in groundwater at the Pagel Landfill should remain low because of their capture prior to on-site migration. The effectiveness of source control measures and intrinsic remediation will be monitored to examine whether these remedies will reduce remaining inorganic compound concentrations to levels below their AGQS.

3 SUMMARY OF RECENT DATA COLLECTION AND REMEDIAL ACTIVITIES

Over the past few years, several data collection and remedial (partial landfill capping and leachate removal) activities have been performed. As required in the landfill permit issued on August 22, 1996, quarterly groundwater sampling was initiated in November 1996 with the collection of samples from 25 wells and laboratory analysis for inorganic leachate indicator compounds. Since April 1997, quarterly groundwater sampling has continued for leachate-derived constituents at 33 monitoring wells and 3 stream gages (see Figure 1). On February 15, 1997, an automated leachate collection system was started and remained in operation until May 15, 1997. At that time, pumping of the leachate was temporarily discontinued to enable construction of the western part of the final leachate management system (Appendix B), which became operational in August 1997. The leachate collection system is operational and is reducing the source of groundwater contamination. During 1998, the low permeability landfill cap (Appendix A) was also installed over the western edge of the landfill in order to reduce leachate generation.

For each of the four quarters in 1999, groundwater samples were collected from the 33 wells and 3 stream gages (see Figure 1) as stated in the remedial assessment monitoring plan (HSI GeoTrans, 1997). In April 1999, groundwater samples were collected and were analyzed for the 40 CFR 258 Subtitle D Appendix II parameters. Table 2 gives the total list of parameters that were used to evaluate the effectiveness of source reduction and natural attenuation remedial measures.

4 SUMMARY OF HYDROGEOLOGIC CONDITIONS

The Pagel landfill facility overlies an unconsolidated-bedrock aquifer system. A generalized hydrogeologic cross section of this aquifer system is shown in Figure 2. This aquifer system consists of a high permeability, unconsolidated sand and gravel aquifer overlying a lower permeability dolomite bedrock aquifer. At the site, groundwater flow in both the unconsolidated sediments and bedrock is to the west-northwest (GeoTrans 1995e). In general, the aquifer system is recharged in the bedrock uplands with groundwater flowing downward in this area and later flowing back upward into the higher permeability sand and gravel sediments. Near the landfill, shallow groundwater in the unconsolidated sediments discharges into Kilbuck Creek while deeper groundwater flows beneath Kilbuck Creek and continues toward the west-northwest.

Figures 3 through 14 present potentiometric surface maps for the: (1) upper unconsolidated sediments; (2) lower unconsolidated sediments; and, (3) shallow bedrock for the four quarter in 1999. In agreement with historical potentiometric maps, these figures show that shallow groundwater in the unconsolidated sediments flows to the west-northwest and discharges to Kilbuck Creek while deeper groundwater flows below Kilbuck Creek. Groundwater modeling (GeoTrans, 1995f) and chemical data has indicated that some of the deeper unconsolidated groundwater flowing beneath Kilbuck Creek flows back upward and discharges at lower elevation reaches of Kilbuck Creek to the northwest near G34S.

Figures 3, 6, 9, and 12 present the potentiometric surface maps for the upper zone of the sand and gravel aquifer, showing that groundwater flow is west-northwest. Figures 9 and 12 also show the local effect of dewatering activities to the south of the landfill. The groundwater levels in wells G26S and G123 are significantly lower than previous values (HSI GeoTrans, 1998). Groundwater flows to the southeast in the region south of the WRL, however the groundwater flow direction through the existing landfill in the upper zone remains to the west-northwest.

In the lower zone, groundwater flows to the southwest beneath Kilbuck Creek from a recharge zone in the vicinity of the intermittent stream, as shown in the potentiometric surface maps in figures 4,7, 10 and 13. The effects of the dewatering activities are again

seem based on the relatively lower groundwater levels in wells G36 and G26D. The groundwater divide beneath the southern portion of the existing landfill is consistent with the divide observed in the upper zone (Figures 9 and 12).

Figures 5, 8, 11, and 14 shows that shallow bedrock groundwater flows toward the west. The figures show that the hydraulic gradients are lower in July and October. This may indicate that more upward flow is occurring as a result of the dewatering activities to the south. As shown at the MW106/P4R and G132 well cluster, the higher heads in the bedrock aquifer are consistent with the interpretation that shallow bedrock groundwater flows upward into the sand and gravel aquifer.

5 MONITORING NETWORK

The groundwater monitoring network for assessing remedial performance at the Pagel Landfill Facility consists of 33 monitoring wells and 3 stream gages (see Figure 1 and Table 1). The background monitoring wells (G109, G109A, G113, G113A, G114, and G120B) are located upgradient of the Pagel Landfill facility. These wells were used to define Applicable Groundwater Quality Standard (AGQS) values for leachate-derived compounds (Table 3) in groundwater based on statistical prediction interval methods (HSI GeoTrans, 1995c). The Pagel Landfill Facility monitoring network consists of 11 additional monitoring points in addition to the wells listed in the landfill permit. This extensive monitoring network was designed to ensure that constituent plumes are properly monitored in both the upper and lower zones of the sand and gravel aquifer, and to ensure protection of both bedrock groundwater and surface water quality.

6 ANALYSIS OF WATER QUALITY DATA

6.1 ANALYSIS RESULTS FOR 1999 GROUNDWATER SAMPLING EVENTS

For each of the four quarters in 1999, groundwater samples were collected from the 33 wells and 3 stream gages. In April 1999, groundwater samples were collected and were analyzed for the 40 CFR 258 Subtitle D Appendix II parameters. These results showed that organic compounds exceeded the AGQS and/or MCL limits in the following upgradient wells: G109A, G113,G114 and G120B, and the following downgradient wells: B15R,G132, G33D, G38, G40, MW106 and P4R.

Table 4 presents the organic compound results for groundwater from 1997, 1998, and 1999 sampling events. The number of exceedances decreased from 35 in 1998 to 15 in 1999. In general, most of these occurrences in 1999 were in the downgradient wells. Chlorobenzene was detected solely in the upgradient well while 1,4-Dichlorobenzene and cis-1,2-Dichloroethene were detected in both the upgradient and downgradient wells. For 1-4-Dichlorobenzene, the levels seen in the downgradient wells are at lower levels than in the upgradient well, but are similar for cis-1,2-Dichloroethene. Chlorobenzene may be a daughter product of the natural attenuation of 1,4-Dichlorobenzene and was not present above the AGQS and/or MCL limits. Phenol, tetrachlorothene, and tetrahydrofuran were detected solely in the downgradient wells. Tetrachloroethene was detected in wells that are located in the shallow bedrock and the lower zone of the sand and gravel aquifer, but not in the wells located above in the upper zone. This suggests that the source of this contamination is from the Acme Solvent site. Phenol was detected in two wells located in the lower zone of the sand and gravel aquifer. Tetrahydrofuran was detected in one well located in the upper zone of the sand and gravel aquifer.

A summary of the chemicals of concern (COCs) detected since March of 1995 is presented in Table 5. The chemicals of concern are those chemicals that exceed their respective AGQS or MCL. There are 59 chemicals on this COCs list. The seven new COCs added to the list this year are: 1,2,4-trimethylbenzene, aluminum, cadmium, cobalt, magnesium, total dissolved solids (TDS), and xylenes (Total). In addition, there were nine

chemicals that had new highs: ammonia, benzene, biological oxygen demand (BOD), chromium, fluoride, potassium, sodium, tetrachloroethene and vanadium. The four organic compounds that were newly added or that had new highs were all detected at the side-gradient shallow bedrock wells, B13, G110 and G111A (not shown). As previously stated, the organic compounds within this new group of COCs have been attributed to releases from the upgradient Acme Solvents site. Of the remaining twelve chemicals, ten are inorganic parameters and two are bulk field parameters. Appendix C presents the time series analysis for the seven new COCs and the nine compounds with elevated concentration levels.

Appendix D presents the groundwater monitoring data and summary statistics. It is seen that there were 8 four-quarter increases including three in which the AGQS was exceeded in 1999. A four quarter increase was seen for ammonia (dis) at monitoring well G114, chloride (dis) at G118A and P4R, manganese (dis) at G118R and P1, nitrate (dis) at G116D, and sulfate (dis) at E4 and G34D. Exceedances of the AGQS or MCL occurred for ammonia (dis) at G114 and for chloride (dis) at P4R in the last two quarters, and for manganese (dis) at G118R in the last quarter of 1999. G114 is a sidegradient well in the shallow bedrock aquifer. For the other four-quarter increase for manganese (dis) and chloride (dis), as well as those for nitrate (dis) and sulfate (dis), the observed values are much lower than their AGQS or MCL values, and therefore, should not be considered a concern.

6.2 AMMONIA WATER QUALITY DATA

The presence of ammonia in groundwater at the site is attributed primarily to landfill activities. In addition, ammonia concentrations are sufficiently high that its plume is larger than the other COC plumes. In comparison, elevated levels of chloride at the site also occur as a result of other potential sources (road salting activities and water softeners), and therefore the use of chloride may not be very effective in examining effects of source reduction measures (leachate removal and landfill capping). Because of its attributes, ammonia is considered best representative of leachate-derived compounds in groundwater. Therefore, ammonia will be used as the surrogate compound for leachate parameters for the analyses in this report.

Figures 15 through 17 show dissolved ammonia concentrations for sampling points in each monitoring zone for January 1999. As expected, ammonia plume concentrations were highest near the landfill source area and decreased toward the west as a result of volatilization, sorption, dispersion, and precipitation recharge natural attenuation mechanisms. It can be seen in these figures that the highest concentrations of ammonia in groundwater were generally in the lower zone of the sand and gravel aquifer at locations downgradient of the landfill. For example, the highest observed ammonia concentration during this sampling event was 270 mg/L at G35D, which is located west of Kilbuck Creek and approximately 450 ft downgradient of the landfill.

Figures 18 through 20 show dissolved ammonia concentrations for sampling points in each monitoring zone for April 1999. Again, as expected, ammonia plume concentrations were highest near the landfill source area and decreased toward the west as a result of volatilization, sorption, dispersion, and precipitation recharge natural attenuation mechanisms. It can be seen in these figures that the highest concentrations of ammonia in groundwater were in the lower zone of the sand and gravel aquifer at locations downgradient of the landfill. For example, the highest observed ammonia concentration during this sampling event was 250 mg/L at MW106, which is located east of Kilbuck Creek and approximately 250 ft downgradient of the landfill.

Figures 21 through 23 show dissolved ammonia concentrations for sampling points in each monitoring zone for July 1999. Again, as expected, ammonia plume concentrations were highest near the landfill source area and decreased toward the west as a result of volatilization, sorption, dispersion, and precipitation recharge natural attenuation mechanisms. In contrast to the two previous quarters, it can be seen in these figures that the highest concentrations of ammonia in groundwater were in the upper zone of the sand and gravel aquifer at locations downgradient of the landfill. For example, the highest observed ammonia concentration during this sampling event was 140 mg/L at P1, which is located east of Kilbuck Creek and approximately 250 ft downgradient of the landfill. The ammonia concentration significantly decreased west of Kilbuck Creek at G35D in the lower zone of the sand and gravel aquifer while increasing slightly at G116A.

Figures 24 through 26 show dissolved ammonia concentrations for sampling points in each monitoring zone for November 1999. Again, as expected, ammonia plume concentrations were highest near the landfill source area and decreased toward the west as a result of volatilization, sorption, dispersion, and precipitation recharge natural attenuation mechanisms. It can be seen in these figures that the most instances of high concentrations of ammonia in groundwater were in the lower zone of the sand and gravel aquifer at locations downgradient of the landfill at monitoring wells G38, MW106 and P4R. The highest observed ammonia concentration in each zone was comparable at 120, 120, and 130 mg/L in the upper and lower zones of the sand and gravel aquifer and in the bedrock, respectively. The ammonia concentration significantly continued to decrease west of Kilbuck Creek at G35D and G116A in the lower zone of the sand and gravel aquifer.

The ammonia concentrations in bedrock monitoring wells are shown in Figures 17, 20, 23, and 26. In general, ammonia concentrations are lower in bedrock because groundwater generally flows upward from the bedrock to the unconsolidated sediments. The higher concentrations at monitoring well G110, located adjacent to the landfill, are most likely caused by transverse dispersion as the ammonia plume migrates west. As expected, downgradient ammonia concentrations in bedrock at G116D and G132 are lower because of the upward flow of groundwater from bedrock into the sand and gravel aquifer. However, the ammonia concentration at G132 increased above earlier values in recent sampling events.

6.3 MASS-IN-PLACE ANALYSES

In order to estimate the mass-in-place of each compound, the program TinMass (Appendix E) was used to estimate changes in total contaminant mass over time as part of the remedial performance assessment monitoring. Using site-specific total porosity data, the estimated total mass of relevant compounds in groundwater was tabulated for each sampling event in order to examine the rate of compound mass decrease over time. Trends in total mass versus time were then used to assess whether source reduction and intrinsic remediation are causing significant reductions in dissolved plume mass in the GMZ. This method integrates effects of both plume concentrations across the site and variations of changes in saturated thickness. For example, TinMass accounts for dilution effects during recharge

periods when aquifer saturated thicknesses are greater. TinMass also allows one to examine spatial changes in plume mass at different parts of the site.

Figures 27 and 28 present the calculated dissolved ammonia mass-in-place in the upper and lower zones of the sand and gravel aquifer for January 1997 and November 1999, respectively. As expected, the highest plume mass is west and immediately downgradient of the landfill. The calculated ammonia plume mass for all of the sampling events from January 1997 to November 1999 is presented in Table 7. These results indicate that while the total ammonia plume mass increased from the third quarter of 1998 until the second quarter of 1999, the total mass has decreased in the last two quarters of 1999.

The mass change in each element over time is summarized in Volume II and presented as time series plots. Figure 29 shows a plot of net change of the mass per unit area in each triangulated element between January 1997 and November 1999 in dissolved ammonia mass for the upper and lower zones of the sand and gravel aquifer. While the most significant reductions have occurred int the lower zone, as seen in Figure 29, it also contains the highest concentration of mass near the boundary of the WRL as seen in Figure 28. There was a net decrease in the mass per unit area throughout the lower zone except for the southern plume boundary. The net increase in the dissolved ammonia mass in element 5 is driven by the increase in the increased observed concentration at G38. In the upper zone, the ammonia plume mass has decreased at downgradient locations west of the facility. The largest increase in the upper zone is within the boundary of the WRL. The net decrease to the west of the facility in this zone of the aquifer suggests that remedial measures are resulting in plume reduction. The net mass increase north and west flow may be due to past plume migration in the direction of groundwater flow.

7 REMEDIAL PERFORMANCE MONITORING

Additional groundwater data will be collected to continue to assess the performance of source reduction (partial landfill capping and leachate removal) and natural attenuation in terms of reducing impacted groundwater concentrations beneath and downgradient of the Pagel landfill. This period of time should be sufficient for collecting an appropriate number of samples that both incorporates effects of seasonal variations and allows for proper statistical evaluation of whether there are downward trends in observed compound concentrations. The data collected during the performance evaluation period will be useful for estimating compound attenuation rates as a result of source control and natural attenuation, and would later be useful for establishing initial trends for evaluation of any additional remedial measures, if necessary. The use of a more comprehensive set of monitoring points, consistent set of relevant analytical parameters, and consistent monitoring frequency will also help to ensure that appropriate analyses of remedial performance can be performed.

The remedial performance monitoring will be carried out in accordance with 35 IAC 811.326. The monitoring will examine trends of leachate indicator compounds at 33 wells and 3 stream gages (see Figure 1 and Table 1), which included 11 additional sampling points that were added to the wells listed in the landfill permit. As stated in the landfill permit, quarterly sampling of leachate indicator compounds (List 1 in Table 2) will continue to be performed during the performance period. Annual sampling of organic compounds (List 2 in Table 2) will also continue to be performed during the performance evaluation period. In addition, quarterly data for dissolved oxygen and eH may be proposed for addition to the monitoring parameter list. As stated above, statistical analyses will be performed to assess trends in elevated compounds. The details regarding analysis methodologies are presented in HSI GeoTrans (1997).

8 REPORTING AND SCHEDULE

The reporting will consist of annual progress reports that both present new groundwater quality data and update the trend analyses based on the new data that is collected each year. These annual reports will continue to be submitted annually on May 1st of each year. These reports will also summarize and provide an analysis of the results of hydrogeologic and geochemical conditions. As stated in HSI GeoTrans (1999), eight measurements should be available for each quarter in order to eliminate seasonal effects on concentration trends. After this data is collected during remedial performance assessment monitoring, a summary report will be submitted on July 15, 2004 to more accurately define the extent that source reduction remedial measures and intrinsic remediation are causing the leachate plume to recede, and whether additional remedial measures are necessary.

9 SUMMARY

This groundwater monitoring review summarized the laboratory analysis results of groundwater samples collected in 1999 from monitoring wells at the Pagel Landfill Facility in Winnebago County, Illinois. Results showed that dissolved chlorinated compounds are present at low levels both upgradient and downgradient of the landfill. These organic solvents have been attributed to the upgradient releases from the Acme Solvents Superfund site. Results of these groundwater sampling events show that elevated levels of inorganic constituents are still present beneath and downgradient of the Pagel Landfill Facility. The primary inorganic compounds of concern are ammonia and chloride. In order to reduce remaining elevated inorganic concentration levels, source reduction measures (landfill capping and leachate removal) are being performed and evaluated through extensive groundwater sampling. Once a sufficient amount of quarterly data is collected from the 33 wells and 3 stream gages in the remedial performance monitoring network, detailed statistical analyses will be performed to assess the efficacy of these remedial measures. The results of these analyses will be discussed in detail in later submittals.

10 REFERENCES

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HSI GeoTrans, 1999. Groundwater Summary report to Evaluate Effectiveness of source reduction and Natural Attenuation Remedial Measures, Winnebago Reclamation Landfill, Winnebago County, Illinois.

FIGURES

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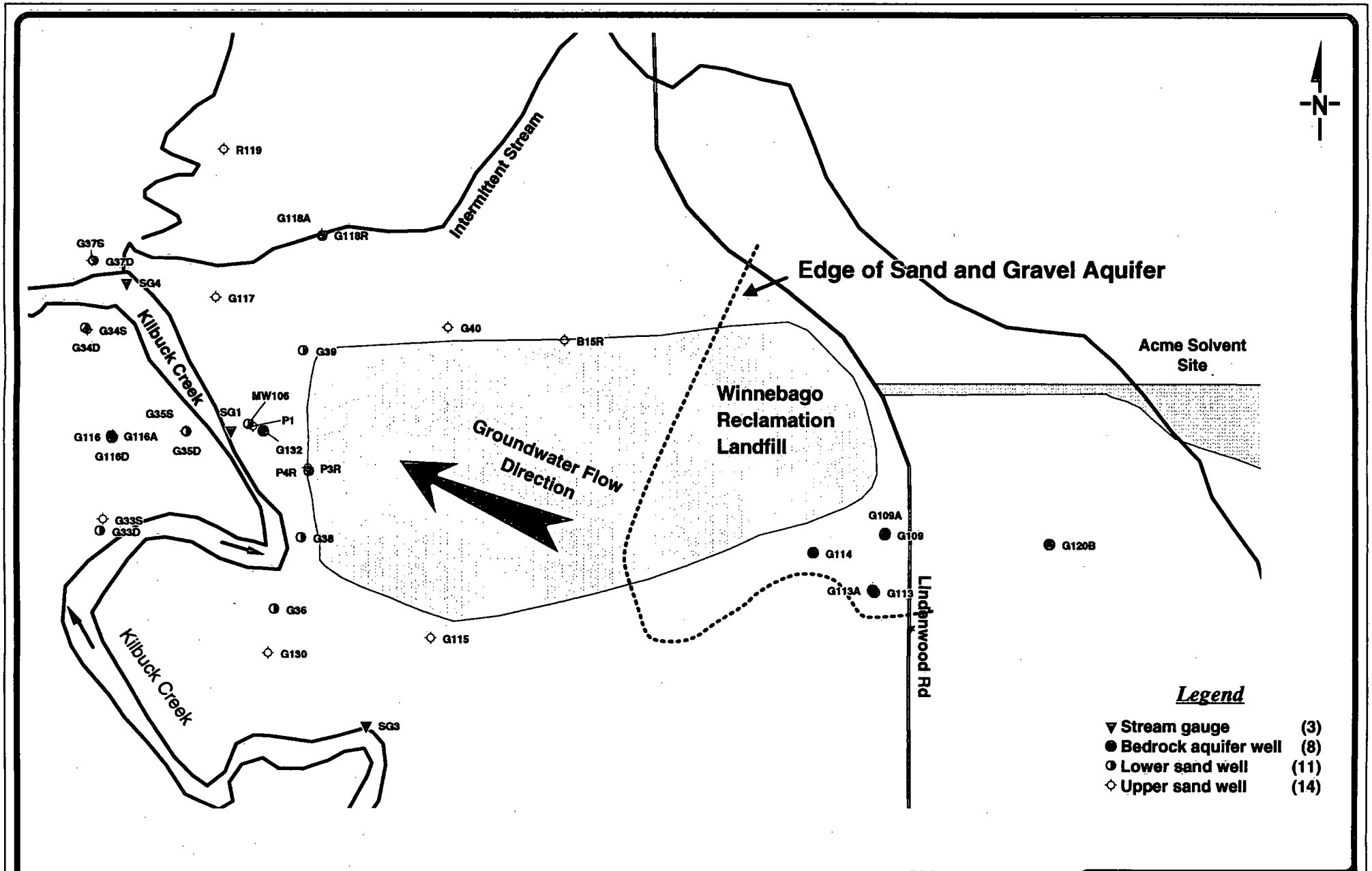
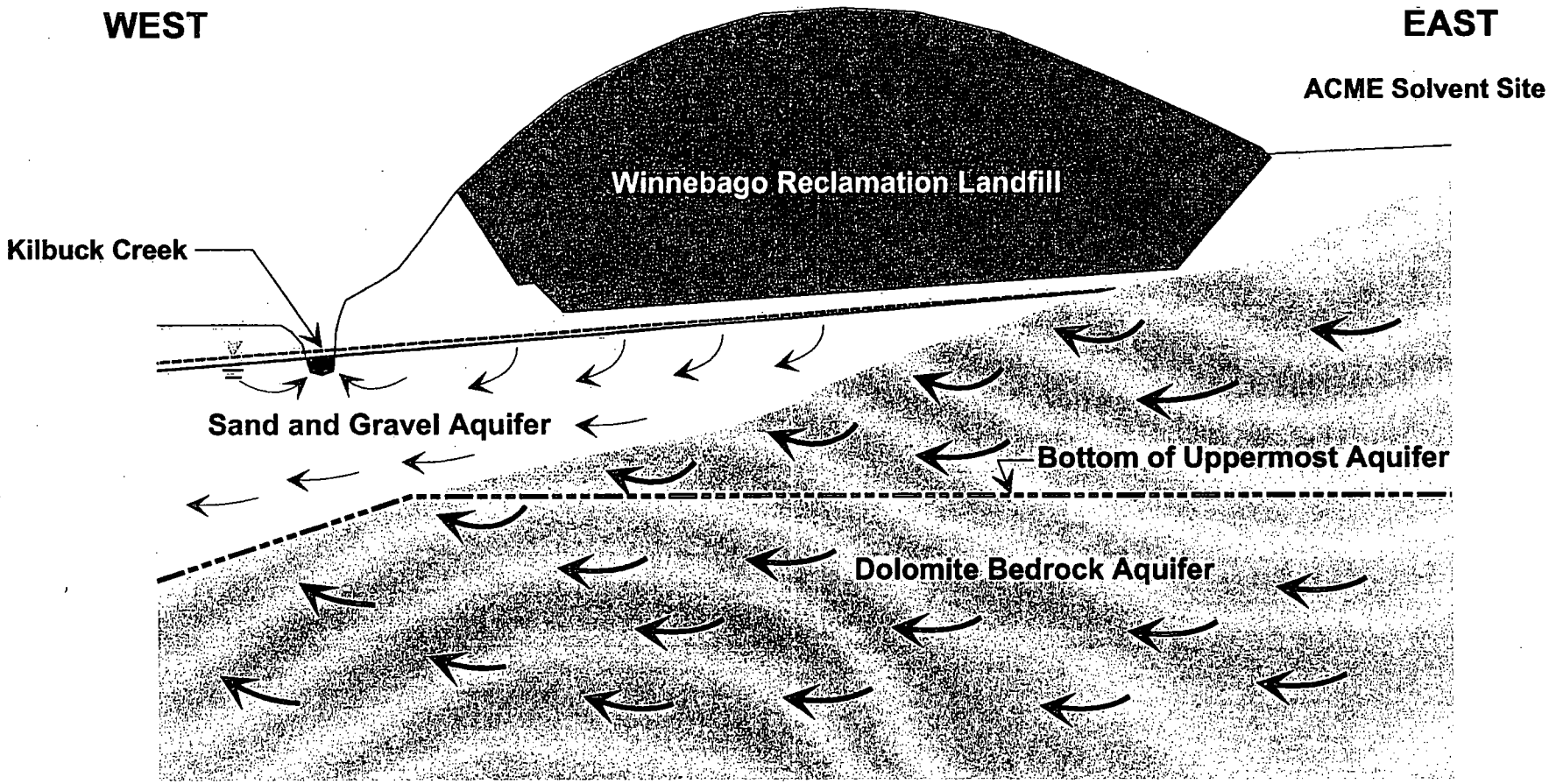


Figure 1. Performance assessment groundwater monitoring network.



Legend

- sand and gravel potentiometeric surface
- bedrock potentiometeric surface
- bottom of uppermost aquifer

Not drawn to scale

TITLE:
GENERALIZED CROSS SECTION OF HYDROGEOLOGIC CONDITIONS AT THE WRL SITE

LOCATION:
Winnebago Reclamation Services, Rockford, IL

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB
DRAFTED:	PK
FILE:	N021001A.DSF
DATE:	9-9-98

FIGURE: 2

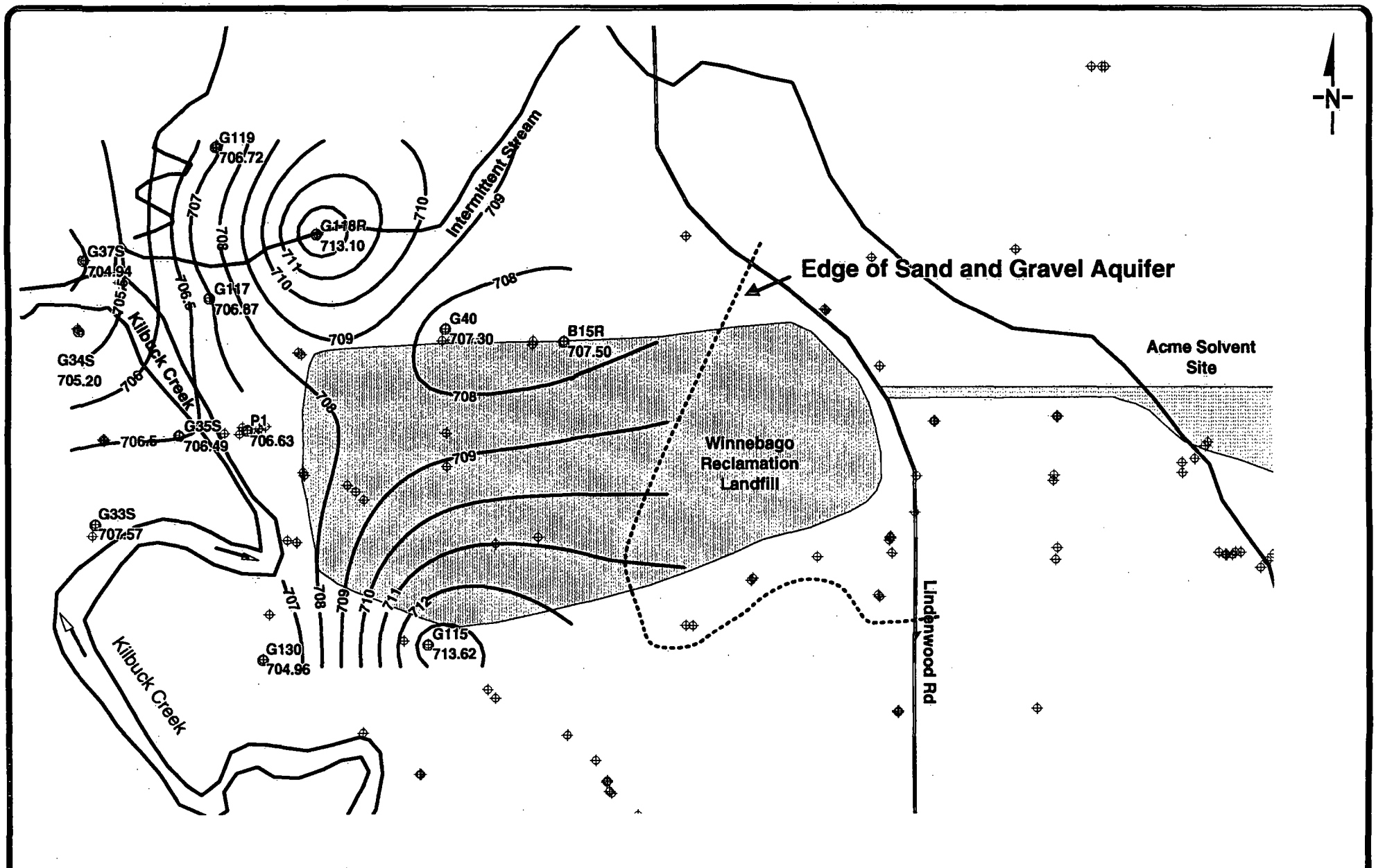


Figure 3. January 1999 water level elevations (ft, MSL) for the upper zone of the sand and gravel aquifer.

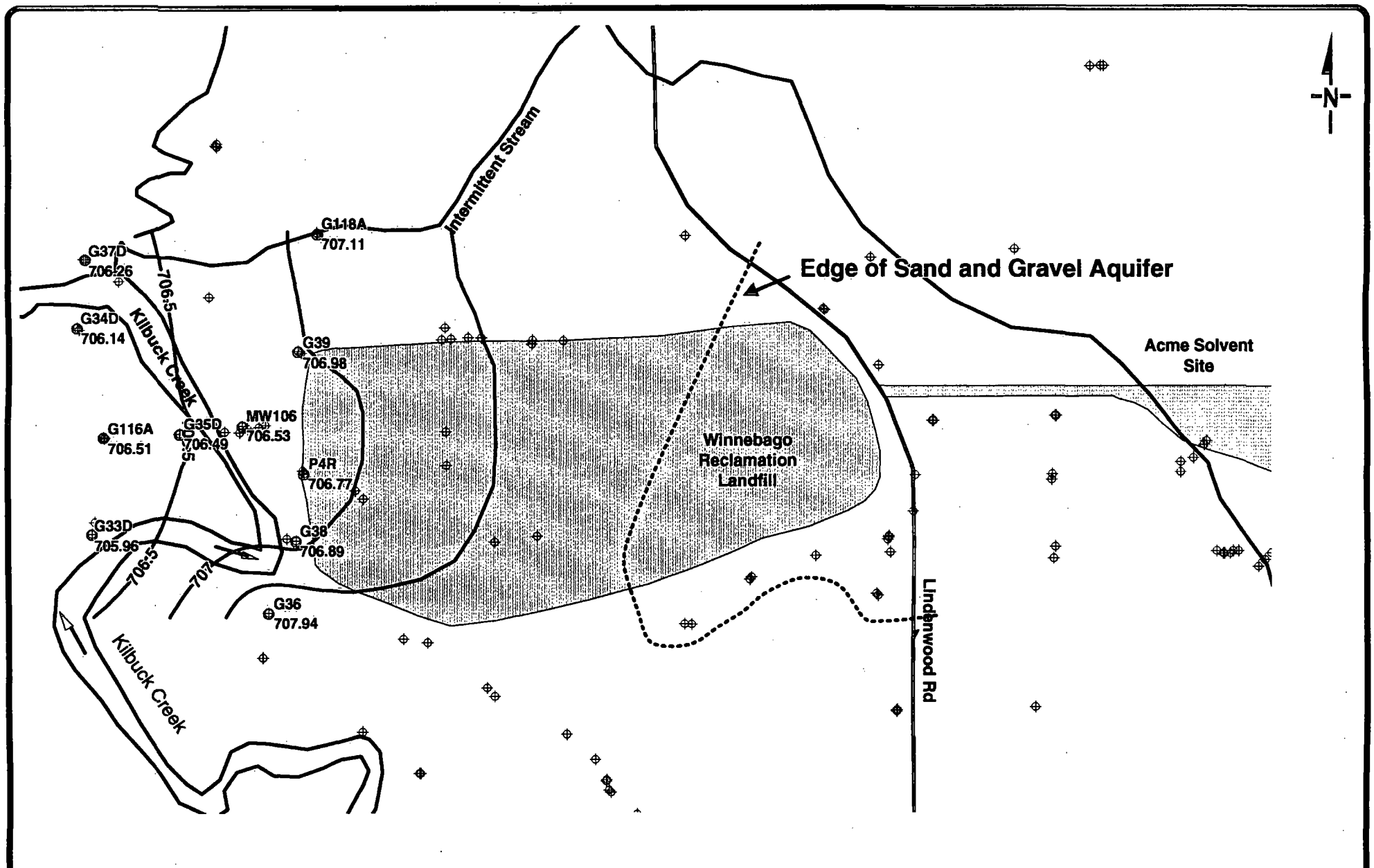


Figure 4. January 1999 water level elevations (ft, MSL) for the lower zone of the sand and gravel aquifer.

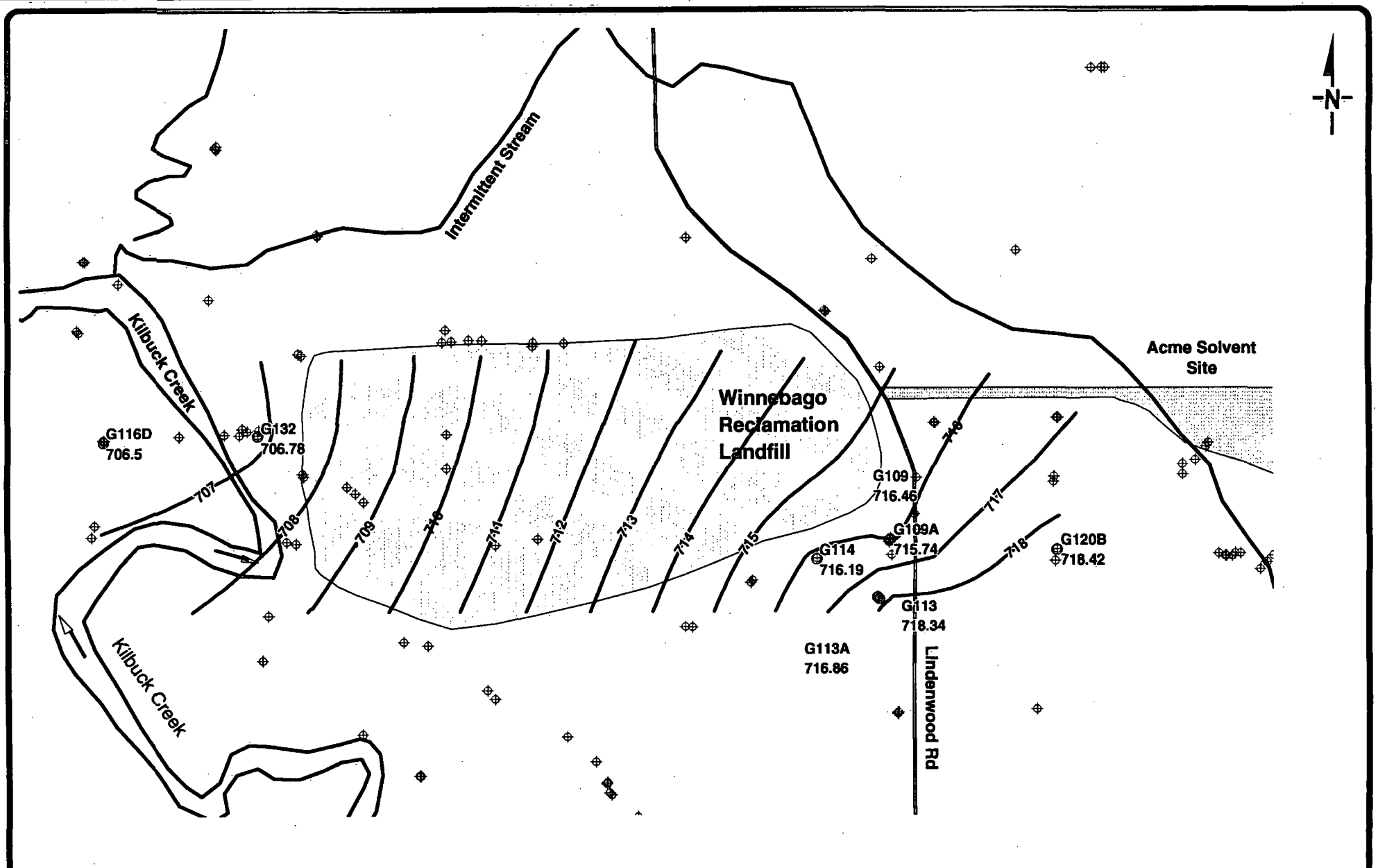
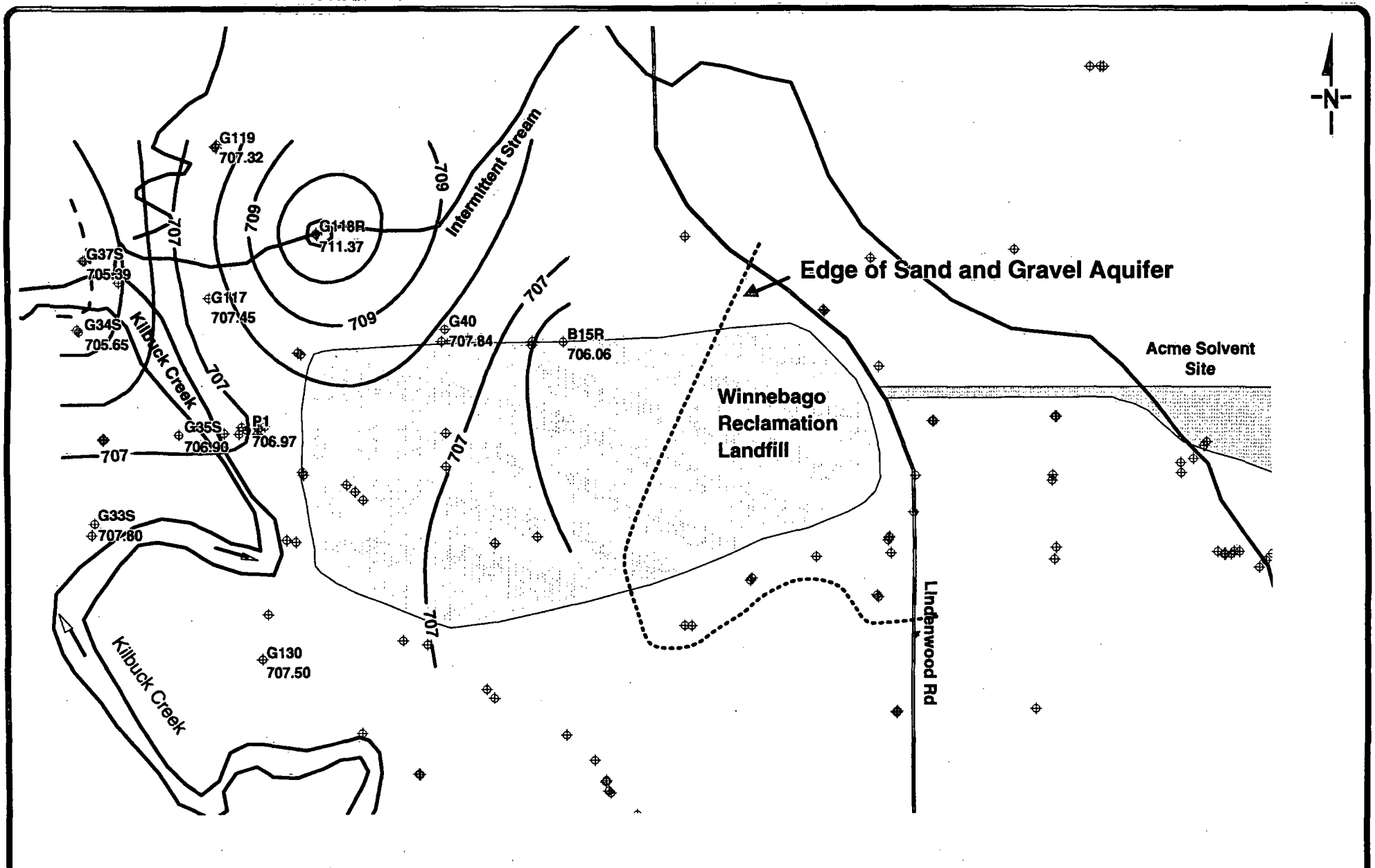


Figure 5. January 1999 water level elevations (ft, MSL) for the shallow zone of the bedrock aquifer.

HSI GEOTRANS
A TETRA TECH COMPANY



0 500 1,000
SCALE IN FEET

HSI GEOTRANS
A TETRA TECH COMPANY

Figure 6. April 1999 water level elevations (ft, MSL) for the upper zone of the sand and gravel aquifer (gradients given in ft/ft).

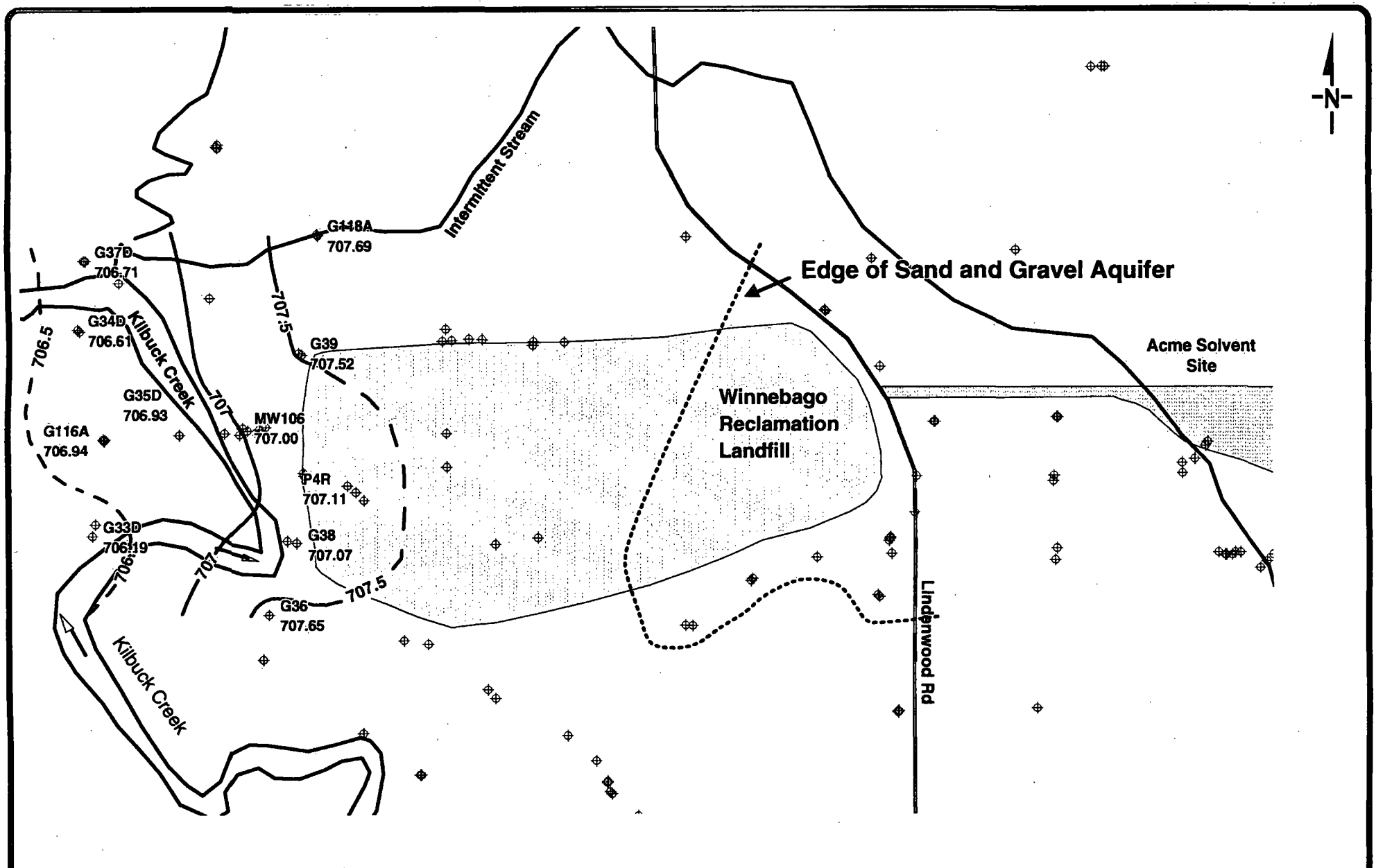


Figure 7. April 1999 water level elevations (ft, MSL) for the lower zone of the sand and gravel aquifer (gradient given in ft/ft).

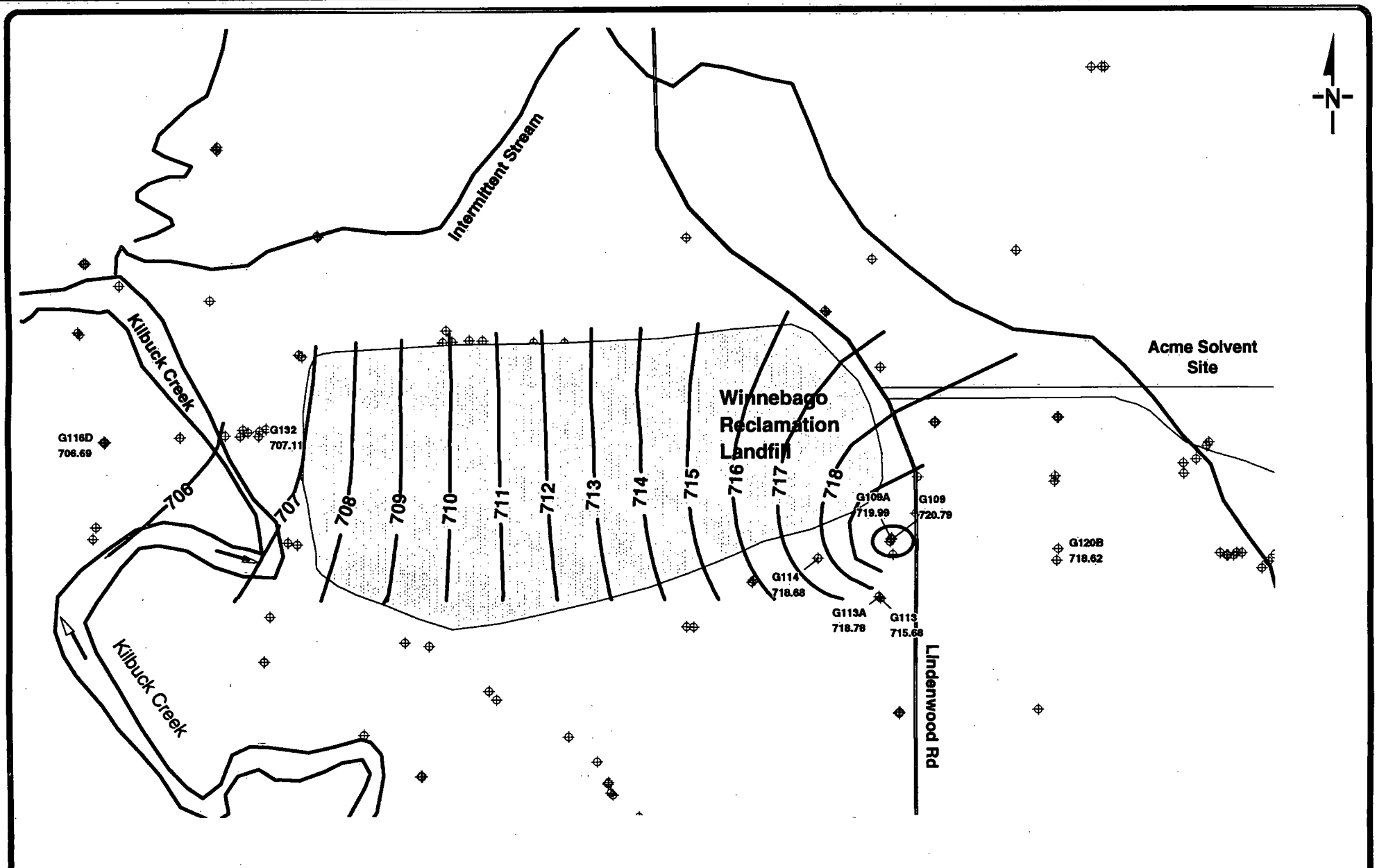


Figure 8. April 1999 water level elevations (ft, MSL) for the shallow zone of the bedrock aquifer (gradient given in ft/ft).

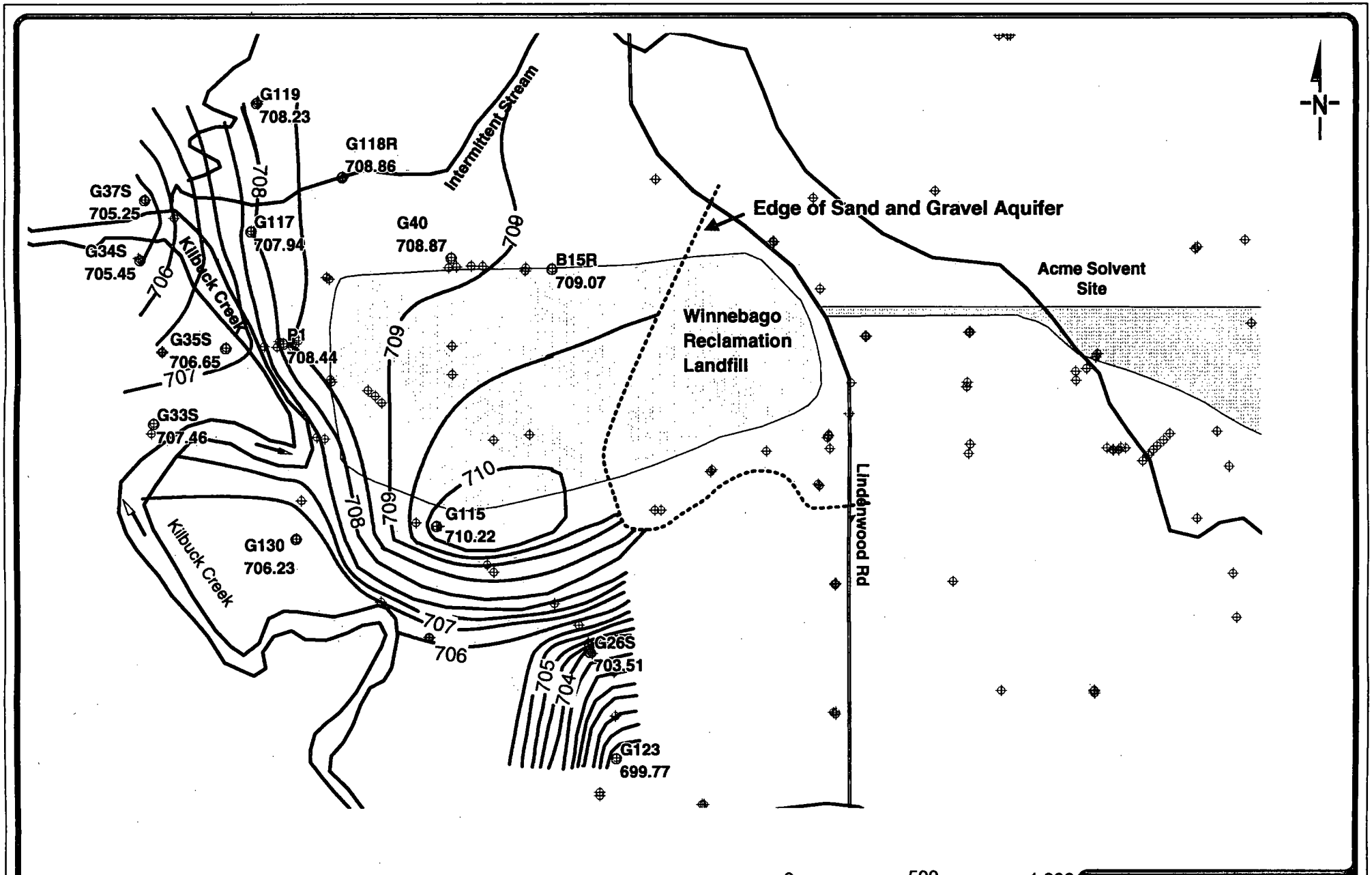


Figure 9. July 1999 water level elevations (ft, MSL) for the upper zone of the sand and gravel aquifer.

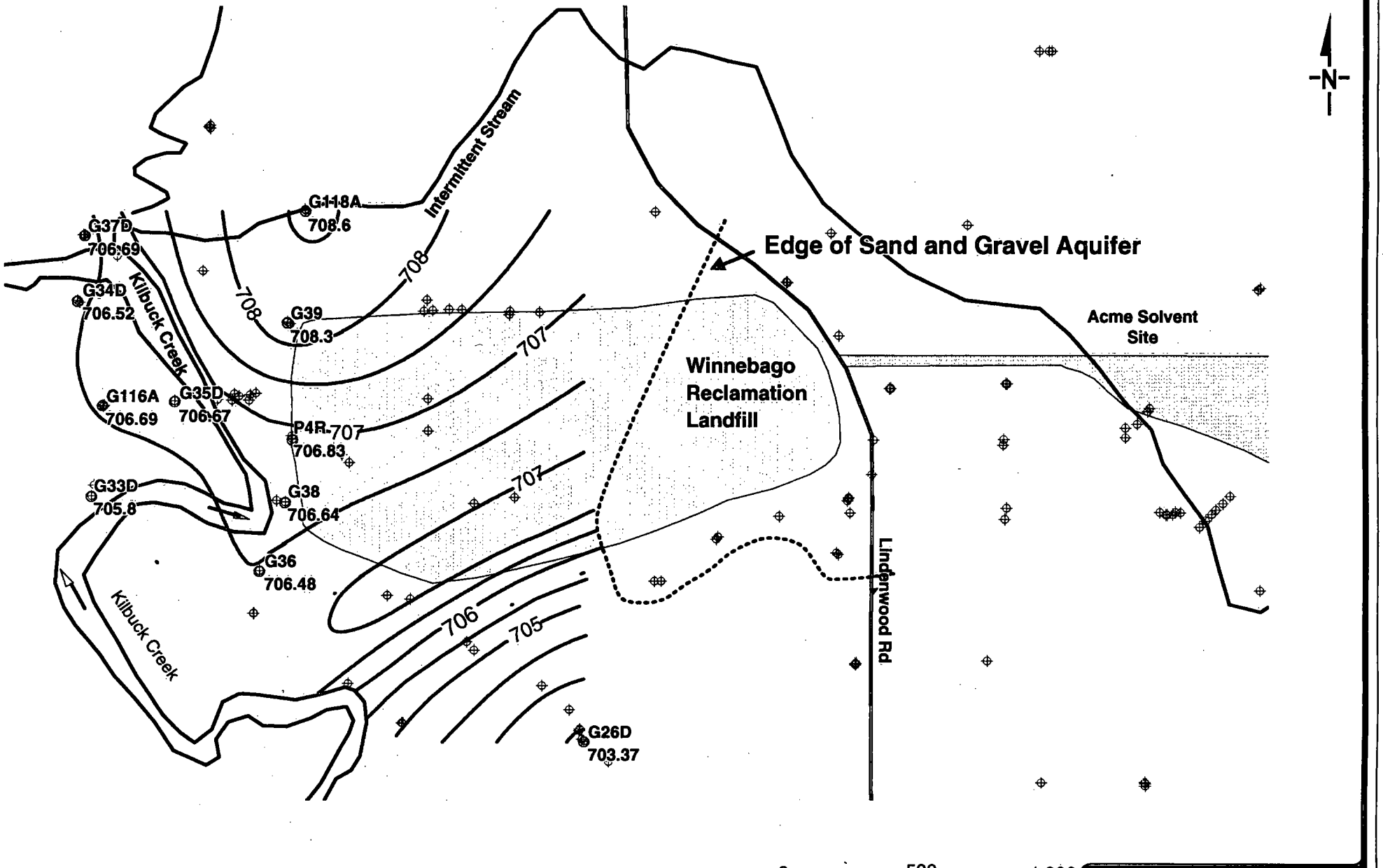


Figure 10. July 1999 water level elevations (ft, MSL) for the lower zone of the sand and gravel aquifer.

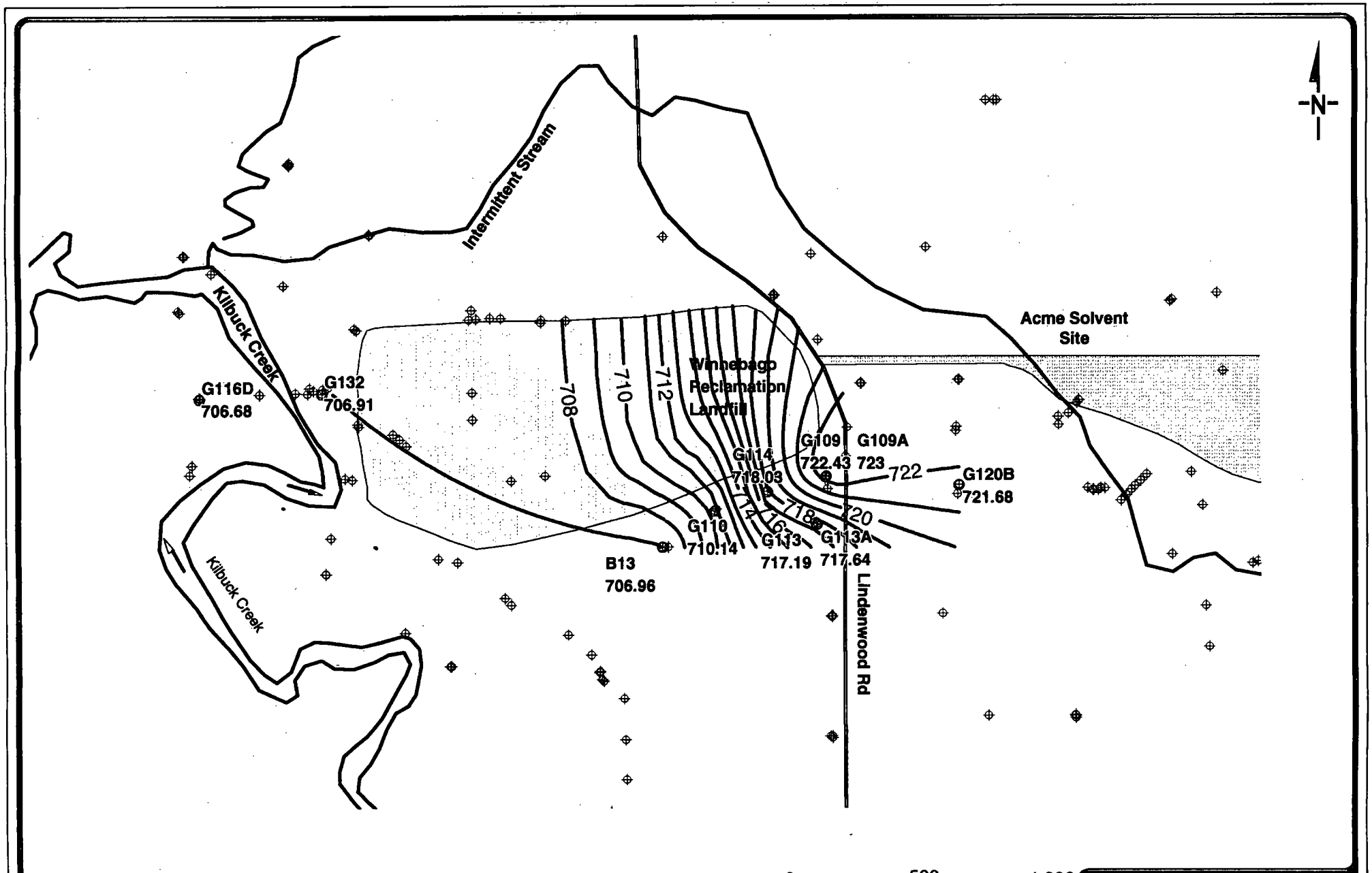


Figure 11. July 1999 water level elevations (ft, MSL) for the shallow zone of the bedrock aquifer.

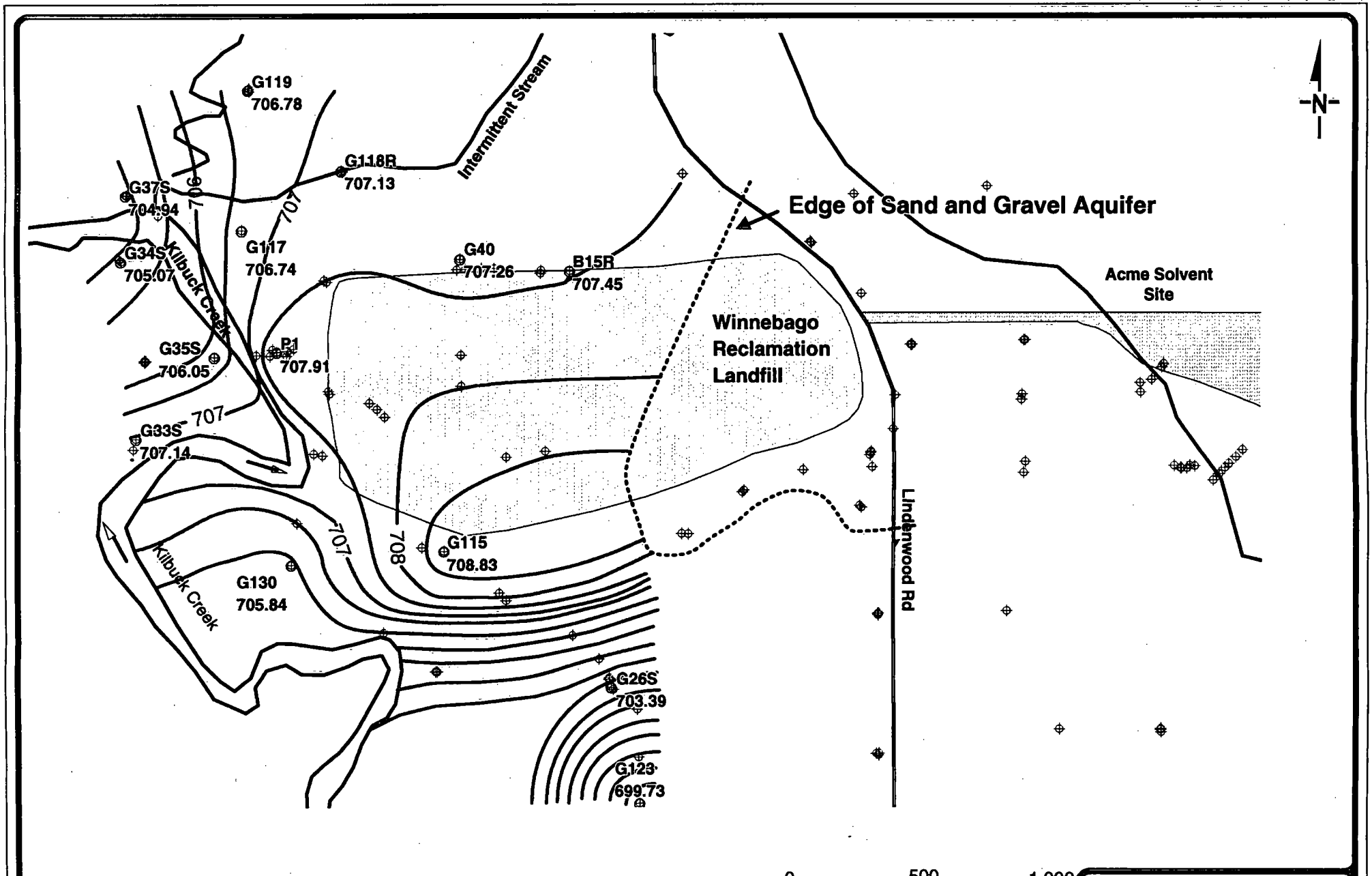


Figure 12. Nov. 1999 water level elevations (ft, MSL) for the upper zone of the sand and gravel aquifer.

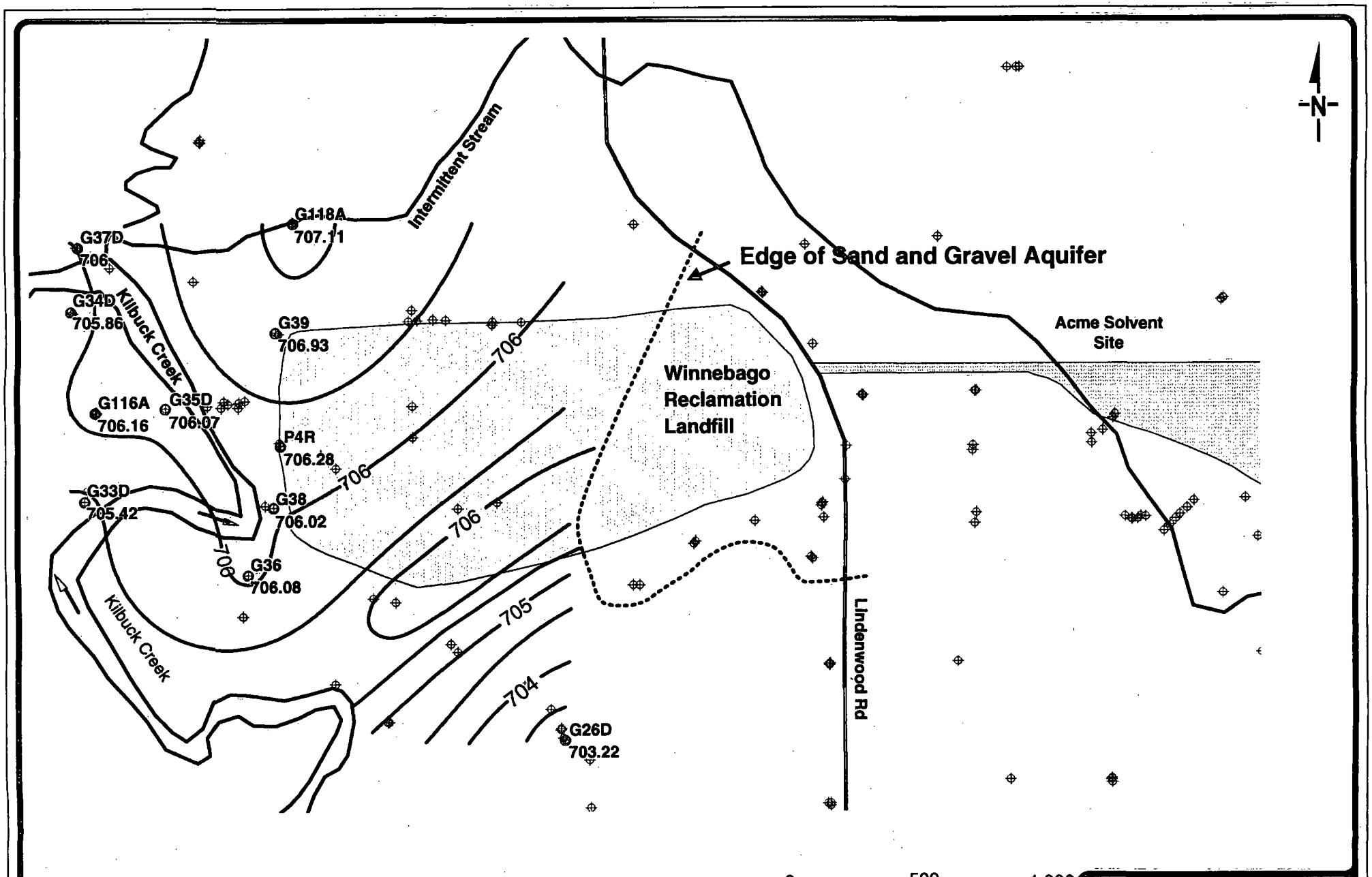


Figure 13. Nov. 1999 water level elevations (ft, MSL) for the lower zone of the sand and gravel aquifer.

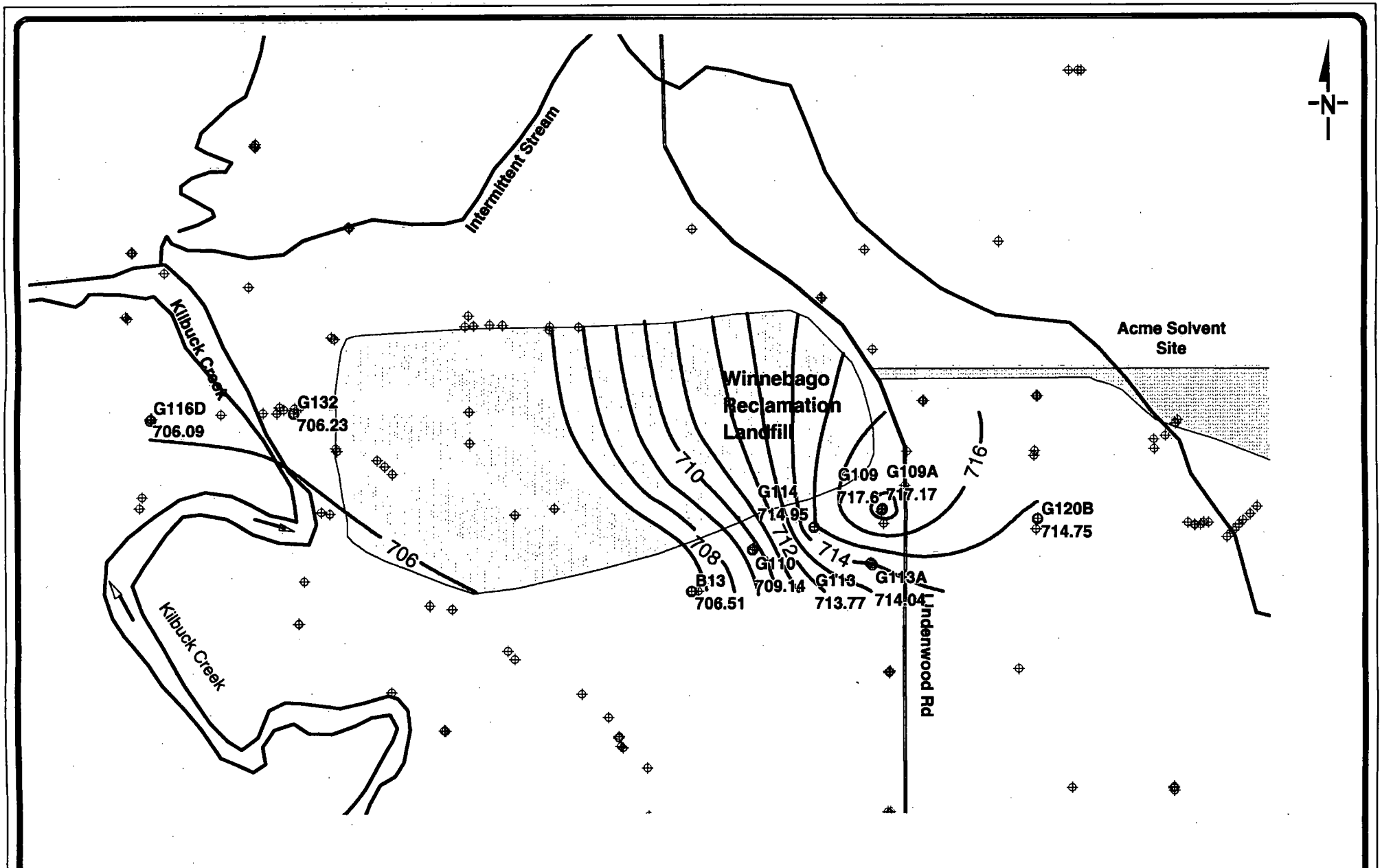


Figure 14. Nov. 1999 water level elevations (ft, MSL) for the shallow zone of the bedrock aquifer.

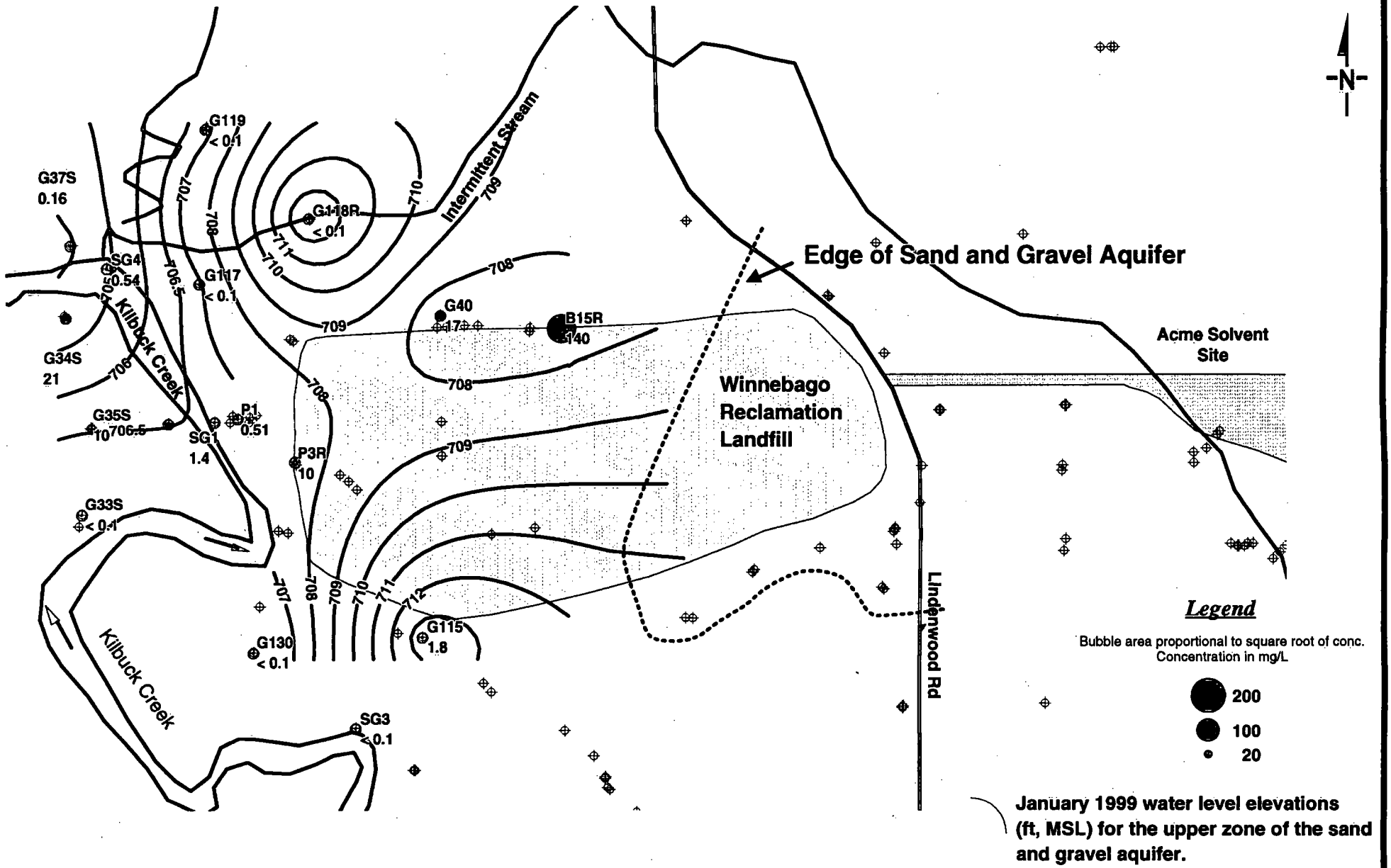


Figure 15. January 1999 ammonia (nitrogen) results for the upper zone of the sand and gravel aquifer.

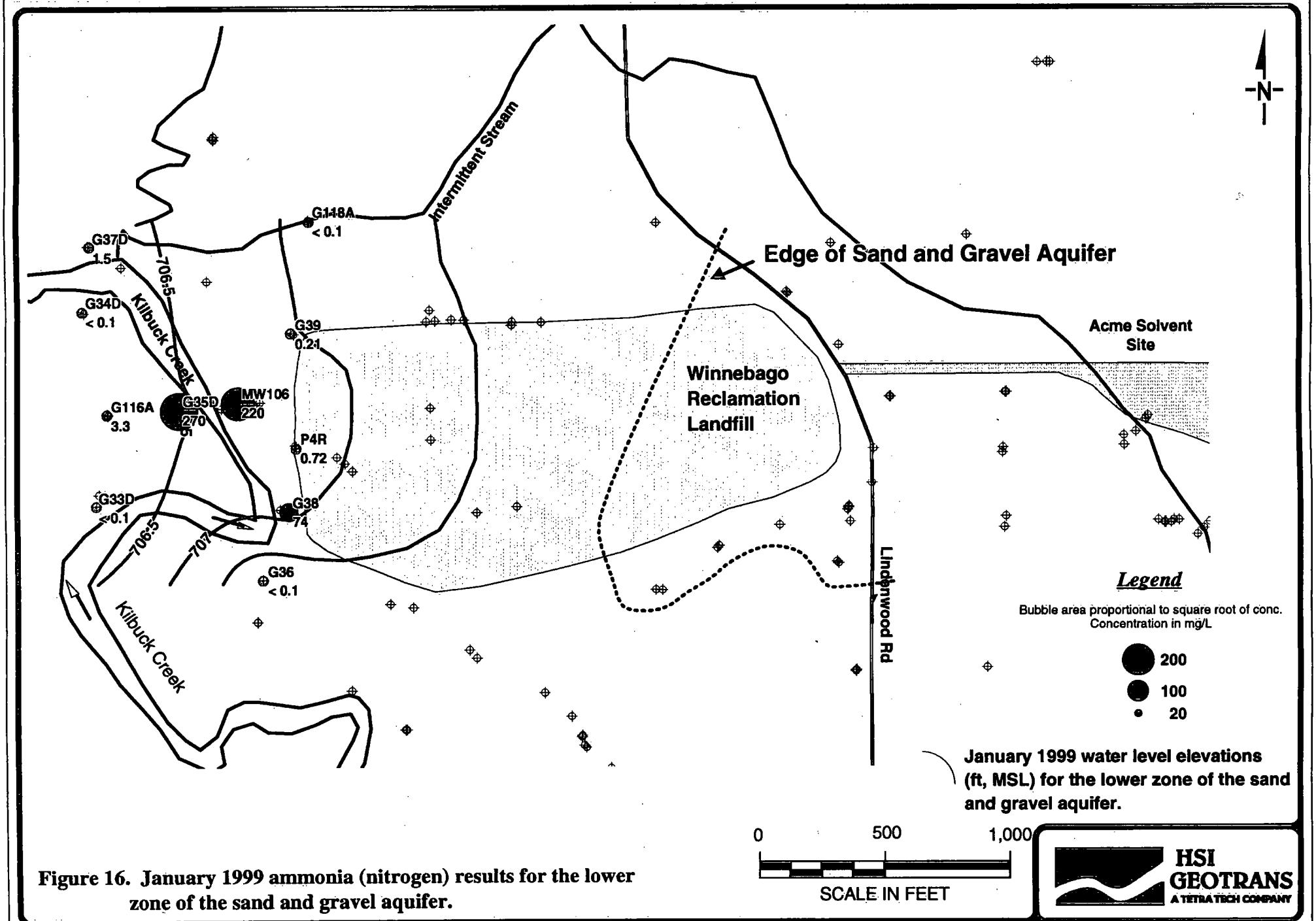


Figure 16. January 1999 ammonia (nitrogen) results for the lower zone of the sand and gravel aquifer.

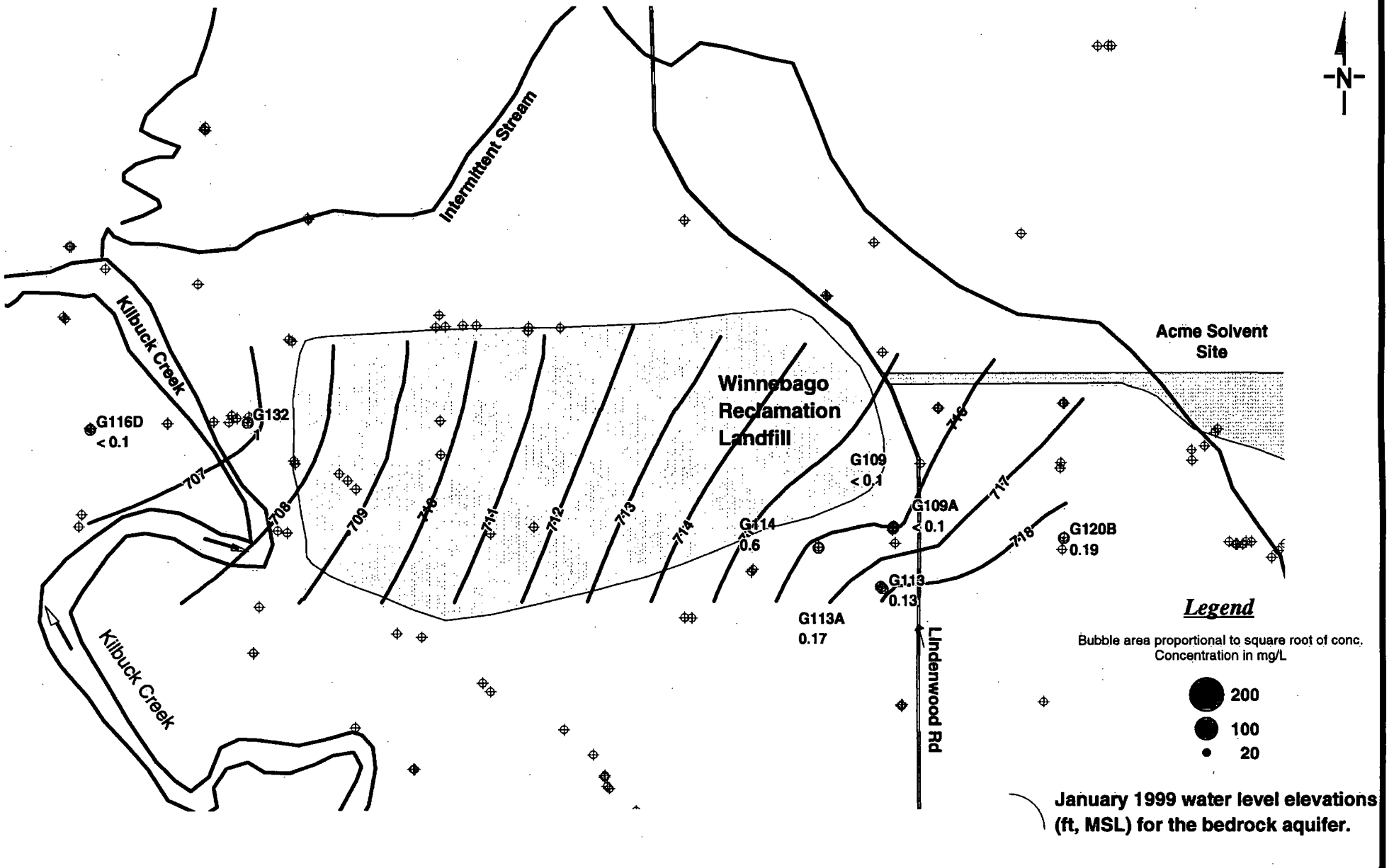


Figure 17. January 1999 ammonia (nitrogen) results for the bedrock aquifer.

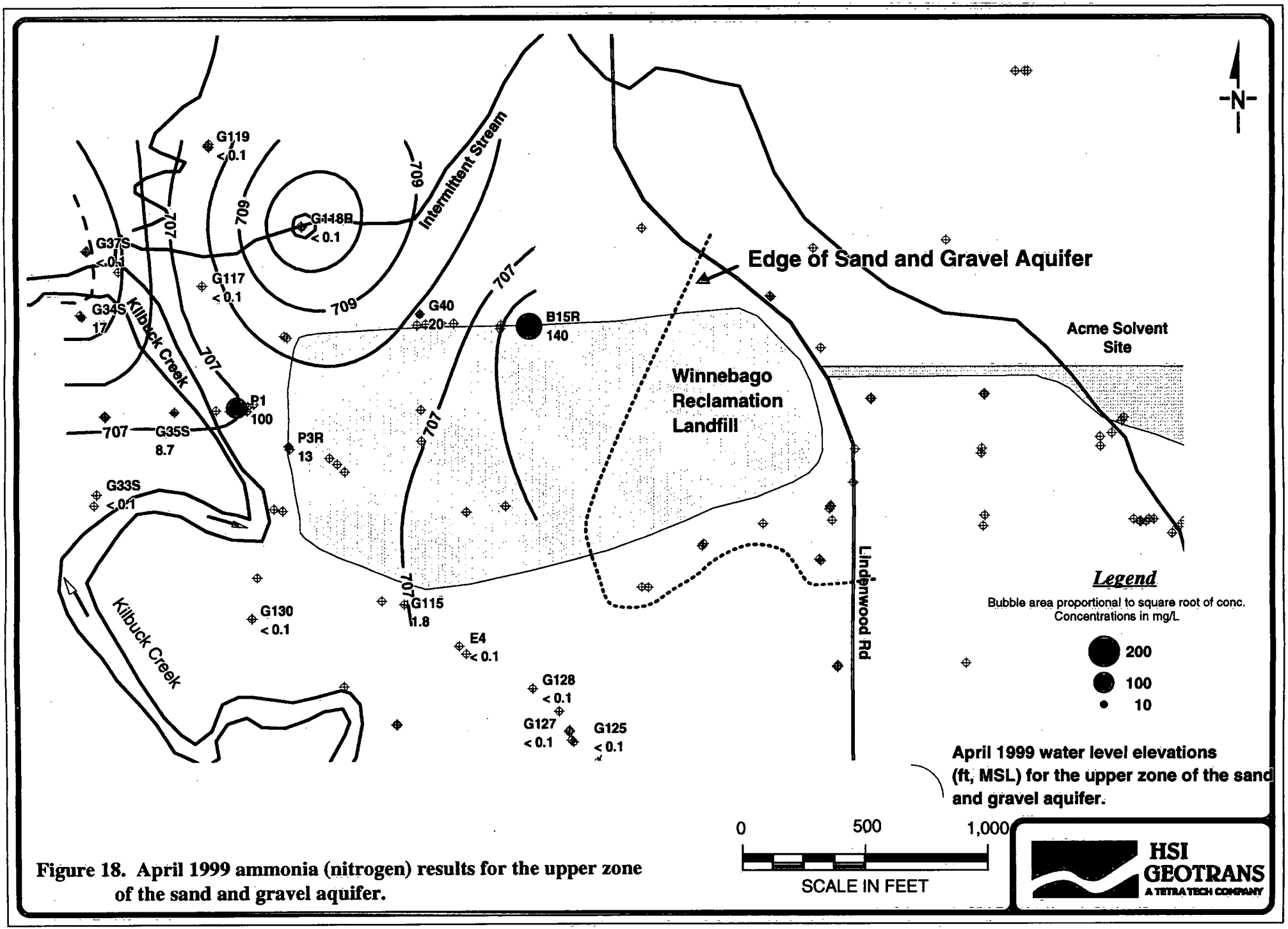


Figure 18. April 1999 ammonia (nitrogen) results for the upper zone of the sand and gravel aquifer.

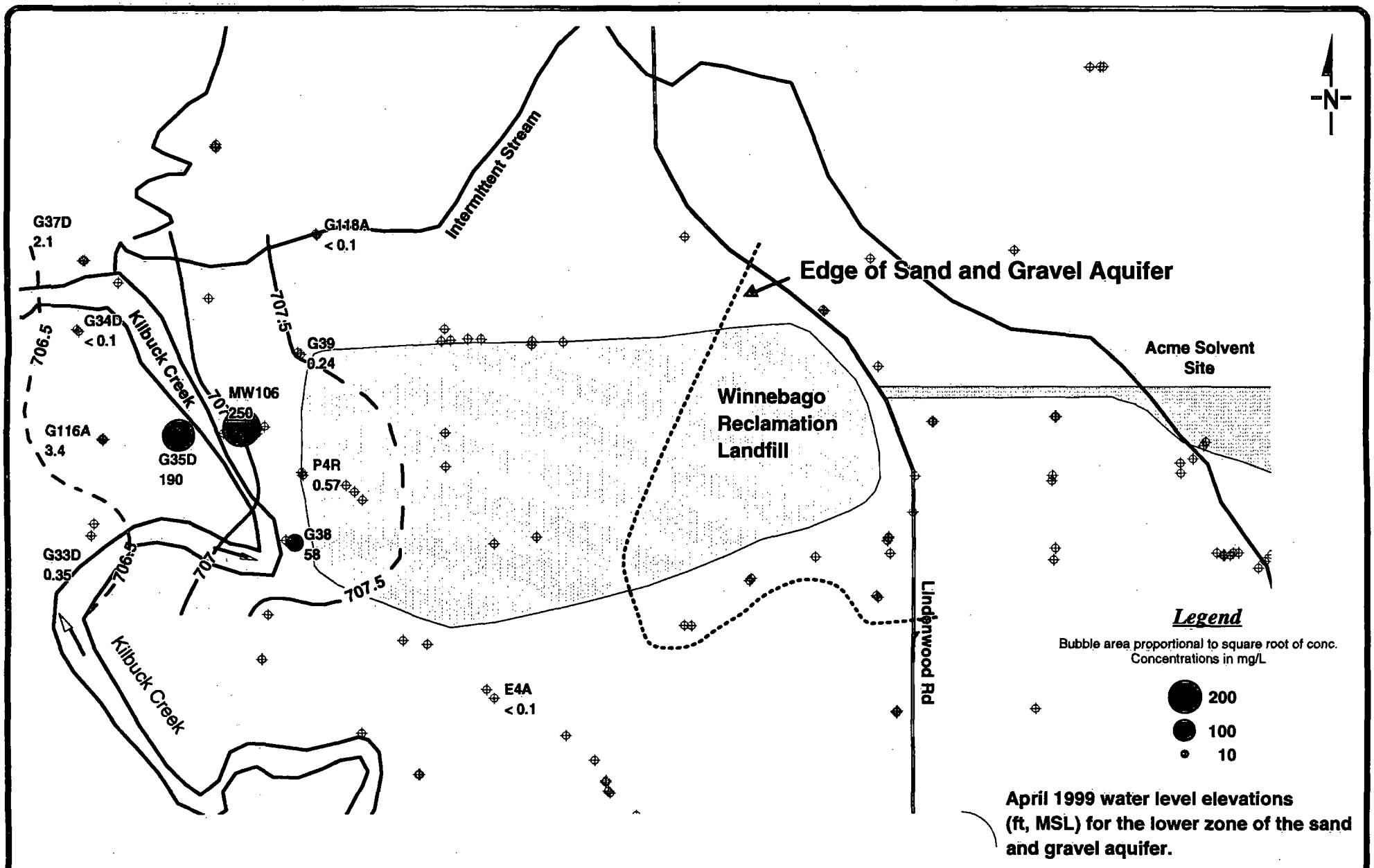


Figure 19. April 1999 ammonia (nitrogen) results for the lower zone of the sand and gravel aquifer.

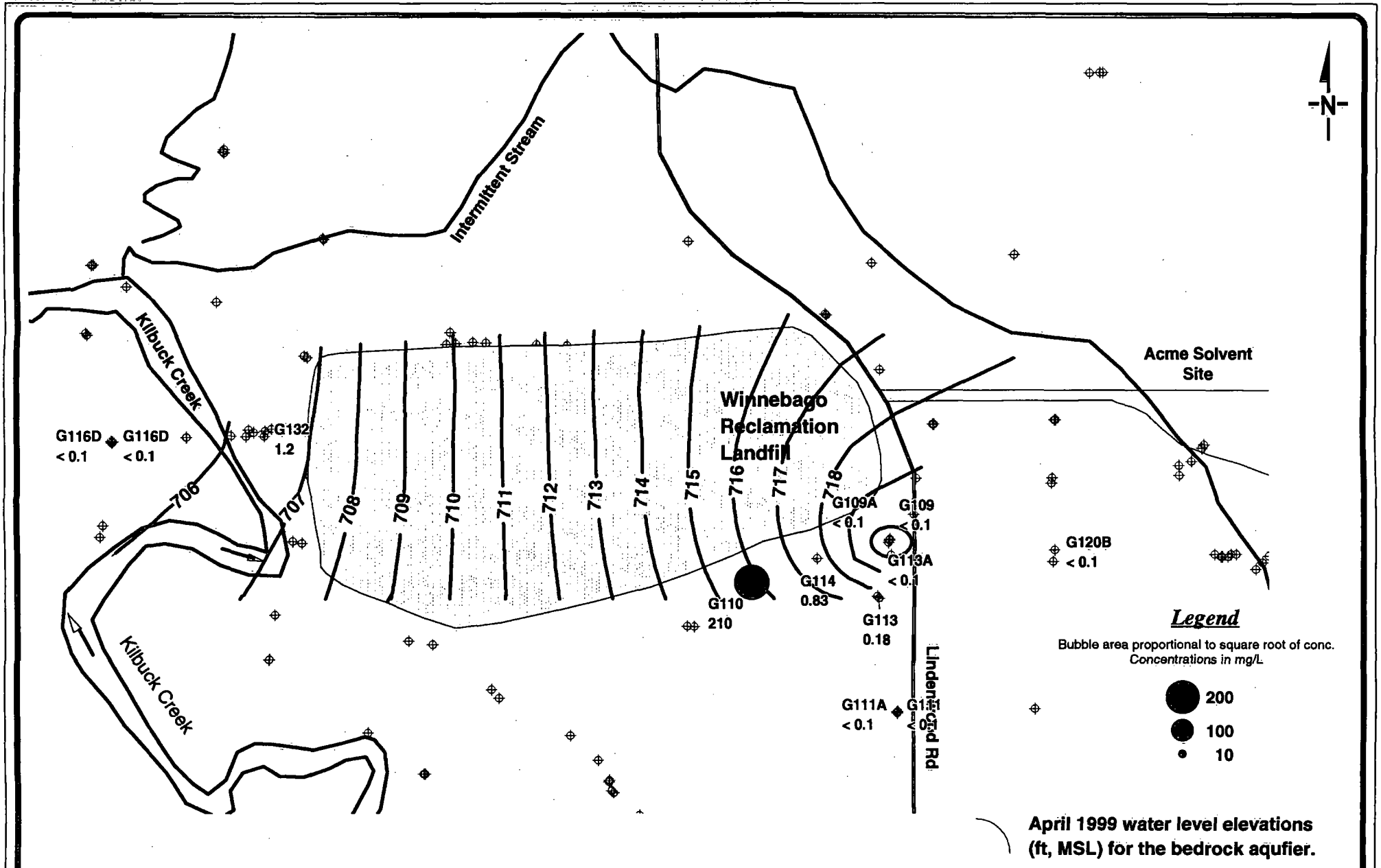


Figure 20. April 1999 ammonia (nitrogen) results for the bedrock aquifer.

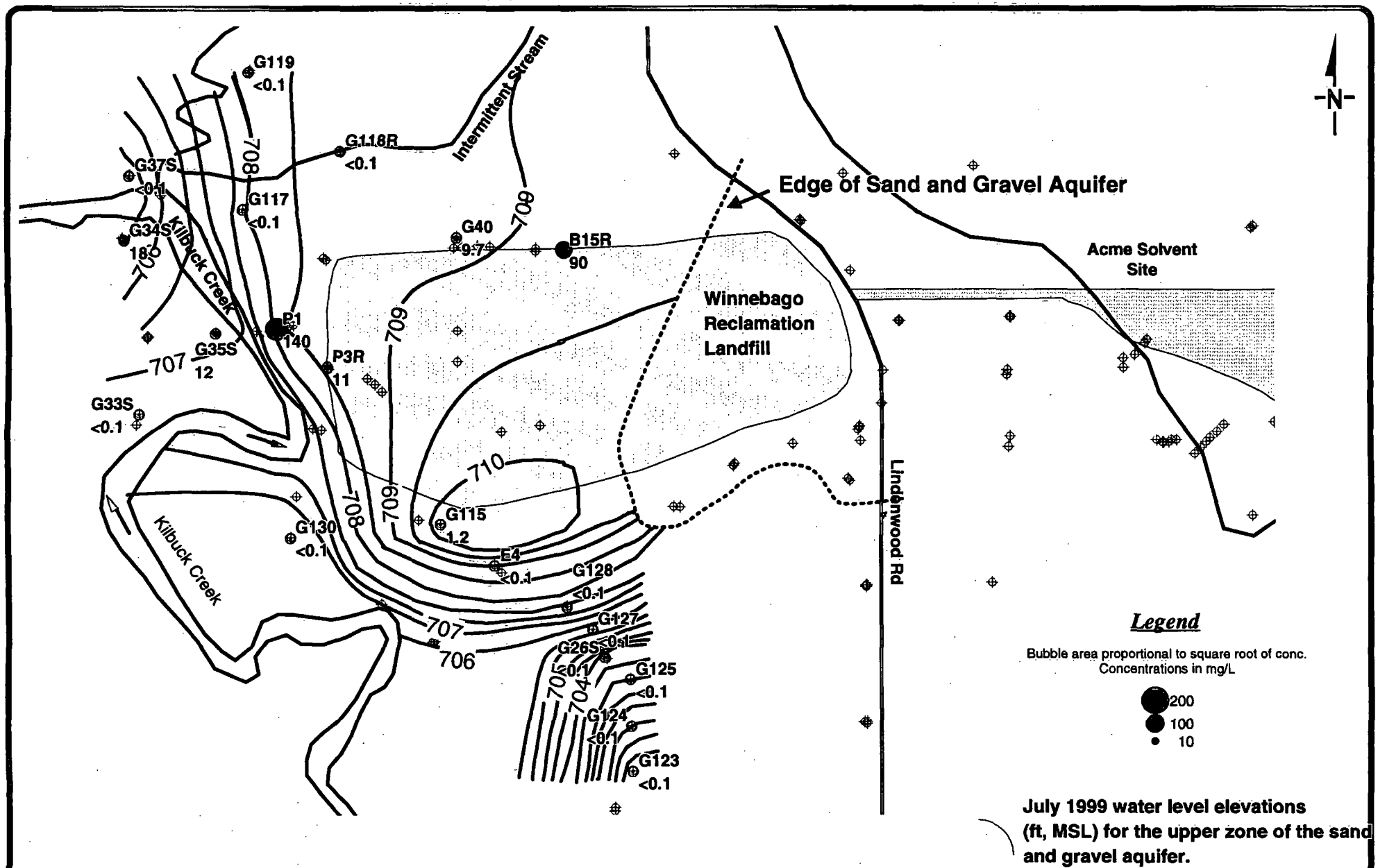


Figure 21. July 1999 ammonia (nitrogen) results for the upper zone of the sand and gravel aquifer.

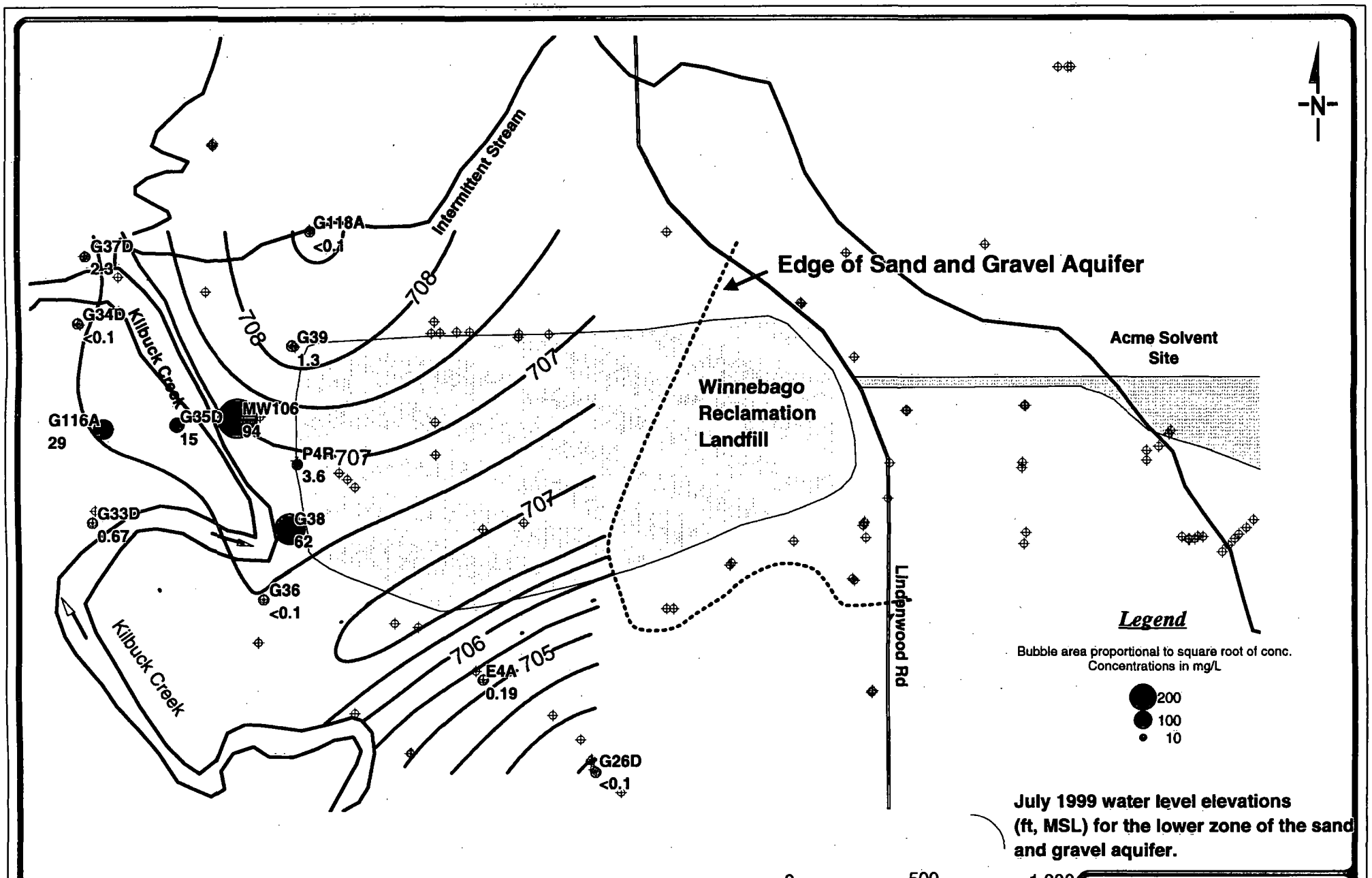


Figure 22. July 1999 ammonia (nitrogen) results for the lower zone of the sand and gravel aquifer.

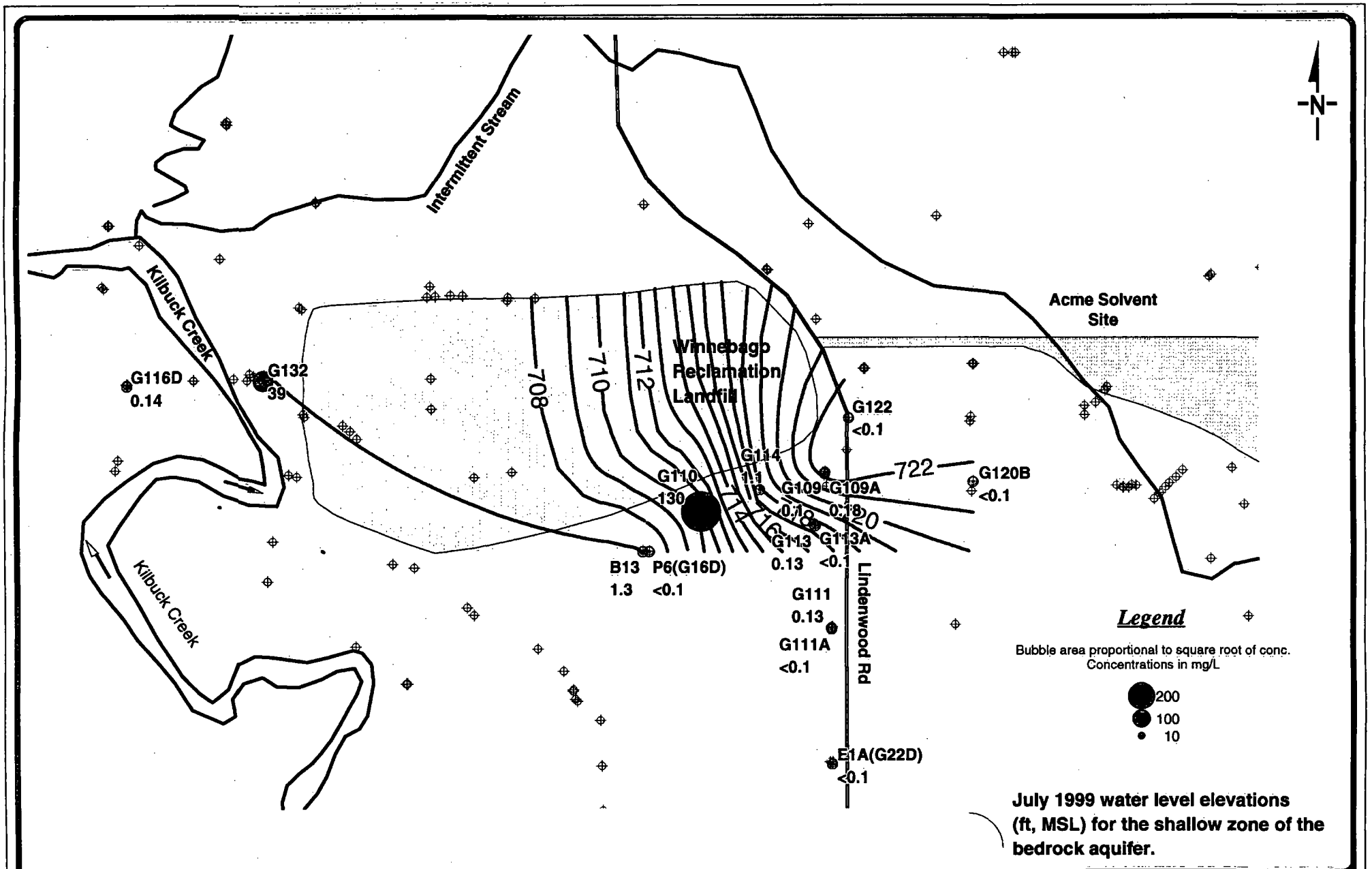


Figure 23. July 1999 water level elevations (ft, MSL) for the shallow zone of the bedrock aquifer.

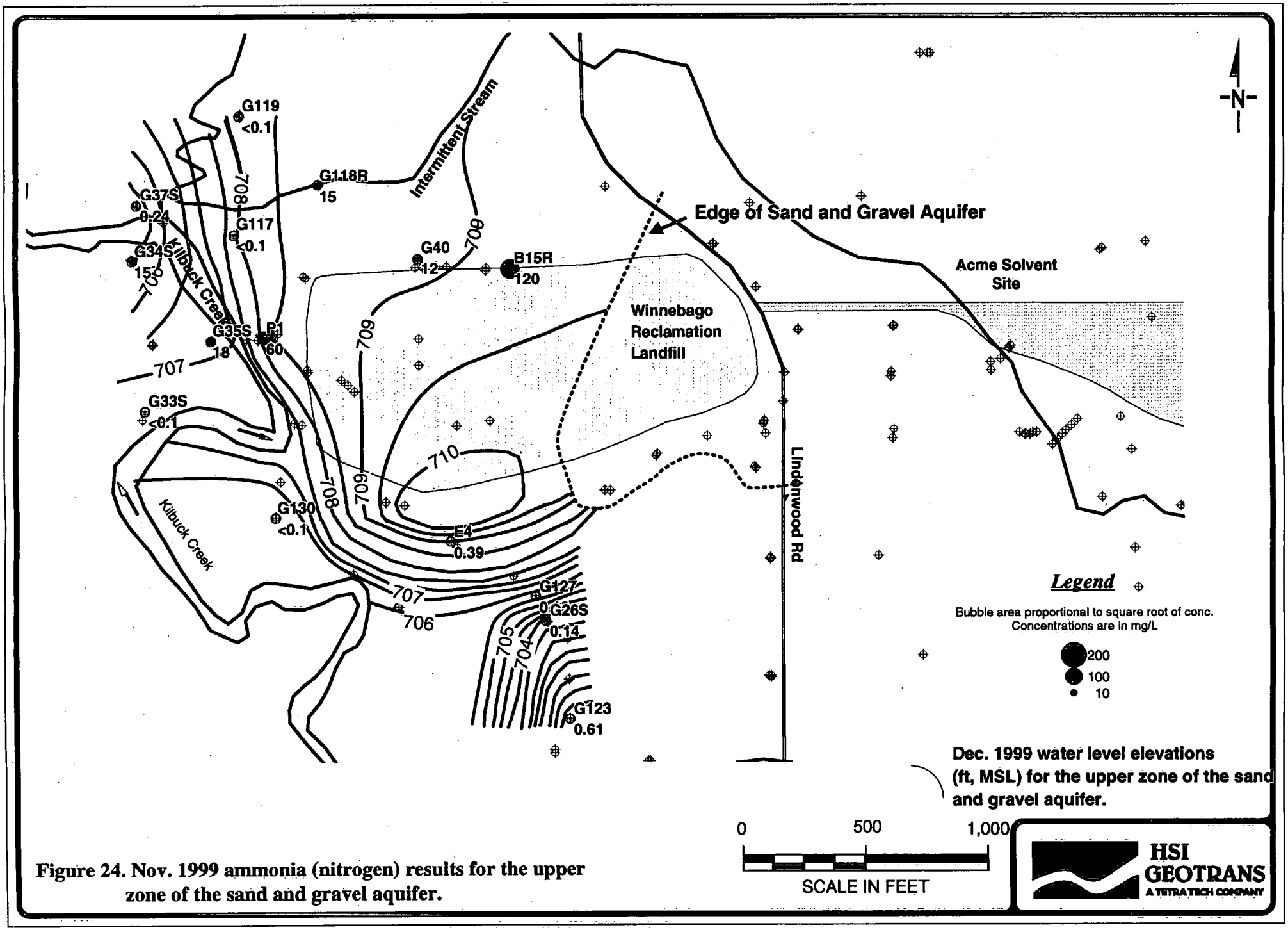


Figure 24. Nov. 1999 ammonia (nitrogen) results for the upper zone of the sand and gravel aquifer.

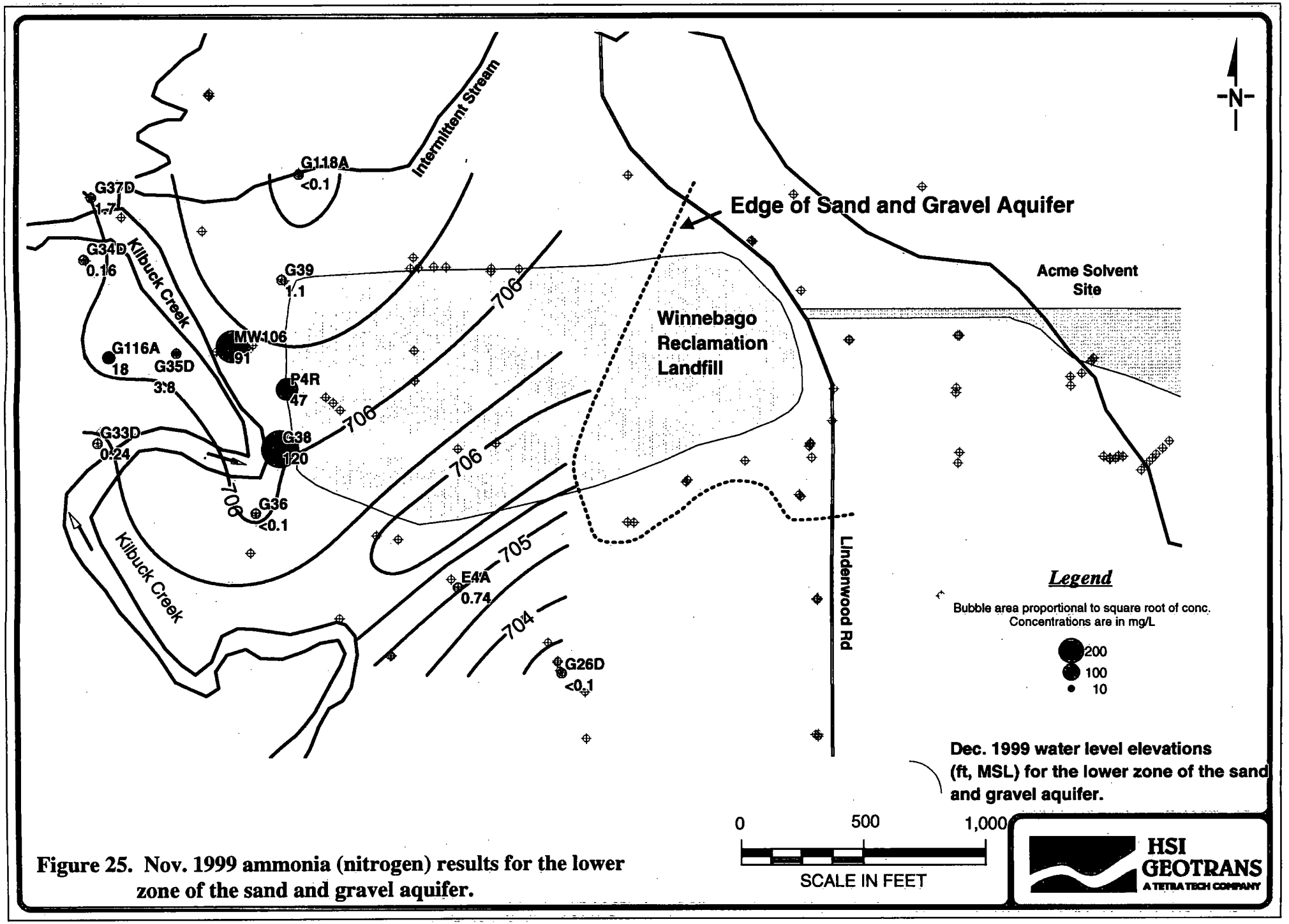


Figure 25. Nov. 1999 ammonia (nitrogen) results for the lower zone of the sand and gravel aquifer.

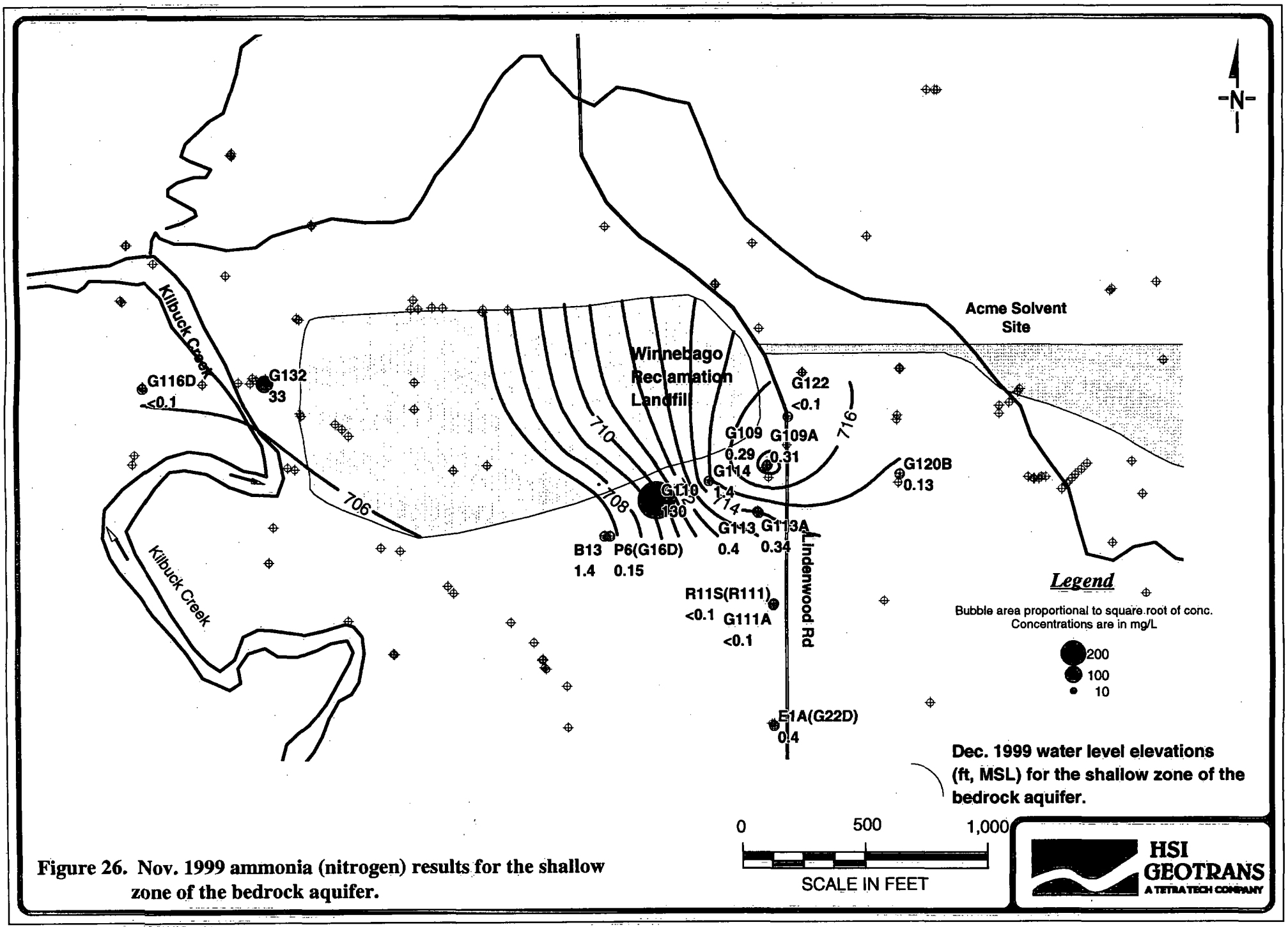
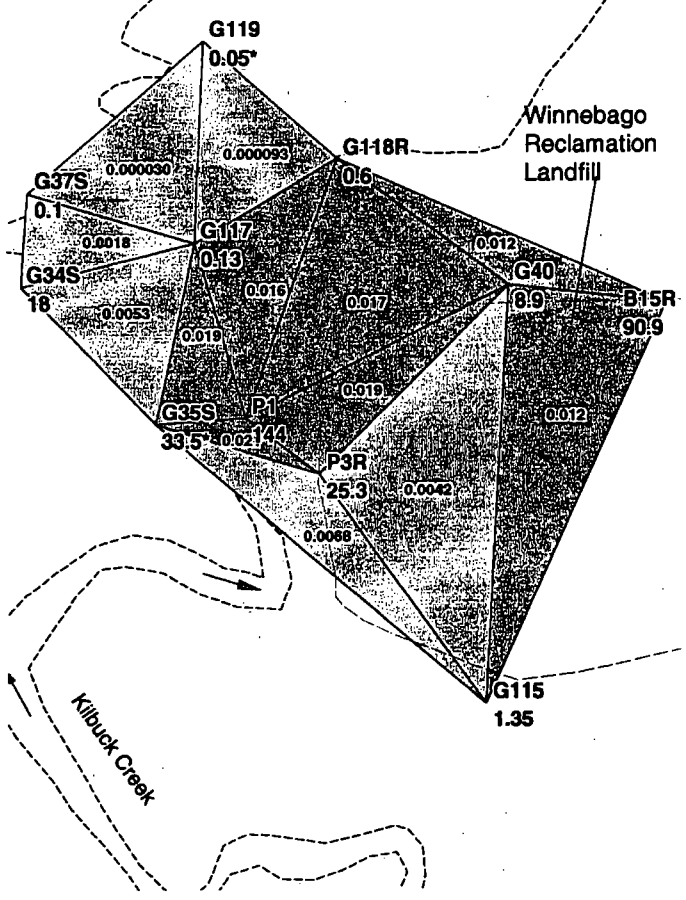
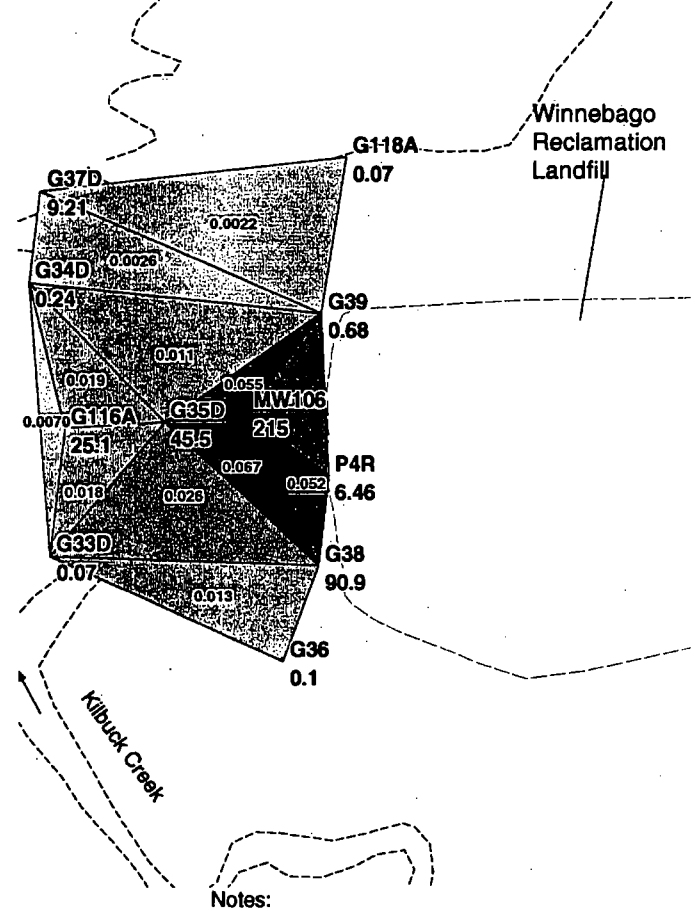


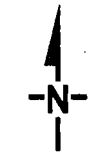
Figure 26. Nov. 1999 ammonia (nitrogen) results for the shallow zone of the bedrock aquifer.

Ammonia, Nitrogen (dis) for the Upper zone for January 1997



Ammonia, Nitrogen (dis) for the Lower zone for January 1997





Explanation

Calculated Mass/Area (lbs/sq.ft)

- 0.06 to 0.07
- 0.05 to 0.06
- 0.04 to 0.05
- 0.03 to 0.04
- 0.02 to 0.03
- 0.01 to 0.02
- 0 to 0.01

Notes:
1) All values of Ammonia, Nitrogen (dis) are presented in mg/L.
2) Upper zone wells G116, G130, and G33S were not included in the mass-in-place calculations.

*Used previous or prior value where data was not colleced.

Dissolved Mass-in-Place

Layer	Area in sq. ft.	Pore Vol. in cubic ft.	Mass in lbs.
Q197U	1,705,840	9,370,515	16,164
Q197L	1,001,890	10,230,210	18,825
Q197All	2,707,730	19,600,725	34,989

0 540 1080

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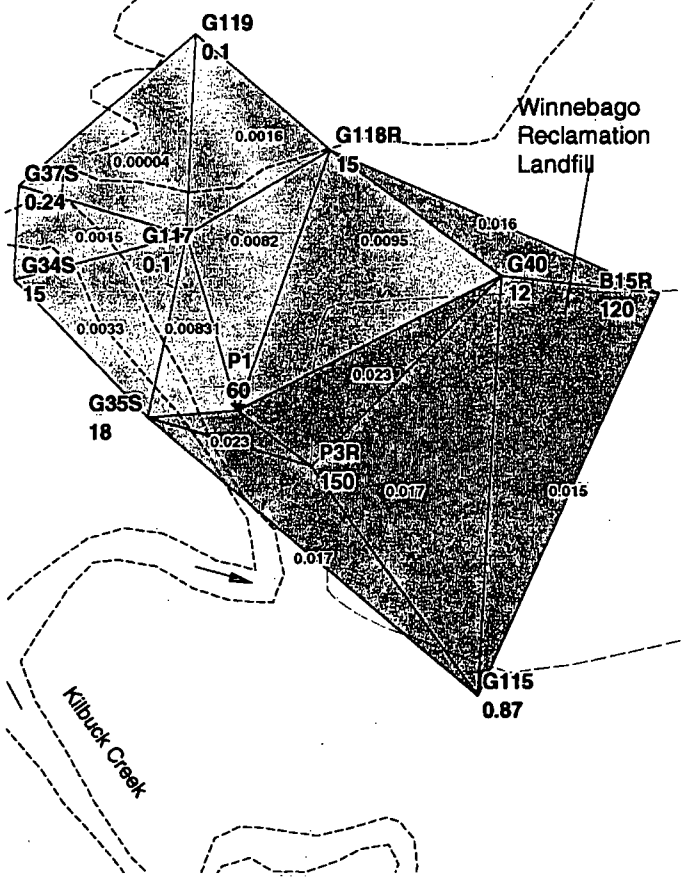
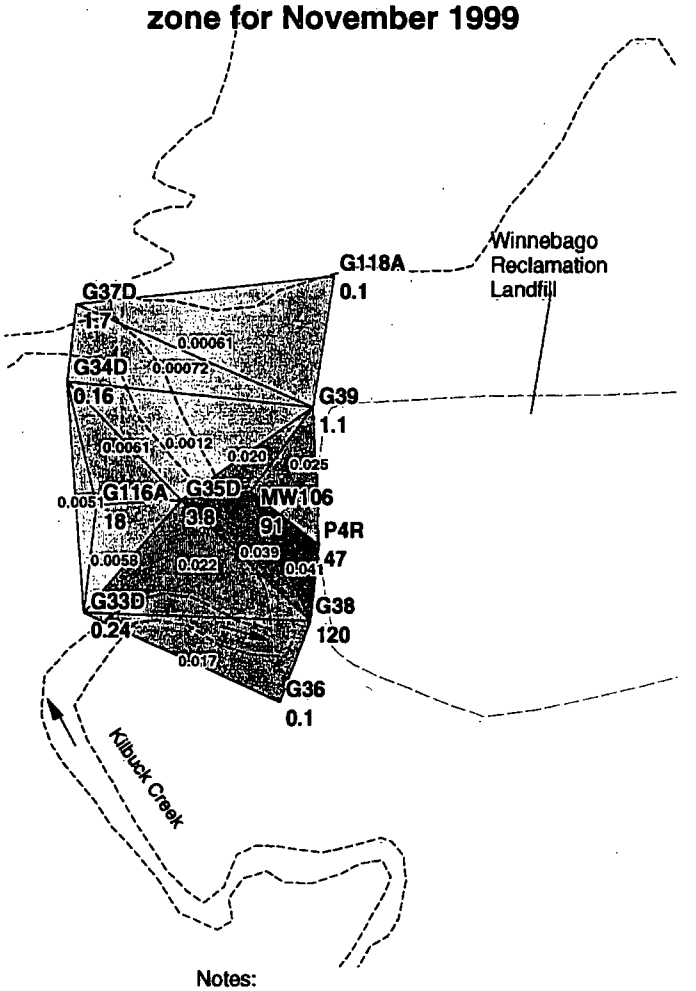
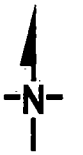
Figure 27. January 1997 (Quarter #1) Ammonia, nitrogen (dis) mass-in-place for the upper and lower sand and gravel aquifer.

Ammonia, Nitrogen (dis) for the Upper zone for November 1999



Ammonia, Nitrogen (dis) for the Lower zone for November 1999





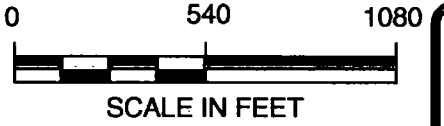
Explanation

Calculated Mass/Area (lbs/sq.f

- 0.06 to 0.07
- 0.05 to 0.06
- 0.04 to 0.05
- 0.03 to 0.04
- 0.02 to 0.03
- 0.01 to 0.02
- 0 to 0.01

Notes:
1) All values of Ammonia, Nitrogen (dis) are presented in mg/L.
2) Upper zone wells G116, G130, and G33S were not included in the mass-in-place calculations.
3.) < indicates that value was not detected.

*Used previous or prior value where data was not colleced.



Dissolved Mass-in-Place

Layer	Area in sq. ft.	Pore Vol. in cubic ft.	Mass in lbs.
Q499U	1,705,840	8,670,430	19,048
Q499L	1,001,890	10,230,210	11,623
Q499All	2,707,730	18,900,640	30,671

Figure 28. November 1999 (Quarter #4) Ammonia, nitrogen (dis) mass-in-place for the upper and lower sand and gravel aquifer.

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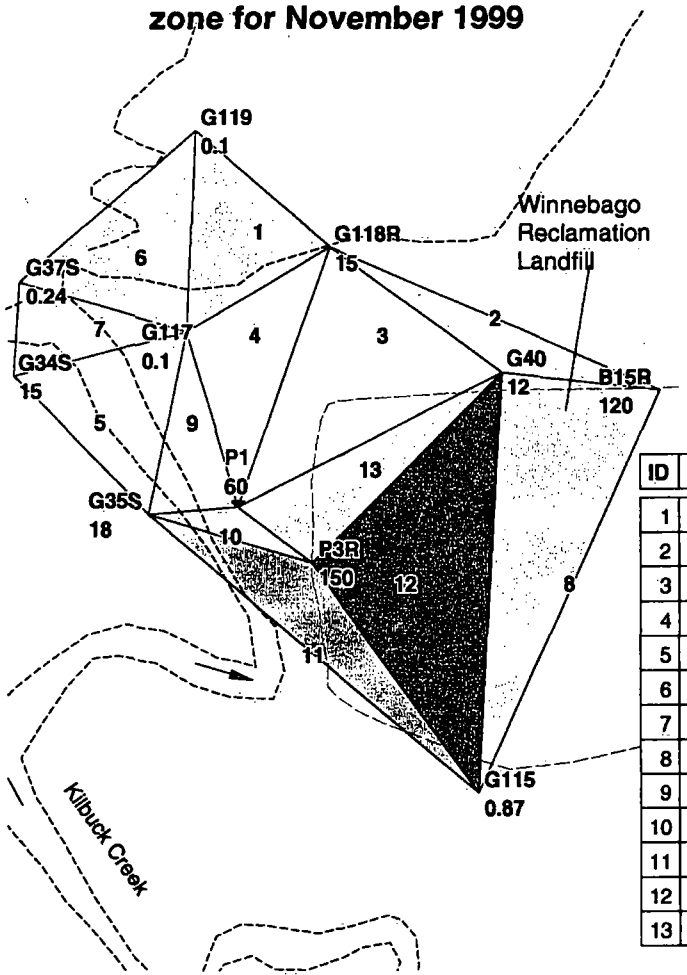
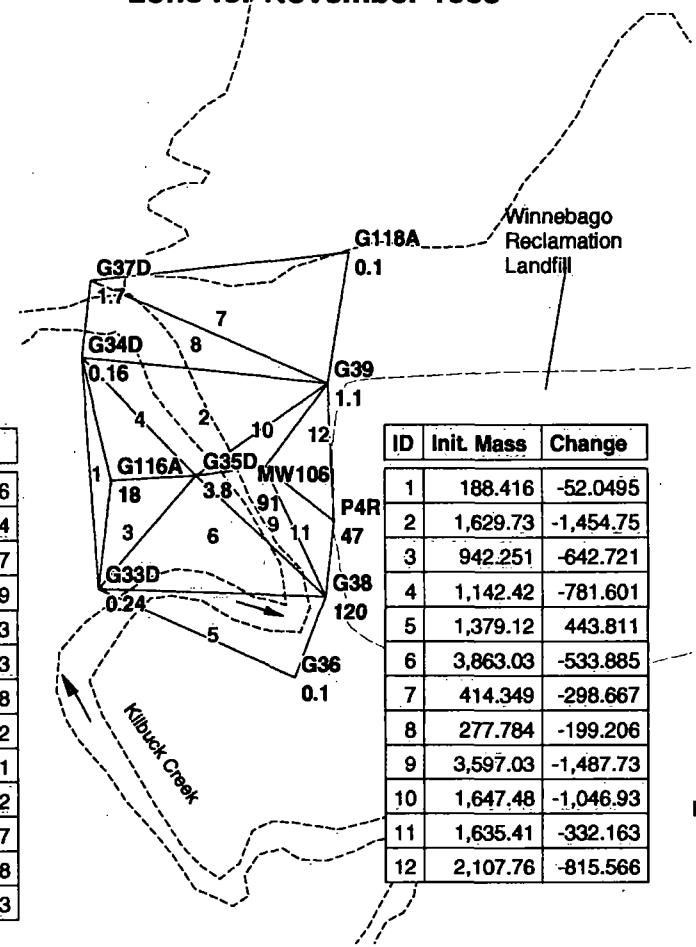
Ammonia, Nitrogen (dis) for the Upper zone for November 1999



ID	Init. Mass	Change
1	10.3065	168.726
2	798.829	282.24
3	3,877.51	-1,746.7
4	1,878.94	-931.519
5	623.292	-235.33
6	4.00569	1.95413
7	114.778	-20.3128
8	3,254.26	672.702
9	1,199.61	-667.771
10	468.515	37.3632
11	807.026	1,199.17
12	1,246.72	3,764.48
13	1,879.94	358.93

Ammonia, Nitrogen (dis) for the Lower zone for November 1999



ID	Init. Mass	Change
1	188.416	-52.0495
2	1,629.73	-1,454.75
3	942.251	-642.721
4	1,142.42	-781.601
5	1,379.12	443.811
6	3,863.03	-533.885
7	414.349	-298.667
8	277.784	-199.206
9	3,597.03	-1,487.73
10	1,647.48	-1,046.93
11	1,635.41	-332.163
12	2,107.76	-815.566

N

Explanation

Net Change Mass/Area (lbs./sq.ft)

- 0.012 to 0.018
- 0.006 to 0.012
- 0 to 0.006
- -0.006 to 0
- -0.012 to -0.006
- -0.018 to -0.012
- -0.024 to -0.018
- -0.03 to -0.024
- -0.036 to -0.03

Dissolved Mass-in-Place

Layer	Area in sq. ft.	Pore Vol. in cubic ft.	Mass in lbs.
Q499U	1,705,840	8,670,430	19,048
Q499L	1,001,890	10,230,210	11,623
Q499All	2,707,730	18,900,640	30,671

Notes:
1) All values of Ammonia, Nitrogen (dis) are presented in mg/L.

*Used previous or prior value where data was not colleced.

0 540 1080

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Figure 29. Plot of net change in each triangulated element from January 1997 to November 1999 in Ammonia, Nitrogen (dis) mass-in-place for the upper and lower sand and gravel aquifer.

TABLES

Table 1. List of Monitoring Wells and Stream Gages to Be Sampled During Remedial Performance Assessment Monitoring, Pagel Landfill Facility, Winnebago County, Illinois.

Well	Top of Screen	Bottom of Screen	Hydrogeologic Unit
G109	717.1	706.1	Bedrock
G109A	684.3	679.3	Bedrock
G113	725.0	711.4	Bedrock
G113A	697.0	685.0	Bedrock
G114	722.0	709.9	Bedrock
G115	718.9	705.9	Unconsolidated Sediments
G116	709.4	697.9	Unconsolidated Sediments
G116A	683.4	668.4	Unconsolidated Sediments
G116D	625.3	614.6	Bedrock
G117	713.4	697.4	Unconsolidated Sediments
G118R	713.3	701.5	Unconsolidated Sediments
G118A	681.5	672.5	Unconsolidated Sediments
R119	707.1	697.1	Unconsolidated Sediments
G120B	617.6	607.5	Bedrock
G132	631.7	626.7	Bedrock
B15R	703.8	698.8	Unconsolidated Sediments
MW106	674.4	664.4	Unconsolidated Sediments
P1	694.7	689.7	Unconsolidated Sediments
P3R	712.1	698.4	Unconsolidated Sediments
P4R	693.0	678.7	Unconsolidated Sediments
G37D	637.3	627.3	Unconsolidated Sediments
G37S	698.5	693.5	Unconsolidated Sediments
G36	683.3	673.3	Unconsolidated Sediments
G33S	704.0	694.0	Unconsolidated Sediments
G33D	674.1	664.1	Unconsolidated Sediments
G34S	702.9	692.6	Unconsolidated Sediments
G34D	658.6	648.6	Unconsolidated Sediments
G35D	674.3	664.3	Unconsolidated Sediments
G35S	704.3	694.3	Unconsolidated Sediments
G130	705.5	695.5	Unconsolidated Sediments
G38	694.9	684.9	Unconsolidated Sediments
G39	688.7	679.1	Unconsolidated Sediments
G40	702.8	693.2	Unconsolidated Sediments
SG1	NA	NA	Stream Gage
SG3	NA	NA	Stream Gage
SG4	NA	NA	Stream Gage

NA = Not Applicable

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures.

LIST 1 - (Indicator List)

FIELD PARAMETERS	CAS Number	Method	UNITS
Bottom of Well<MSL>	n/a	Field	ft
Depth to Water<BLGS>	n/a	Field	ft
Depth to Water<BLTOIC>	n/a	Field	ft
Groundwater Elev. <MSL>	n/a	Field	ft
pH(unfiltered)	n/a	Field	units
Specific Conductance<unfiltered, umhos/cm 25C>	n/a	Field	umhos
Water Temp<deg. F>	n/a	Field	deg

MISCELLANEOUS CONSTITUENTS	CAS Number	Method	UNITS
Alkalinity (total)	n/a	E310.2	mg/l
Biological Oxygen Demand (BOD)	n/a	E405.1	mg/l
Chemical Oxygen Demand (COD)	n/a	E410.4	mg/l
Total Dissolved Solids (TDS)	n/a	E160.1	mg/l
Total Organic Carbon (TOC)	n/a	E415.1	mg/l

INORGANIC PARAMETERS	CAS Number	Method	UNITS
Ammonia	7664-41-7	E350.2	ug/l
Arsenic	7440-38-2	E206.2	ug/l
Cadmium(dis)	7440-43-9	E213.2	ug/l
Calcium(dis)	7440-70-2	E200.7	ug/l
Chloride(dis)	6887-00-6	E325.2	ug/l
Chromium (dis)	7440-47-3	E200.7	ug/l
Copper (dis)	7440-50-8	E200.7	ug/l
Cyanide (Total as Cn-)	57-12-5	E335.3	ug/l
Iron (dis)	7439-89-6	E200.7	ug/l
Magnesium(dis)	7439-95-4	E200.7	ug/l
Manganese(dis)	7439-96-5	E200.7	ug/l
Nickel (dis)	7440-02-0	E200.7	ug/l
Nitrate (as Nitrogen)	7727-37-9	E353.2	ug/l
Potassium(dis)	7440-09-7		ug/l
Sodium(dis)	7440-23-5	E200.7	ug/l
Sulfates	4808-79-8	E375.2	ug/l
Zinc (dis)	7440-66-6	E200.7	ug/l

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

FIELD PARAMETERS	CAS Number	Method	UNITS
Bottom of Well<MSL>	n/a	Field	ft
Depth to Water<BLGS>	n/a	Field	ft
Depth to Water<BLTOIC>	n/a	Field	ft
Groundwater Elev. <MSL>	n/a	Field	ft
pH(unfiltered)	n/a	Field	units
Specific Conductance<unfiltered, umhos/cm 25C>	n/a	Field	umhos
Water Temp<deg. F>	n/a	Field	deg

MISCELLANEOUS CONSTITUENTS	CAS Number	Method	UNITS
Alkalinity (total)	n/a	E310.2	mg/l
Biological Oxygen Demand (BOD)	n/a	E405.1	mg/l
Chemical Oxygen Demand (COD)	n/a	E410.4	mg/l
Total Dissolved Solids (TDS)	n/a	E160.1	mg/l
Total Organic Carbon (TOC)	n/a	E415.1	mg/l

LIST 2 - (Annual Organics and Inorganics)

INORGANIC PARAMETERS	CAS Number	Method	UNITS
Aluminum	7429-90-5	E200.7	ug/l
Aluminum (dis)			ug/l
Ammonia	7664-41-7	E350.2	ug/l
Antimony	7440-36-0	E200.7	ug/l
Antimony (dis)			ug/l
Arsenic	7440-38-2	E206.2	ug/l
Arsenic (dis)			ug/l
Barium	7440-39-3	E200.7	ug/l
Barium (dis)			ug/l
Beryllium	7440-41-7	E200.7	ug/l
Beryllium (dis)			ug/l
Boron	7440-42-8	E200.7	ug/l
Boron (dis)			ug/l
Cadmium	7440-43-9	E213.2	ug/l
Cadmium(dis)			ug/l
Calcium	7440-70-2	E200.7	ug/l

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

INORGANIC PARAMETERS Cont'd	CAS Number	Method	UNITS
Calcium (dis)			ug/l
Chloride(dis)	6887-00-6	E325.2	ug/l
Chromium	7440-47-3	E200.7	ug/l
Chromium (dis)			ug/l
Cobalt	7440-48-4	E200.7	ug/l
Cobalt (dis)			ug/l
Copper	7440-50-8	E200.7	ug/l
Copper (dis)			ug/l
Cyanide (Total as Cn-)	57-12-5	E335.3	ug/l
Fluoride (Total as F-)	7782-41-4	E340.2	ug/l
Iron (Total)	7439-89-6	E200.7	ug/l
Iron (dis)			ug/l
Lead	7439-92-1	E239.2	ug/l
Lead (disl)			ug/l
Magnesium	7439-95-4	E200.7	ug/l
Magnesium (dis)	7439-95-4	E200.7	ug/l
Manganese	7439-96-5	E200.7	ug/l
Manganese (dis)			ug/l
Mercury	7439-97-6	E245.1	ug/l
Mercury (dis)			ug/l
Nickel	7440-02-0	E200.7	ug/l
Nickel (dis)			ug/l
Nitrate (as Nitrogen)	7727-37-9	E353.2	ug/l
Potassium	7440-09-7		ug/l
Potassium(dis)	7440-09-7		ug/l
Selenium	7782-49-2	E270.2	ug/l
Selenium (dis)			ug/l
Silver	7440-22-4	E200.7	ug/l
Silver (dis)			ug/l
Sodium	7440-23-5	E200.7	ug/l
Sodium[dis]	7440-23-5	E200.7	ug/l
Sulfates	4808-79-8	E375.2	ug/l
Thallium	7440-28-0	E279.2	ug/l
Thallium (dis)			ug/l
Tin	7440-31-5	E200.7	ug/l
Tin (dis)			ug/l
Vanadium	7440-62-2	E200.7	ug/l
Vanadium (dis)			ug/l
Zinc	7440-66-6	E200.7	ug/l
Zinc (dis)			ug/l

* Analytical Methods for Flame Spectrophotometry, Varian, 1979

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

ORGANIC CONSTITUENTS	CAS Number	Method	UNITS
2,4-D;2,4-dichlorophenoxy-acetic acid	94-75-7	SW8260	ug/l
Acetone;2-Propane	67-64-1	SW8270	ug/l
Acrolein	107-02-8	SW8080	ug/l
Acrylonitrile;2-Propenenitrile	107-13-1	SW8150	ug/l
Alachor*	15972-60-8	SW8015	ug/l
Aldicarb; Temik	116-06-3	E619	ug/l
Aldrin; Aldrex	309-00-2		ug/l
Atrazine	1912-24-9		ug/l
Benzene*	71-43-2		ug/l
Benzoic Acid	65-85-0		ug/l
bis (2-Chloroethoxy) methane	111-91-1		ug/l
bis (2-Ethylhexyl) phthalate	117-81-7		ug/l
bis Chloromethyl ether	542-88-1		ug/l
Bromobenzene; Phenyl bromide	108-86-1		ug/l
Bromochloromethane; Chlorobromomethane	74-97-5		ug/l
Bromodichloromethane; Dibromochloromethane	75-27-4		ug/l
Bromoform; Tribromomethane	75-25-2		ug/l
Bromomethane; Methyl bromide	74-83-9		ug/l
Butanol,1 –Butyl alcohol	71-36-3		ug/l
Butanol 1,2;sec-butyl alcohol	78-92-2		ug/l
Butanone, 2-; Methyl ethyl ketone; MEK	73-93-3		ug/l
Butylbenzene, –; 1-Phenylbutane	104-51-8		ug/l
Butylbenzene, sec-; (1-Methylpropyl)benzene	135-98-8		ug/l
Butylbenzene, tert-; (1,1-Dimethylethly)benzene	98-06-6		ug/l
Butylbenzyl phthalate	85-68-7		ug/l
Carbofuran	1563-66-2		ug/l
Carbon disulfide	75-15-0		ug/l
Carbon tetrachloride	56-23-5		ug/l
Chlordane*	57-74-9		ug/l
Chlorobenzene; Monochlorobenzene	108-90-7		ug/l
Chlorodibromomethane; Dibromochloromethane	124-48-1		ug/l
Chloroethane; ethyl chloride	75-00-3		ug/l
Chloroethyl Vinyl Ether, 2-; (2-Chloroethoxy)ethene	110-75-8		ug/l
Chloroform; Trichloromethane	67-66-3		ug/l
Chloronaphthalene, 2	91-58-7		ug/l
Chlorotoluene, o-	95-49-8		ug/l
Chlorotoluene, p-	106-43-4		ug/l
Cresol, p-; cresol, 4-methylphenol	106-44-5		ug/l
Cumene; (1-Methylethyl)benzene; Isopropylbenzene	98-82-8		ug/l
Cymene; p-Isopropyltoluene, Dolcymene	25515-15-1		ug/l
Dalapon			

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

ORGANIC CONSTITUENTS Cont'd	CAS Number	Method	UNITS
DDD;1,1'-(2,2-dichloroethylidene)bis[4 chlorobenzene]	72-54-8		ug/l
DDE;1,1'''-(dichloroethenylidene)bis[4 chlorobenzene]	72-55-9		ug/l
DDT; 1,1'-(2,2,2-Trichloroethylidene)bis[4-chlorbenzene	50-29-3		ug/l
Di-n-butyl pthalate; Dibutyl pthalate	84-74-2		ug/l
Dibromo-3-chloropropane, 1,2-; (DBCP)	96-12-8		ug/l
Dichloro-2-butene, trans-1,4-	110-57-6		ug/l
Dichlorobenzene, 1,2; o-Dichlorobenzene	95-50-1		ug/l
Dichlorobenzene, 1,3; m-Dichlorobenzene	541-73-1		ug/l
Dichlorobenzene, 1,4; p-Dichlorobenzene	106-46-7		ug/l
Dichlorodifluoromethane; Difluorodichloromethane; Freon 12	75-71-8		ug/l
Dichloroethane, 1,1-; Ethylidene chloride	75-34-3		ug/l
Dichloroethane, 1,2-; ethylene dichloride*	107-06-2		ug/l
Dichloroethylene, 1,1-	75-35-4		ug/l
Dichloroethylene, 1,2-	540-59-0		ug/l
Dichloroethylene, cis-1,2-	156-59-0		ug/l
Dichloroethylene, trans-1,2-	156-60-5		ug/l
Dichloropropane, 1,2-*	78-87-5		ug/l
Dichloropropane, 1,3-; Trimethylene dichloride	142-28-9		ug/l
Dichloropropane, 2,2-; Isopropylene chloride	594-20-7		ug/l
Dichloropropene, 1,1-; 1,1-Dichloropropylene	563-58-6		ug/l
Dichloropropene, 1.3-; 1,3-Dichloropropylene	542-75-6		ug/l
Dichloropropene, cis-1,3-	10060-01-2		ug/l
Dichloropropene, trans-1,3-	10061-02-6		ug/l
Dieldrin	60-57-1		ug/l
Diethyl phthalate	84-66-2		ug/l
Difluorobenzene, 1,4-; p-Difluorobenzene	540-36-3		ug/l
Dimethyl phthalate	131-11-3		ug/l
Dimethylphenol,2,4-	1300-71-6		ug/l
Dinoseb			
Endosulfan I	959-98-8		ug/l
Endosulfan II	33213-65-9		ug/l
Endosulfan Sulfate	1031-07-8		ug/l
Endothall			
Endrin	72-20-8		ug/l
Endrin Aldehyde	7421-93-4		ug/l
Endrin Ketone			ug/l
Ethyl acetate	141-78-6		ug/l
Ethyl Alcohol; Ethanol	64-17-5		ug/l
Ethyl Methacrylate	97-63-2		ug/l
Ethylbenzene	100-41-4		ug/l
Ethylene dibromide (EDB); 1,2-Dibromoethane	106-93-4		ug/l

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

ORGANIC CONSTITUENTS Cont'd	CAS Number	Method	UNITS
gamma-BHC; 1,2,3,4,5,6-Hexachlorocyclohexane; Lindane	58-89-9		ug/l
Heptachlor*	76-44-8		ug/l
Heptachlor Epoxide*	1024-57-3		ug/l
Hexachlorobutadiene	87-68-3		ug/l
Hexanone, 2-; Methyl butyl ketone	591-78-6		ug/l
Iodomethane; Methyl iodide	74-88-4		ug/l
Isophorone	78-59-1		ug/l
Methoxchlor	72-43-5		ug/l
Methyl chloride; chloromethane	74-87-3		ug/l
Methyl-2-pentanone, 4-; Methyl isobutyl ketone	108-10-1		ug/l
Methylene bromide; Dibromoethane	74-95-3		ug/l
Methylene chloride; Dichloromethane	75-09-2		ug/l
Naphthalene	91-20-3		ug/l
Nitrobenzene	98-95-3		ug/l
Nitrophenol, 4-; p-Nitrohenol	100-07-7		ug/l
Parathion; 0,0-Diethyl phosphorotioic acid	56-38-2		ug/l
PCBs; Polychlorinated biphenyls*	1336-36-3		ug/l
Pentachlorophenol*	87-86-5		ug/l
Phenanthrene	85-01-8		ug/l
Phenol	108-95-2		ug/l
Picloram			
Propanol, 1-; n-Propyl alcohol	71-23-8		ug/l
Propanol, 2-; isopropyl alcohol	67-63-0		ug/l
Propylbenzene, n-; 1-Phenylpropane	103-65-1		ug/l
Silvex; 2-(2,4,5-trichlorophenoxy)propionic acid; 2,4,5-TP	93-72-1		ug/l
Simazine			
Styrene; Ethenylbenzene	100-42-5		ug/l
Tetrachloroethane, 1,1,1,2-	630-20-6		ug/l
Tetrachloroethane, 1,1,2,2-	79-34-5		ug/l
Tetrachloroethene, 1,1,2,2-; Tetrachloroethylene*	127-18-4		ug/l
Tetrahydrofuran; Tetramethylene oxide	109-99-9		ug/l
Toluene; Methylbenzene	108-88-3		ug/l
Toxaphene	8001-35-2		ug/l
Trichlorobenzene, 1,2,3-	87-61-6		ug/l
Trichlorobenzene, 1,2,4-	120-82-1		ug/l
Trichloroethane, 1,1,1-; Methylchloroform	71-55-6		ug/l
Trichloroethane, 1,1,2-	79-00-5		ug/l
Trichloroethylene, Trichloroethene	79-01-6		ug/l
Trichlorofluoromethane; Fluorotrichloromethane; Freon 11	75-69-4		ug/l
Trichlorophenoxyacetic acid, 2,4,5-; 2,4,5-T	93-76-5		ug/l
Trichloropropane, 1,2,3-	96-18-4		ug/l

Table 2. Groundwater sampling parameter list for evaluating the effectiveness of source reduction and natural attenuation remedial measures (continued).

LIST 2 - (Annual Organics and Inorganics)

ORGANIC CONSTITUENTS Cont'd	CAS Number	Method	UNITS
Trimethylbenzene, 1,2,4-; Pseudocumene	95-63-6		ug/l
Trimethylbenzene, 1,3,5-; Mesitylene	108-67-8		ug/l
Vinyl acetate; Ethenyl ester acetic acid	108-05-4		ug/l
Vinyl chloride; Chloroethene*	75-01-4		ug/l
Xylene, —	108-38-3		ug/l
Xylene, o-	95-47-6		ug/l
Xylene, p-	106-42-3		ug/l
Xylenes	1330-20-7		ug/l

Table 3. Summary of Applicable Groundwater Quality Standards (AGQS).

PARAMETER	UNITS	AGQS	Illinois 620	MCL
FIELD DATA				
pH(unfiltered)	units	8.16		
pH(unfiltered)	units	5.47		
Specific Conductance<unfiltered, umhos/cm 25C>	umhos	2350.22		
LIST 2 – MISCELLANEOUS CONSTITUENTS				
Alkalinity (total)	mg/l	1522.98		
Biological Oxygen Demand (BOD)	mg/l	4.04		
Chemical Oxygen Demand (COD)	mg/l	50.04		
Oil (Hexane soluble or equiv)	mg/l	2.50		
Total Dissolved Solids (TDS)	mg/l	1755.87	1200.00	
Total Organic Carbon (TOC)	mg/l	4301.02		
Total Organic Halogens (TOX)	mg/l	0.11		
LIST 3 – INORGANIC PARAMETERS				
Aluminum	mg/l	66.60		
Aluminum (dis)	mg/l	1.21		
Ammonia	mg/l	0.9		
Antimony	mg/l	0.005	0.006	0.006
Antimony (dis)	mg/l	0.25		
Arsenic	mg/l	0.01	0.05	0.05
Arsenic (dis)	mg/l	0.002		
Barium	mg/l	225.18	2.00	2.00
Barium (dis)	mg/l	33.14		
Beryllium	mg/l	0.005	0.004	0.004
Beryllium (dis)	mg/l	0.005		
Boron	mg/l	0.2	2	
Boron (dis)	mg/l	0.098		
Cadmium	mg/l	0.045		0.005
Cadmium (dis)	mg/l	0.005		
Calcium	mg/l	3093.41		
Calcium (dis)	mg/l	428.89		
Chloride	mg/l	87.51	200.00	
Chromium	mg/l	5.52	0.10	0.10
Chromium (dis)	mg/l	0.1		
Cobalt	mg/l	0.05	1	
Cobalt (dis)	mg/l	0.1		
Copper	mg/l	1.89	0.65	1.30
Copper (dis)	mg/l	0.02		
Cyanide (Total as CN-)	mg/l	0.034	0.2	0.2
Fluoride (Total as F-)	mg/l	0.273	4.00	4.00
Iron (Total)	mg/l	446.70	5.00	
Iron (dis)	mg/l	4.53		
Lead	mg/l	41.23	0.01	0.02
Lead (disl)	mg/l	0.004		
Magnesium	mg/l	109.50		

Table 3. Summary of Applicable Groundwater Quality Standards (AGQS) (continued).

PARAMETER	UNITS	AGQS	Illinois 620	MCL
Magnesium (dis)	mg/l	109.11		
Manganese	mg/l	12.38	0.15	
Manganese (dis)	mg/l	1.48		
Mercury	mg/l	0.0004	0.002	0.002
Mercury (dis)	mg/l	0.0002		
Nickel	mg/l	1.76	0.10	Remanded
Nickel (dis)	mg/l	0.04		
Nitrate (as Nitrogen)	mg/l	11.74	10.00	10.00
Potassium	mg/l	29.01		
Potassium(dis)	mg/l	28.19		
Selenium	mg/l	0.004	0.05	0.05
Selenium (dis)	mg/l	0.002		
Silver	mg/l	0.02	0.05	
Silver (dis)	mg/l	0.01		
Sodium	mg/l	164.79		
Sodium(dis)	mg/l	93.02		
Sulfates	mg/l	179.37	400.00	500.00
Thallium	mg/l	0.2	0.002	0.002
Thallium (dis)	mg/l	0.2		
Tin	mg/l	0.2		
Tin (dis)	mg/l	0.2		
Vanadium	mg/l	0.1		
Vanadium (dis)	mg/l	0.05		
Zinc	mg/l	622.28	5.00	
Zinc (dis)	mg/l	236.07		
LIST 4 – ORGANIC CONSTITUENTS				
2,4-D;2,4-dichlorophenoxy-acetic acid	ug/l	2.00	70	70
Acetone;2-Propane	ug/l	10.00		
Acrolein	ug/l	100.00		
Acrylonitrile;2-Propenenitrile	ug/l	10.00		
Alachor	ug/l	2.00	2	2
Aldicarb; Temik	ug/l	1.00	3	7
Aldrin; Aldrex	ug/l	0.50		
Atrazine	ug/l	3.00	3	3
Benzene	ug/l	2.80		5
Benzoic Acid	ug/l	500.00		
bis (2-Chloroethoxy) methane	ug/l	100.00		
bis (2-Ethylhexyl) phthalate	ug/l	72.00		
Bromobenzene; Phenyl bromide	ug/l	5.00		
Bromochloromethane; Chlorobromomethane	ug/l	5.00		
Bromodichloromethane; Dibromochloromethane	ug/l	5.00		100
Bromoform; Tribromomethane	ug/l	5.00		100
Bromomethane; Methyl bromide	ug/l	10.00		
Butanol 1,n-butyl alcohol	ug/l	320.00		
Butanol 1,2;sec-butyl alcohol	ug/l	260.00		

Table 3. Summary of Applicable Groundwater Quality Standards (AGQS) (continued).

PARAMETER	UNITS	AGQS	Illinois 620	MCL
Butanone, 2-; Methyl ethyl ketone; MEK	ug/l	5.00		
Butylbenzene, n-; 1-Phenylbutane	ug/l	5.00		
Butylbenzene, sec-; (1-Methylpropyl)benzene	ug/l	5.00		
Butylbenzene, tert-; (1,1-Dimethylethly)benzene	ug/l	5.00		
Butylbenzyl phthalate	ug/l	100.00		
Carbofuran	ug/l	10.00		40
Carbon disulfide	ug/l	5.00		
Carbon tetrachloride	ug/l	5.00		5
Chlordane	ug/l	1.20	2	2
Chlorobenzene; Monochlorobenzene	ug/l	5.00		100
Chlorodibromomethane; Dibromochloromethane	ug/l	5.00		100
Chloroethane; ethyl chloride	ug/l	10.00		
Chloroethyl Vinyl Ether, 2-; (2-Chloroethoxy)ethene	ug/l	10.00		
Chloroform; Trichloromethane	ug/l	5.00		100
Chloronaphthalene, 2	ug/l	100.00		
Chlorotoluene, o-	ug/l	5.00		
Chlorotoluene, p-	ug/l	5.00		
Cresol, p-; cresol, 4-methylphenol	ug/l	100.00		
Cumene; (1-Methylethyl)benzene; Isopropylbenzene	ug/l	5.00		
Cymene; p-Isopropyltoluene, Dolcymene	ug/l	5.00		
DDD; 1,1'-(2,2-dichloroethylidene)bis[4chlorobenzene]	ug/l	0.25		
DDE;1,1'-(dichloroethenylidene)bis[4chlorobenzene]	ug/l	0.25		
DDT; 1,1'-(2,2,2-Trichloroethylidene)bis[4-chlorbenzene	ug/l	0.25		
Di-n-butyl pthalate; Dibutyl pthalate	ug/l	100.00		
Dibromo-3-chloropropane, 1,2-; (DBCP)	ug/l	5.00		0.2
Dichloro-2-butene, trans-1,4-	ug/l	5.00		
Dichlorobenzene, 1,2; o-Dichlorobenzene	ug/l	5.00		600
Dichlorobenzene, 1,3; m-Dichlorobenzene	ug/l	5.00		600
Dichlorobenzene, 1,4; p-Dichlorobenzene	ug/l	3.70		75
Dichlorodifluoromethane; Difluorodichloromethane; Freon 12	ug/l	19.00		
Dichloroethane, 1,1-; Ethylidene chloride	ug/l	31.00		
Dichloroethane, 1,2-; ethylene dichloride	ug/l	2.50		5
Dichloroethylene, 1,1-	ug/l	2.50		7
Dichloroethylene, 1,2-	ug/l	150.00		
Dichloroethylene, cis-1,2-	ug/l	5.00		70
Dichloroethylene, trans-1,2-	ug/l	5.00		100
Dichloropropane, 1,2-*	ug/l	6.00		5
Dichloropropane, 1,3-; Trimethylene dichloride	ug/l	5.00		
Dichloropropane, 2,2-; Isopropylene chloride	ug/l	5.00		
Dichloropropene, 1,1-; 1,1-Dichloropropylene	ug/l	5.00		
Dichloropropene, 1,3-; 1,3-Dichloropropylene	ug/l	5.00		
Dichloropropene, cis-1,3-	ug/l	5.00		
Dichloropropene, trans-1,3-	ug/l	5.00		
Dieldrin	ug/l	0.25		
Diethyl phthalate	ug/l	100.00		6

Table 3. Summary of Applicable Groundwater Quality Standards (AGQS) (continued).

PARAMETER	UNITS	AGQS	Illinois 620	MCL
Difluorobenzene, 1,4-; p-Difluorobenzene	ug/l	5.00		
Dimethyl phthalate	ug/l	100.00		
Dimethylphenol,2,4-	ug/l	100.00		
Endosulfan I	ug/l	0.12		
Endosulfan II	ug/l	0.25		
Endosulfan Sulfate	ug/l	0.25		
Endrin	ug/l	0.25		2
Endrin Aldehyde	ug/l	0.25	2	
Endrin Ketone	ug/l	0.25		
Ethyl acetate	ug/l	5.00		
Ethyl Alcohol; Ethanol	ug/l	100.00		
Ethyl Methacrylate	ug/l	5.00		
Ethylbenzene	ug/l	5.00		700
Ethylene dibromide (EDB); 1,2-Dibromoethane	ug/l	5.00		0.05
gamma-BHC; 1,2,3,4,5,6-Hexachlorocyclohexane; Lindane	ug/l	0.50	0.2	0.2
Heptachlor*	ug/l	0.50	0.4	0.4
Heptachlor Epoxide*	ug/l	0.50	0.2	0.2
Hexachlorobutadiene	ug/l	100.00		
Hexanone, 2-; Methyl butyl ketone	ug/l	10.00		
Iodomethane; Methyl iodide	ug/l	10.00		
Isophorone	ug/l	100.00		
Methoxchlor	ug/l	1.20	40	40
Methyl chloride; chloromethane	ug/l	10.00		
Methyl-2-pentanone, 4-; Methyl isobutyl ketone	ug/l	10.00		
Methylene bromide; Dibromoethane	ug/l	5.00		
Methylene chloride; Dichloromethane	ug/l	8.00		5
Naphthalene	ug/l	100.00		
Nitrobenzene	ug/l	100.00		
Nitrophenol, 4-; p-Nitrohenol	ug/l	500.00		
Parathion; 0,0-Diethyl phosphorotioic acid	ug/l	1.00		
PCBs; Polychlorinated biphenyls	ug/l	2.50		0.5
Pentachlorophenol*	ug/l	500.00		1
Phenanthrene	ug/l	100.00		
Phenol	ug/l	100.00		
Propanol, 1-; n-Propyl alcohol	ug/l	100.00		
Propanol, 2-; isopropyl alcohol	ug/l	160.00		
Propylbenzene, n-; 1-Phenylpropane	ug/l	5.00		
Silvex; 2-(2,4,5-trichlorophenoxy)propionic acid; 2,4,5-TP	ug/l	1.00	50	
Styrene; Ethenylbenzene	ug/l	10.00		100
Tetrachloroethane, 1,1,1,2-	ug/l	5.00		
Tetrachloroethane, 1,1,2,2-	ug/l	5.00		
Tetrachloroethene, 1,1,2,2-; Tetrachloroethylene	ug/l	26.00		5
Tetrahydrofuran; Tetramethylene oxide	ug/l	42.00		
Toluene; Methylbenzene	ug/l	20.00		
Toxaphene	ug/l	2.50	3	3

Table 3. Summary of Applicable Groundwater Quality Standards (AGQS) (continued).

PARAMETER	UNITS	AGQS	Illinois 620	MCL
Trichlorobenzene, 1,2,3-	ug/l	5.00		
Trichlorobenzene, 1,2,4-	ug/l	5.00		70
Trichloroethane, 1,1,1-; Methylchloroform	ug/l	12.00		200
Trichloroethane, 1,1,2-	ug/l	5.00		5
Trichloroethylene, Trichloroethene	ug/l	66.00		5
Trichlorofluoromethane; Fluorotrichloromethane; Freon 11	ug/l	5.00		
Trichlorophenoxyacetic acid, 2,4,5-; 2,4,5-T	ug/l	1.00		50
Trichloropropane, 1,2,3-	ug/l	5.00		
Trimethylbenzene, 1,2,4-; Pseudocumene	ug/l	5.00		
Trimethylbenzene, 1,3,5-; Mesitylene	ug/l	5.00		
Vinyl acetate; Ethenyl ester acetic acid	ug/l	10.00		
Vinyl chloride; Chloroethene	ug/l	17.00		2
Xylene, —	ug/l	5.00		10000
Xylene, o-	ug/l	5.00		
Xylene, p-	ug/l	5.00		
Xylenes	ug/l	5.00		

Table 4. Organic Parameters that Exceed MCL and/or AGQS values for 1999, 1998 and 1997 Sampling Events.

Well ID	Well Type	Sample Date	Parameter	1999 Value	1998 Value	1997 Value	Units	Detection Limit	AGQS	MCL
Background Wells (upgradient of Landfill)										
G109A	Bedrock	5/27/97	cis-1,2-Dichloroethene			9	ug/l	5	5	70
G109A	Bedrock	5/27/97	Tetrachloroethene			8	ug/l	5	26	5
G109A	Bedrock	4/12/99	cis-1,2-Dichloroethene	5.6			ug/l	1	5	70
G113	Bedrock	5/27/97	Acetone			14	ug/l	10	10	
G113	Bedrock	4/2/98	1,2,3-Trichlorobenzene		14		ug/l	5	5	
G113	Bedrock	4/2/98	1,2,4-Trichlorobenzene		7		ug/l	5	5	70
G113	Bedrock	4/2/98	2-Butanone		12		ug/l	5	5	
G113	Bedrock	4/12/99	cis-1,2-Dichloroethene	5.5			ug/l	1	5	70
G113A	Bedrock	5/27/97	cis-1,2-Dichloroethene			55	ug/l	5	5	70
G113A	Bedrock	5/27/97	Tetrachloroethene			13	ug/l	5	26	5
G113A	Bedrock	5/27/97	Trichloroethene			21	ug/l	5	66	5
G113A	Bedrock	5/27/97	Vinyl Chloride			9	ug/l	2	17	2
G113A	Bedrock	4/2/98	1,2-Dichloropropane		6		ug/l	5	6	5
G113A	Bedrock	4/2/98	cis-1,2-Dichloroethene		98		ug/l	5	5	70
G113A	Bedrock	4/2/98	Tetrachloroethene		15		ug/l	5	26	5
G113A	Bedrock	4/2/98	Trichloroethene		42		ug/l	5	66	5
G113A	Bedrock	4/2/98	Vinyl Chloride		15		ug/l	2	17	2
G114	Bedrock	5/28/97	1,4-Dichlorobenzene			23	ug/l	5	5	75
G114	Bedrock	5/28/97	Chlorobenzene			18	ug/l	5	5	100
G114	Bedrock	5/28/97	Dichlorodifluoromethane			22	ug/l	5	19	
G114	Bedrock	5/28/97	Vinyl Chloride			4	ug/l	2	17	2
G114	Bedrock	4/2/98	1,4-Dichlorobenzene		37		ug/l	5	5	75
G114	Bedrock	4/2/98	bis(2-ethylhexyl)phthalate		79		ug/l	10	72	
G114	Bedrock	4/2/98	Chlorobenzene		24		ug/l	5	5	100
G114	Bedrock	4/2/98	Phenol		188		ug/l	10	100	
G114	Bedrock	4/15/99	1,4-Dichlorobenzene	25			ug/l	1	5	75
G114	Bedrock	4/15/99	Chlorobenzene	11			ug/l	1	5	100

Table 4. Organic Parameters that Exceed MCL and/or AGQS values for 1999, 1998 and 1997 Sampling Events (continued).

Well ID	Well Type	Sample Date	Parameter	1999 Value	1998 Value	1997 Value	Units	Detection Limit	AGQS	MCL
G120B	Bedrock	5/27/97	cis-1,2-Dichloroethene			20	ug/l	5	5	70
G120B	Bedrock	5/27/97	Trichloroethene			6	ug/l	5	66	5
G120B	Bedrock	4/2/98	2-Butanone		13		ug/l	5	5	
G120B	Bedrock	4/2/98	cis-1,2-Dichloroethene		23		ug/l	5	5	70
G120B	Bedrock	4/2/98	Trichloroethene		7		ug/l	5	66	5
G120B	Bedrock	4/15/99	cis-1,2-Dichloroethene	11			ug/l	1	5	70
Observation Wells (downgradient of Landfill)										
B15R	Overburden	2/12/97	Phenol			132	ug/l	10	100	
B15R	Overburden	5/28/97	1,4-Dichlorobenzene			13	ug/l	5	5	75
B15R	Overburden	5/28/97	Tetrahydrofuran			51	ug/l	5	42	
B15R	Overburden	4/3/98	1,4-Dichlorobenzene		12		ug/l	5	5	75
B15R	Overburden	4/14/99	1,4-Dichlorobenzene	9.4			ug/l	1	5	75
G115	Overburden	5/28/97	1,4-Dichlorobenzene			10	ug/l	5	5	75
G115	Overburden	5/28/97	Acetone			11	ug/l	10	10	
G115	Overburden	5/28/97	Benzene			3	ug/l	2	2.8	5
G115	Overburden	4/7/98	1,4-Dichlorobenzene		12		ug/l	5	5	75
G115	Overburden	4/7/98	Benzene		3		ug/l	2	2.8	5
G116A	Overburden	5/28/97	Tetrachloroethene			7	ug/l	5	26	5
G116A	Overburden	4/6/98	Acetone		17		ug/l	10	10	
G116D	Bedrock	4/6/98	Acetone		11		ug/l	10	10	
G116D	Bedrock	4/6/98	Tetrachloroethene		6		ug/l	5	26	5
G132	Bedrock	5/27/97	cis-1,2-Dichloroethene			9	ug/l	5	5	70
G132	Bedrock	5/27/97	Tetrachloroethene			12	ug/l	5	26	5
G132	Bedrock	4/7/98	cis-1,2-Dichloroethene		7		ug/l	5	5	70
G132	Bedrock	4/7/98	Tetrachloroethene		6		ug/l	5	26	5
G132	Bedrock	4/14/99	cis-1,2-Dichloroethene	7.8			ug/l	1	5	70
G132	Bedrock	4/14/99	Tetrachloroethene	8.1			ug/l	1	26	5
G33D	Overburden	4/6/98	2-Butanone		130		ug/l	5	5	

Table 4. Organic Parameters that Exceed MCL and/or AGQS values for 1999, 1998 and 1997 Sampling Events (continued).

Well ID	Well Type	Sample Date	Parameter	1999 Value	1998 Value	1997 Value	Units	Detection Limit	AGQS	MCL
G33D	Overburden	4/6/98	Acetone		13		ug/l	10	10	
G33D	Overburden	4/13/99	Phenol	190			ug/l	10	100	
G35D	Overburden	5/28/97	Acetone			11	ug/l	10	10	
G35S	Overburden	4/6/98	cis-1,2-Dichloroethene		7		ug/l	5	5	70
G35S	Overburden	4/6/98	Tetrachloroethene		6		ug/l	5	26	5
G37S	Overburden	11/4/97	Phenol			129	ug/l	10	100	
G37S	Overburden	1/27/98	Phenol		187		ug/l	10	100	
G38	Overburden	7/12/99	Phenol	790			ug/l	100	100	
G39	Overburden	5/28/97	cis-1,2-Dichloroethene			7	ug/l	5	5	70
G39	Overburden	5/28/97	Tetrachloroethene			6	ug/l	5	26	5
G39	Overburden	4/7/98	cis-1,2-Dichloroethene		6		ug/l	5	5	70
G40	Overburden	4/7/98	1,4-Dichlorobenzene		7		ug/l	5	5	75
G40	Overburden	4/14/99	1,4-Dichlorobenzene	6.3			ug/l	1	5	75
MW106	Overburden	4/14/99	1,4-Dichlorobenzene	6.6			ug/l	1	5	75
MW106	Overburden	4/14/99	Tetrahydrofuran	48			ug/l	5	42	
P1	Overburden	5/27/97	1,4-Dichlorobenzene			6	ug/l	5	5	75
P1	Overburden	4/7/98	1,4-Dichlorobenzene		6		ug/l	5	5	75
P3R	Overburden	1/27/98	Phenol		128		ug/l	10	100	
P4R	Overburden	5/27/97	cis-1,2-Dichloroethene			6	ug/l	5	5	70
P4R	Overburden	5/27/97	Tetrachloroethene			9	ug/l	5	26	5
P4R	Overburden	4/2/98	cis-1,2-Dichloroethene		6		ug/l	5	5	70
P4R	Overburden	4/2/98	Tetrachloroethene		9		ug/l	5	26	5
P4R	Overburden	4/14/99	cis-1,2-Dichloroethene	10			ug/l	1	5	70
P4R	Overburden	4/14/99	Tetrachloroethene	11			ug/l	1	26	5
SG3		4/6/98	Acetone		15		ug/l	10	10	

Table 5. Chemicals of Concern (COCs): Winnebago Reclamation Landfill.

Parameter and Unit	Maximum Detection Since March 1995	Well	Sampling Date
1,2,3-Trichlorobenzene (ug/L)	14	G113	4/2/98
1,2,4-Trichlorobenzene (ug/L)	7	G113	4/2/98
1,2,4-Trimethylbenzene (ug/L)	7	B13	4/15/99
1,2-Dichloropropane (ug/L)	6	G113A	4/2/98
1,4-Dichlorobenzene (ug/L)	37	G114	4/2/98
2-Butanone (ug/L)	130	G33D	4/6/98
Acetone (ug/L)	18	MW106	3/28/95
Aluminum (ug/L)	87	G115	4/14/99
Ammonia, Nitrogen (dis) (mg/L)	886	G38	1/27/98
Ammonia, Nitrogen (mg/L)	280	MW106	4/14/99
Antimony (dis) (mg/L)	0.01	MW106	3/28/95
Antimony (mg/L)	0.045	G114	5/28/97
Arsenic (dis) (mg/L)	0.092	G115	11/20/96
Arsenic (mg/L)	0.036	G114	5/28/97
Benzene (ug/L)	4.1	G110	4/16/99
Biological Oxygen Demand (BOD) (mg/L)	82	G115	4/14/99
bis(2-ethylhexyl)phthalate (ug/L)	100	MW106	3/28/95
Boron (dis) (mg/L)	1.5	G35D	11/3/97
Boron (mg/L)	0.96	MW106	5/27/97
Cadmium (dis) (mg/L)	0.0065	G109A	2/11/97
Cadmium (ug/L)	0.008	B15R	4/14/99
Chemical Oxygen Demand (COD) (mg/L)	339	MW106	3/28/95
Chloride (dis) (mg/L)	1000	G118R	10/12/98
Chloride (mg/L)	930	P1	11/20/96
Chlorobenzene (ug/L)	24	G114	4/2/98
Chromium (ug/L)	1.4	G118R	4/14/99
cis-1,2-Dichloroethene (ug/L)	98	G113A	4/2/98
Cobalt (ug/L)	0.074	B15R	4/14/99
Copper (dis) (mg/L)	0.13	G117	5/17/96
Cyanide (total) (mg/L)	0.05	G114	1/26/98
Dichlorodifluoromethane (ug/L)	22	G114	5/28/97
Ethylbenzene (ug/L)	34	P1	3/28/95
Fluoride (mg/L)	1	G132	4/14/99
Iron (dis) (mg/L)	50.2	G115	3/29/95
Lead (dis) (mg/L)	0.19	G109A	2/11/97
Lead (mg/L)	0.085	P4R	5/27/97

Table 5. Chemicals of Concern (COCs): Winnebago Reclamation Landfill (continued).

Parameter and Unit	Maximum Detection Since March 1995	Well	Sampling Date
Magnesium (mg/L)	410	P3R	4/14/99
Manganese (dis) (mg/L)	2.8	G114	5/28/97
Mercury (mg/L)	0.001	G118R	5/27/97
Nickel (dis) (mg/L)	0.27	G117	5/17/96
Nitrate Nitrogen (dis) (mg/L)	84	G116A	8/14/97
Nitrate, Nitrogen (mg/L)	15.2	G119	4/3/98
Oil (Hexane soluble or equiv) (mg/L)	18.4	G36	5/28/97
Phenol (mg/L)	132	B15R	2/12/97
Potassium (dis) (mg/L)	104	MW106	3/28/95
Potassium (mg/L)	100	G35D	4/13/99
Selenium (dis) (mg/L)	0.02	G117	5/17/96
Selenium (ug/L)	0.0044	G116	4/6/98
Sodium (mg/L)	280	MW106	4/14/99
Specific Conductance (umhos)	4870	G35D	10/14/98
Tetrachloroethene (ug/L)	19	G111A	4/15/99
Tetrahydrofuran (ug/L)	87	MW106	3/28/95
Thallium (mg/L)	0.009	B15R	5/28/97
Total Dissolved Solids (TDS) (mg/L)	1900	G38	7/12/99
Trichloroethene (ug/L)	42	G113A	4/2/98
Vanadium (dis) (mg/L)	0.13	G117	5/17/96
Vanadium (ug/L)	0.27	G35S	4/13/99
Vinyl Chloride (ug/L)	15	G113A	4/2/98
Xylenes (total) (ug/L)	15	B13	4/15/99

Table 6. Summary of dissolved ammonia mass-in-place in monitoring network from February 1997 to November 1999.

Date	Area (square ft)	Mass (lbs)
Q197Upper	1705840	16164
Q197Lower	1001890	18825
Q297Upper	1705840	18002
Q297Lower	1001890	25776
Q397Upper	1705840	16188
Q397Lower	1001890	19574
Q497Upper	1705840	24526
Q497Lower	1001890	93481
Q198Upper	1705840	54979
Q198Lower	1001890	76084
Q298Upper	1705840	21345
Q298Lower	1001890	12463
Q398Upper	1705840	19413
Q398Lower	1001890	14875
Q498Upper	1705840	16877
Q498Lower	1001890	28484
Q199Upper	1705840	9037
Q199Lower	1001890	41981
Q299Upper	1705840	15375
Q299Lower	1001890	33036
Q399Upper	1705840	14582
Q399Lower	1001890	9646
Q499Upper	1705840	19048
Q499Lower	1001890	11623
Q197All	2707730	34989
Q297All	2707730	43778
Q397All	2707730	35762
Q497All	2707730	118007
Q198All	2707730	131063
Q298All	2707730	33808
Q398All	2707730	34288
Q498All	2707730	45361
Q199All	2707730	51018
Q299All	2707730	48411
Q399All	2707730	24228
Q499All	2707730	30671

APPENDIX A

FINAL COVER CONSTRUCTION DRAWINGS

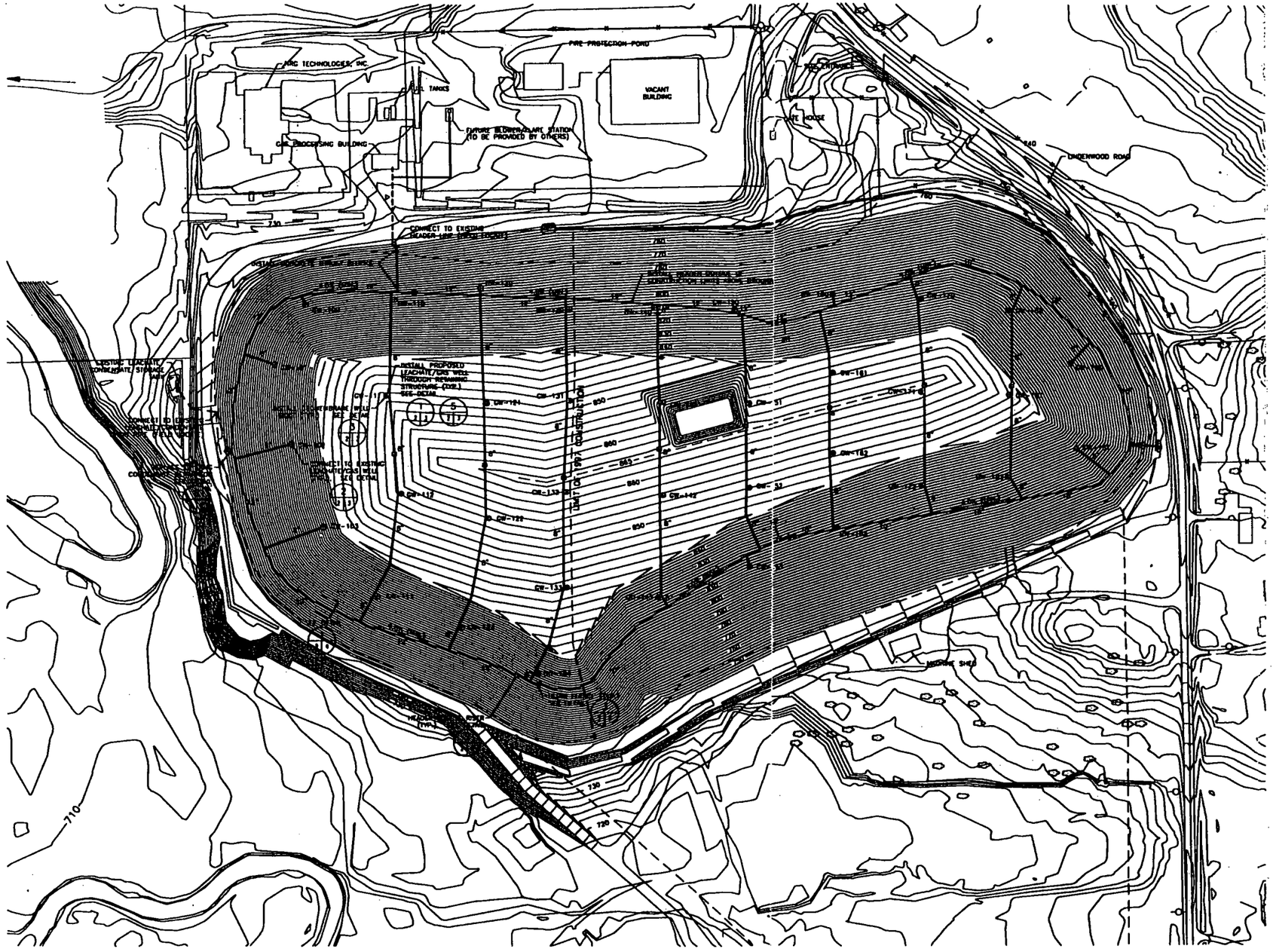
FROM EMCON, (1997)

TITLE: EXISTING CONDITIONS

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB	FIGURE:
DRAFTED:	SDL	1
FILE:	N021021A.DWG	
DATE:	6-11-99	



FROM EMCON, (1997)

-N-

LEGEND

- PROPERTY BOUNDARY
- REFUSE LIMIT
- 100 YEAR FLOODPLAIN BOUNDARY
- 12" GAS/LEACHATE HEADER TO BE CONSTRUCTED
- 12" FUTURE GAS/LEACHATE HEADER
- FENCE
- SITE ACCESS ROAD
- EXISTING GAS/LEACHATE WELL
- PROPOSED GAS/LEACHATE WELL
- CONDENSATE SEPARATOR
- UNDERGROUND CONTROL VALVE
- HEADER ACCESS RISER
- REDUCER
- FLANGE/BLIND FLANGE

WELL SCHEDULE

GAS WELL	COORDINATES				
	NORTH	EAST	Ds	Dg	Dw
GW-111	2001966	799984	20	134	136
GW-112	2001735	800017	20	139	141
GW-121	2001950	800217	20	132	134
GW-122	2001677	800221	20	137	139
GW-131	2001957	800408	20	131	133
GW-132	2001747	800400	20	148	148
GW-133	2001528	800401	20	124	126

(ALL DEPTHS NOTED FROM GROUND ELEVATION)
Ds = DEPTH OF SOLID PIPE
Dg = DEPTH OF BORING
Dw = DEPTH OF REFUSE

NOTES:

1. AERIAL SURVEY OF EXISTING TOPOGRAPHY PROVIDED BY GEONEX, INC., DES PLAINES, IL. DATE OF PHOTOGRAPHY APRIL 26, 1990 SUPPLEMENTED BY NOVEMBER 1995 AND APRIL 1996 FIELD SURVEYS.
2. GROUND ELEVATIONS IN WELL SCHEDULE ARE BASED ON PERMITTED FINAL GRADES. ACTUAL CONDITIONS MAY VARY.
3. DEPTH OF REFUSE IS APPROXIMATE. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO AVOID DAMAGE TO THE ASPHALT LINER.

0 250 500
SCALE IN FEET

TITLE: LEACHATE/GAS EXTRACTION SYSTEM

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB	FIGURE:
DRAFTED:	SDL	2
FILE:	N021018A.DWG	
DATE:	6-11-99	

AS-BUILT ELEVATIONS

1	2001300	800300	000.0	000.0	000.0	000.0
2	2001300	800350	000.0	000.0	000.0	000.0
3	2001300	800400	000.0	000.0	000.0	000.0
4	2001300	800450	000.0	000.0	000.0	000.0
5	2001350	800250	000.0	000.0	000.0	000.0
6	2001350	800300	000.0	000.0	000.0	000.0
7	2001350	800350	000.0	000.0	000.0	000.0
8	2001350	800400	000.0	000.0	000.0	000.0
9	2001350	800450	000.0	000.0	000.0	000.0
10	2001350	800450	000.0	000.0	000.0	000.0
11	2001300	800150	000.0	000.0	000.0	000.0
12	2001300	800150	000.0	000.0	000.0	000.0
13	2001300	800250	000.0	000.0	000.0	000.0
14	2001300	800250	000.0	000.0	000.0	000.0
15	2001300	800300	000.0	000.0	000.0	000.0
16	2001300	800350	000.0	000.0	000.0	000.0
17	2001300	800400	000.0	000.0	000.0	000.0
18	2001300	800450	000.0	000.0	000.0	000.0
19	2001350	798850	000.0	000.0	000.0	000.0
20	2001350	800000	000.0	000.0	000.0	000.0
21	2001350	800050	000.0	000.0	000.0	000.0
22	2001350	800100	000.0	000.0	000.0	000.0
23	2001350	800150	000.0	000.0	000.0	000.0
24	2001350	800200	000.0	000.0	000.0	000.0
25	2001350	800250	000.0	000.0	000.0	000.0
26	2001350	800300	000.0	000.0	000.0	000.0
27	2001350	800350	000.0	000.0	000.0	000.0
28	2001350	800400	000.0	000.0	000.0	000.0
29	2001350	800450	000.0	000.0	000.0	000.0
30	2001400	798800	000.0	000.0	000.0	000.0
31	2001400	798850	000.0	000.0	000.0	000.0
32	2001400	800000	000.0	000.0	000.0	000.0
33	2001400	800050	000.0	000.0	000.0	000.0
34	2001400	800100	000.0	000.0	000.0	000.0
35	2001400	800150	000.0	000.0	000.0	000.0
36	2001400	800200	000.0	000.0	000.0	000.0
37	2001400	800250	000.0	000.0	000.0	000.0
38	2001400	800300	000.0	000.0	000.0	000.0
39	2001400	800350	000.0	000.0	000.0	000.0
40	2001400	800400	000.0	000.0	000.0	000.0
41	2001400	800450	000.0	000.0	000.0	000.0
42	2001450	798850	000.0	000.0	000.0	000.0
43	2001450	798850	000.0	000.0	000.0	000.0
44	2001450	798850	000.0	000.0	000.0	000.0
45	2001450	798850	000.0	000.0	000.0	000.0
46	2001450	800000	000.0	000.0	000.0	000.0
47	2001450	800050	000.0	000.0	000.0	000.0
48	2001450	800100	000.0	000.0	000.0	000.0
49	2001450	800150	000.0	000.0	000.0	000.0
50	2001450	800200	000.0	000.0	000.0	000.0
51	2001450	800250	000.0	000.0	000.0	000.0
52	2001450	800300	000.0	000.0	000.0	000.0
53	2001450	800350	000.0	000.0	000.0	000.0
54	2001450	800400	000.0	000.0	000.0	000.0
55	2001450	800450	000.0	000.0	000.0	000.0
56	2001500	798750	000.0	000.0	000.0	000.0
57	2001500	798800	000.0	000.0	000.0	000.0
58	2001500	798850	000.0	000.0	000.0	000.0
59	2001500	798900	000.0	000.0	000.0	000.0
60	2001500	798950	000.0	000.0	000.0	000.0
61	2001500	800000	000.0	000.0	000.0	000.0
62	2001500	800050	000.0	000.0	000.0	000.0
63	2001500	800100	000.0	000.0	000.0	000.0
64	2001500	800150	000.0	000.0	000.0	000.0
65	2001500	800200	000.0	000.0	000.0	000.0
66	2001500	800250	000.0	000.0	000.0	000.0
67	2001500	800300	000.0	000.0	000.0	000.0
68	2001500	800350	000.0	000.0	000.0	000.0
69	2001500	800400	000.0	000.0	000.0	000.0
70	2001500	800450	000.0	000.0	000.0	000.0
71	2001550	798700	000.0	000.0	000.0	000.0
72	2001550	798750	000.0	000.0	000.0	000.0
73	2001550	798800	000.0	000.0	000.0	000.0
74	2001550	798850	000.0	000.0	000.0	000.0
75	2001550	798900	000.0	000.0	000.0	000.0
76	2001550	798950	000.0	000.0	000.0	000.0
77	2001550	800000	000.0	000.0	000.0	000.0
78	2001550	800050	000.0	000.0	000.0	000.0
79	2001550	800100	000.0	000.0	000.0	000.0
80	2001550	800150	000.0	000.0	000.0	000.0
81	2001550	800200	000.0	000.0	000.0	000.0
82	2001550	800250	000.0	000.0	000.0	000.0
83	2001550	800300	000.0	000.0	000.0	000.0
84	2001550	800350	000.0	000.0	000.0	000.0
85	2001550	800400	000.0	000.0	000.0	000.0
86	2001550	800450	000.0	000.0	000.0	000.0
87	2001600	798700	000.0	000.0	000.0	000.0
88	2001600	798750	000.0	000.0	000.0	000.0
89	2001600	798800	000.0	000.0	000.0	000.0
90	2001600	798850	000.0	000.0	000.0	000.0
91	2001600	798900	000.0	000.0	000.0	000.0
92	2001600	798950	000.0	000.0	000.0	000.0
93	2001600	800000	000.0	000.0	000.0	000.0
94	2001600	800050	000.0	000.0	000.0	000.0
95	2001600	800100	000.0	000.0	000.0	000.0

AS-BUILT ELEVATIONS

96	2001600	800150	000.0	000.0	000.0	000.0
97	2001600	800200	000.0	000.0	000.0	000.0
98	2001600	800250	000.0	000.0	000.0	000.0
99	2001600	800300	000.0	000.0	000.0	000.0
100	2001600	800350	000.0	000.0	000.0	000.0
101	2001600	800400	000.0	000.0	000.0	000.0
102	2001600	800450	000.0	000.0	000.0	000.0
103	2001650	798850	000.0	000.0	000.0	000.0
104	2001650	798700	000.0	000.0	000.0	000.0
105	2001650	798750	000.0	000.0	000.0	000.0
106	2001650	798800	000.0	000.0	000.0	000.0
107	2001650	798850	000.0	000.0	000.0	000.0
108	2001650	798900	000.0	000.0	000.0	000.0
109	2001650	798950	000.0	000.0	000.0	000.0
110	2001650	800000	000.0	000.0	000.0	000.0
111	2001650	800050	000.0	000.0	000.0	000.0
112	2001650	800100	000.0	000.0	000.0	000.0
113	2001650	800150	000.0	000.0	000.0	000.0
114	2001650	800200	000.0	000.0	000.0	000.0
115	2001650	800250	000.0	000.0	000.0	000.0
116	2001650	800300	000.0	000.0	000.0	000.0
117	2001650	800350	000.0	000.0	000.0	000.0
118	2001650	800400	000.0	000.0	000.0	000.0
119	2001650	800450	000.0	000.0	000.0	000.0
120	2001700	798850	000.0	000.0	000.0	000.0
121	2001700	798700	000.0	000.0	000.0	000.0
122	2001700	798750	000.0	000.0	000.0	000.0
123	2001700	798800	000.0	000.0	000.0	000.0
124	2001700	798850	000.0	000.0	000.0	000.0
125	2001700	798900	000.0	000.0	000.0	000.0
126	2001700	798950	000.0	000.0	000.0	000.0
127	2001700	800000	000.0	000.0	000.0	000.0
128	2001700	800050	000.0	000.0	000.0	000.0
129	2001700	800100	000.0	000.0	000.0	000.0
130	2001700	800150	000.0	000.0	000.0	000.0
131	2001700	800200	000.0	000.0	000.0	000.0
132	2001700	800250	000.0	000.0	000.0	000.0
133	2001700	800300	000.0	000.0	000.0	000.0
134	2001700	800350	000.0	000.0	000.0	000.0
135	2001700	800400	000.0	000.0	000.0	000.0
136	2001700	800450	000.0	000.0	000.0	000.0
137	2001750	798850	000.0	000.0	000.0	000.0
138	2001750	798750	000.0	000.0	000.0	000.0
139	2001750	798750	000.0	000.0	000.0	000.0
140	2001750	798850	000.0	000.0	000.0	000.0
141	2001750	798850	000.0	000.0	000.0	000.0
142	2001750	798850	000.0	000.0	000.0	000.0
143	2001750	798850	000.0	000.0	000.0	000.0
144	2001750	800000	000.0	000.0	000.0	000.0
145	2001750	800050	000.0	000.0	000.0	000.0
146	2001750	800100	000.0	000.0	000.0	000.0
147	2001750	800150	000.0	000.0	000.0	000.0
148	2001750	800200	000.0	000.0	000.0	000.0
149	2001750	800250	000.0	000.0	000.0	000.0
150	2001750	800300	000.0	000.0	000.0	000.0
151	2001750	800350	000.0	000.0	000.0	000.0
152	2001750	800400	000.0	000.0	000.0	000.0
153	2001750	800450	000.0	000.0	000.0	000.0
154	2001800	798850	000.0	000.0	000.0	000.0
155	2001800	798700	000.0	000.0	000.0	000.0
156	2001800	798750	000.0	000.0	000.0	000.0
157	2001800	798800	000.0	000.0	000.0	000.0
158	2001800	798850	000.0	000.0	000.0	000.0
159	2001800	798900	000.0	000.0	000.0	000.0
160	2001800	798950	000.0	000.0	000.0	000.0
161	2001800	800000	000.0	000.0	000.0	000.0
162	2001800	800050	000.0	000.0	000.0	000.0
163	2001800	800100	000.0	000.0	000.0	000.0
164	2001800	800150	000.0	000.0	000.0	000.0
165	2001800	800200	000.0	000.0	000.0	000.0
166	2001800	800250	000.0	000.0	000.0	000.0
167	2001800	800300	000.0	000.0	000.0	000.0
168	2001800	800350	000.0	000.0	000.0	000.0
169	2001800	800400	000.0	000.0	000.0	000.0
170	2001800	800450	000.0	000.0	000.0	000.0
171	2001850	798850	000.0	000.0	000.0	000.0
172	2001850	798700	000.0	000.0	000.0	000.0
173	2001850	798750	000.0	000.0	000.0	000.0
174	2001850	798800	000.0	000.0	000.0	000.0
175	2001850	798850	000.0	000.0	000.0	000.0
176	2001850	798900	000.0	000.0	000.0	000.0
177	2001850	798950	000.0	000.0	000.0	000.0
178	2001850	800000	000.0	000.0	000.0	000.0
179	2001850	800050	000.0	000.0	000.0	000.0
180	2001850	800100	000.0	000.0	000.0	000.0
181	2001850	800150	000.0	000.0	000.0	000.0
182	2001850	800200	000.0	000.0	000.0	000.0
183	2001850	800250	000.0	000.0	000.0	000.0
184	2001850	800300	000.0	000.0	000.0	000.0
185	2001850	800350	000.0	000.0	000.0	000.0
186	2001850	800400	000.0	000.0	000.0	000.0
187	2001850	800450	000.0	000.0	000.0	000.0
188	2001900	798850	000.0	000.0	000.0	000.0
189	2001900	798700	000.0	000.0	000.0	000.0
190	2001900	798750	000.0	000.0	000.0	000.0

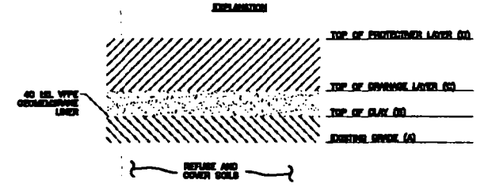
AS-BUILT ELEVATIONS

191	2001900	798800	000.0	000.0	000.0	000.0
192	2001900	798850	000.0	000.0	000.0	000.0
193	2001900	798900	000.0	000.0	000.0	000.0
194	2001900	798950	000.0	000.0	000.0	000.0
195	2001900	800000	000.0	000.0	000.0	000.0
196	2001900	800050	000.0	000.0	000.0	000.0
197	2001900	800100	000.0	000.0	000.0	000.0
198	2001900	800150	000.0	000.0	000.0	000.0
199	2001900	800200	000.0	000.0	000.0	000.0
200	2001900	800250	000.0	000.0	000.0	000.0
201	2001900	800300	000.0	000.0	000.0	000.0
202	2001900	800350	000.0	000.0	000.0	000.0
203	2001900	800400	000.0	000.0	000.0	000.0
204	2001900	800450	000.0	000.0	000.0	000.0
205	2001950	798800	000.0	000.0	000.0	000.0
206	2001950	798850	000.0	000.0	000.0	000.0
207	2001950	798700	000.0	000.0	000.0	000.0
208	2001950	798750	000.0	000.0	000.0	000.0
209	2001950	798800	000.0	000.0	000.0	000.0
210	2001950	798850	000.0	000.0	000.0	000.0
211	2001950	798900	000.0	000.0	000.0	000.0
212	2001950	798950	000.0	000.0	000.0	000.0
213	2001950	800000	000.0	000.0	000.0	000.0
214	2001950	800050	000.0	000.0	000.0	000.0
215	2001950	800100	000.0	000.0	000.0	000.0
216	2001950	800150	000.0	000.0	000.0	000.0
217	2001950	800200	000.0	000.0	000.0	000.0
218	2001950	800250	000.0	000.0	000.0	000.0
219	2001950	800300	000.0	000.0	000.0	000.0
220	2001950	800350	000.0	000.0	000.0	000.0
221	2001950	800400	000.0	000.0	000.0	000.0
222	2001950	800450	000.0	000.0	000.0	000.0
223	2001950	798900	000.0	000.0	000.0	000.0
224	2002000	798850	000.0	000.0	000.0	000.0
225	2002000	798700	000.0	000.0	000.0	000.0
226	2002000	798750	000.0	000.0	000.0	000.0
227	2002000	798800	000.0	000.0	000.0	000.0
228	2002000	798850	000.0	000.0	000.0	000.0
229	2002000	798900	000.0	000.0	000.0	000.0
230	2002000	798950	000.0	000.0	000.0	000.0
231	2002000	800000	000.0	000.0	000.0	000.0
232	2002000	800050	000.0	000.0	000.0	000.0
233	2002000	800100	000.0	000.0	000.0	000.0
234	2002000	800150	000.0	000.0	000.0	000.0
235	2002000	800200	000.0	000.0	000.0	000.0
236	2002000	800250	000.0	000.0	000.0	000.0
237	2002000	800300	000.0	000.0	000.0	000.0
238	2002000	800350	000.0	000.0	000.0	000.0
239	2002000	800400	000.0	000.0	000.0	000.0
240	2002000	800450	000.0	000.0	000.0	000.0
241	2002050	798800	000.0	000.0	000.0	000.0
242	2002050	798850	000.0	000.0	000.0	000.0
243	2002050	798700	000.0	000.0	000.0	000.0
244	2002050	798750	000.0	000.0	000.0	000.0
245	2002050	798800	000.0	000.0	000.0	000.0
246	2002050	798850	000.0	000.0	000.0	000.0
247	2002050	798900	000.0	000.0	000.0	000.0
248	2002050	798950	000.0	000.0	000.0	000.0
249	2002050	800000	000.0	000.0	000.0	000.0
250	2002050	800050	000.0	000.0	000.0	000.0
251	2002050	800100	000.0	000.0	000.0	000.0
252	2002050	800150	000.0	000.0	000.0	000.0
253	2002050	800200	000.0	000.0	000.0	000.0
254	2002050	800250	000.0	000.0	000.0	000.0
255	2002050	800300	000.0	000.0	000.0	000.0
256	2002050	800350	000.0	000.0	000.0	000.0
257	2002050	800400	000.0	000.0	000.0	000.0
258	2002050	800450	000.0	000.0	000.0	000.0
259	2002100	798850	000.0	000.0	000.0	000.0
260	2002100	798700	000.0	000.0	000.0	000.0
261	2002100	798750	000.0	000.0	000.0	000.0
262	2002100	798800	000.0	000.0	000.0	000.0
263	2002100	798850	000.0	000.0	000.0	000.0
264	2002100	798900	000.0	000.0	000.0	000.0
265	2002100	798950	000.0	000.0	000.0	000.0
266	2002100	800000	000.0	000.0	000.0	000.0
267	2002100	800050	000.0	000.0	000.0	000.0
268	2002100	800100	000.0	000.0	000.0	000.0
269	2002100	800150	000.0	000.0	000.0	000.0
270	2002100	800200	000.0	000.0	000.0	000.0
271	2002100	800250	000.0	000.0	000.0	000.0
272	2002100	800300	000.0	000.0	000.0	000.0
273	2002100	800350	000.0	000.0	000.0	000.0
274	2002100	800400	000.0	000.0	000.0	000.0
275	2002100	800450	000.0	000.0	000.0	000.0

AS-BUILT ELEVATIONS

276	2002150	798850	000.0	000.0	000.0	000.0
277	2002150	798700	000.0	000.0	000.0	000.0
278	2002150	798750	000.0	000.0	000.0	000.0
279	2002150	798800	000.0	000.0	000.0	000.0
280	2002150	798850	000.0	000.0	000.0	000.0
281	2002150	798900	000.0	000.0	000.0	000.0
282	2002150	798950	000.0	000.0	000.0	000.0
283	2002150	800000	000.0	000.0	000.0	000.0
284	2002150	800050	000.0	000.0	000.0	000.0
285	2002150	800100	000.0	000.0	000.0	000.0
286	2002150	800150	000.0	000.0	000.0	000.0
287	2002150	800200	000.0	000.0	000.0	000.0
288	2002150	800250	000.0	000.0	000.0	000.0
289	2002150	800300	000.0	000.0	000.0	000.0
290	2002150	800350	000.0	000.0	000.0	000.0
291	2002150	800400	000.0	000.0	000.0	000.0
292	2002150	800450	000.0	000.0	000.0	000.0
293	2002200	798700	000.0	000.0	000.0	000.0
294	2002200	798750	000.0	000.0	000.0	000.0
295	2002200	798800	000.0	000.0	000.0	000.0
296	2002200	798850	000.0	000.0	000.0	000.0
297	2002200	798900	000.0	000.0	000.0	000.0
298	2002200	798950	000.0	000.0	000.0	000.0
299	2002200	800000	000.0	000.0	000.0	000.0
300	2002200	800050	000.0	000.0	000.0	000.0
301	2002200	800100	000.0	000.0	000.0	000.0
302	2002200	800150	000.0	000.0	000.0	000.0
303	2002200	800200	000.0	000.0	000.0	000.0
304	2002200	800250	000.0	000.0	000.0	000.0
305	2002200	800300	000.0	000.0	000.0	000.0
306	2002200	800350	000.0	000.0	000.0	000.0
307	2002200	800400	000.0	000.0	000.0	000.0
308	2002200	800450	000.0	000.0	000.0	000.0
309	2002250	798700	000.0	000.0	000.0	000.0
310	2002250	798750	000.0	000.0	000.0	000.0
311	2002250	798800	000.0	000.0	000.0	000.0
312	2002250	798850	000.0	000.0	000.0	000.0
313	2002250	798900	000.0	000.0	000.0	000.0
314	2002250	798950	000.0	000.0	000.0	000.0
315	2002250	800000	000.0	000.0	000.0	000.0
316	2002250	800050	000.0	000.0	000.0	000.0
317	2002250	800100	000.0	000.0	000.0	000.0
318	2002250	800150	000.0	000.0	000.0	000.0
319	2002250	800200	000.0	000.0	000.0	000.0
320	2002250	800250	000.0	000.0	000.0	000.0
321	2002250	800300	000.0	000.0	000.0	000.0
322	2002250	800350	000.0	000.0	000.0	000.0
323	2002250	800400	000.0	000.0	000.0	000.0
324	2002250	800450	000.0	000.0	000.0	000.0
325	2002300	798800	000.0	000.0	000.0	000.0
326	2002300	798850	000.0	000.0	000.0	000.0
327	2002300	800000	000.0	000.0	000.0	000.0
328	2002300	800050	000.0	000.0	000.0	000.0
329	2002300	800100	000.0	000.0	000.0	000.0
330	2002300	800150	000.0	000.0	000.0	000.0
331	2002300	800200	000.0	000.0	000.0	000.0
332	2002300	800250	000.0	000.0	000.0	000.0
333	2002300	800300	000.0	000.0	000.0	000.0
334	2002300	800350	000.0	000.0	000.0	000.0
335	2002300	800400	000.0	000.0	000.0	000.0
336	2002300	800450	000.0	000.0	000.0	000.0
337	2002350	800250	000.0	000.0	000.0	000.0
338	2002350	800400	000.0	000.0	000.0	000.0
339	2002350	800450	000.0	000.0	000.0	000.0

EXPLANATION



NOTE:

1. AS-BUILT FINAL COVER ELEVATIONS TO BE RECORDED UPON COMPLETION OF CONSTRUCTION. ALL FINAL COVER COMPONENTS ARE SUBJECT TO MINIMUM THICKNESS REQUIREMENTS.

FROM EMCON, (1997)

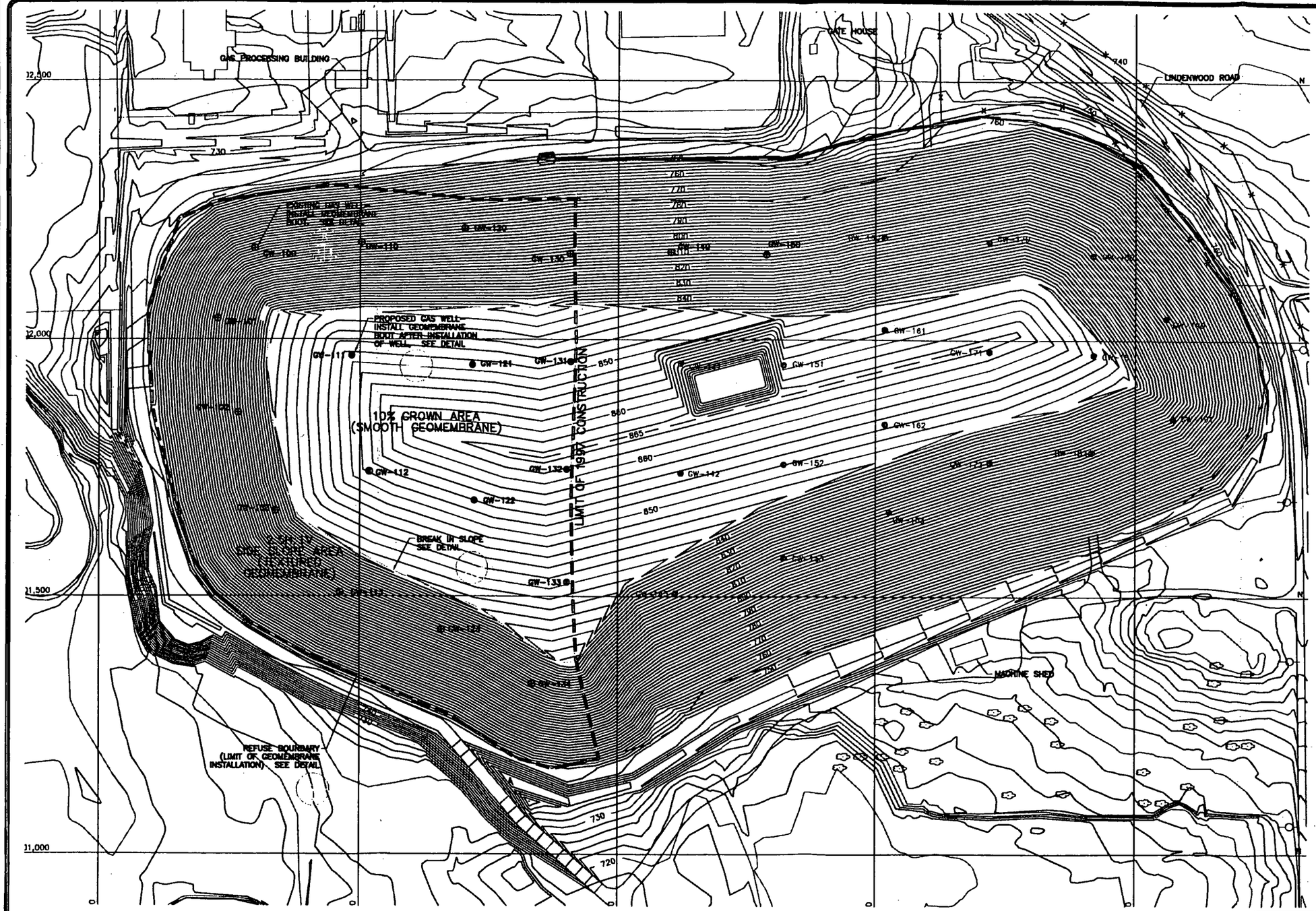
TITLE: SURVEY INFORMATION

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB
DRAFTED:	SDL
FILE:	N021008A.DWG
DATE:	6-10-99

FIGURE: 3


GAS PROCESSING BUILDING
GATE HOUSE
LINDENWOOD ROAD
EXISTING GAS WELL INSTALL GEOMEMBRANE BOOT, SEE DETAIL
PROPOSED GAS WELL INSTALL GEOMEMBRANE BOOT AFTER INSTALLATION OF WELL, SEE DETAIL
10% GROWN AREA (SMOOTH GEOMEMBRANE)
2.5H:1V SIDE SLOPE AREA (TEXTURED GEOMEMBRANE)
BREAK IN SLOPE SEE DETAIL
REFUSE BOUNDARY (LIMIT OF GEOMEMBRANE INSTALLATION) SEE DETAIL
MACHINE SHED
LIMIT OF 1997 CONSTRUCTION
GW-110
GW-112
GW-122
GW-124
GW-130
GW-131
GW-132
GW-134
GW-142
GW-151
GW-152
GW-161
GW-162
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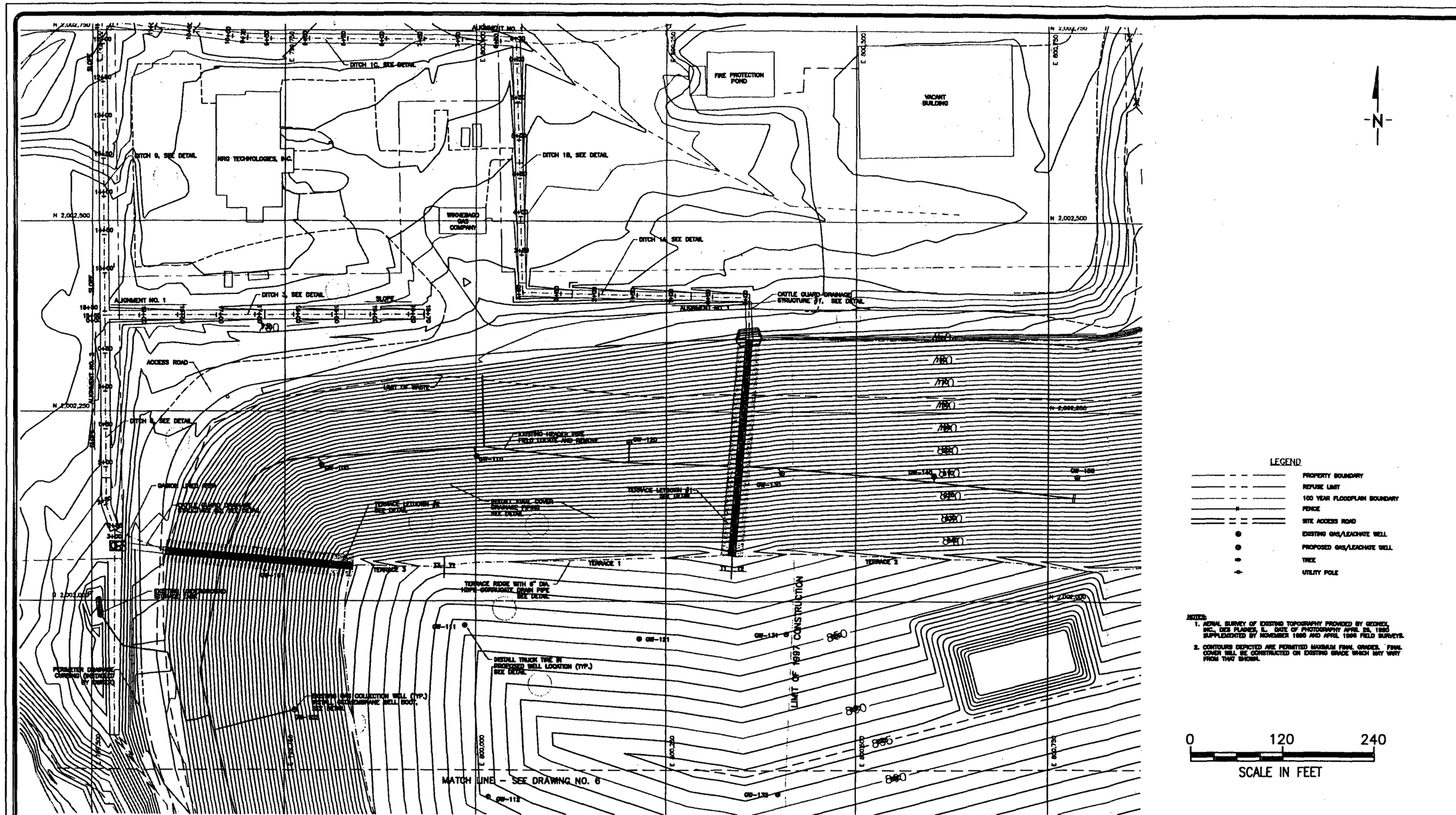
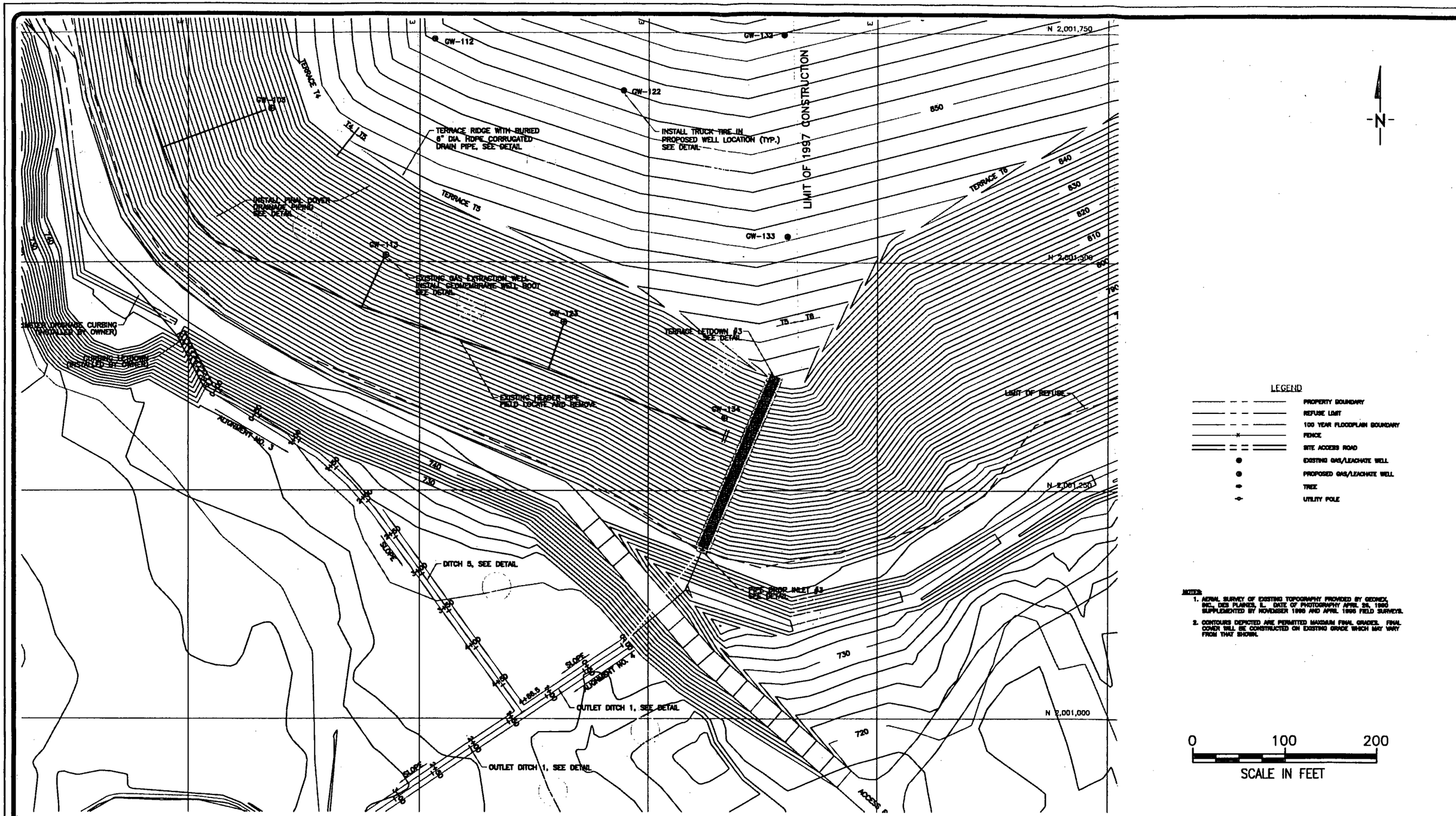
GW-229
GW-230
GW-231



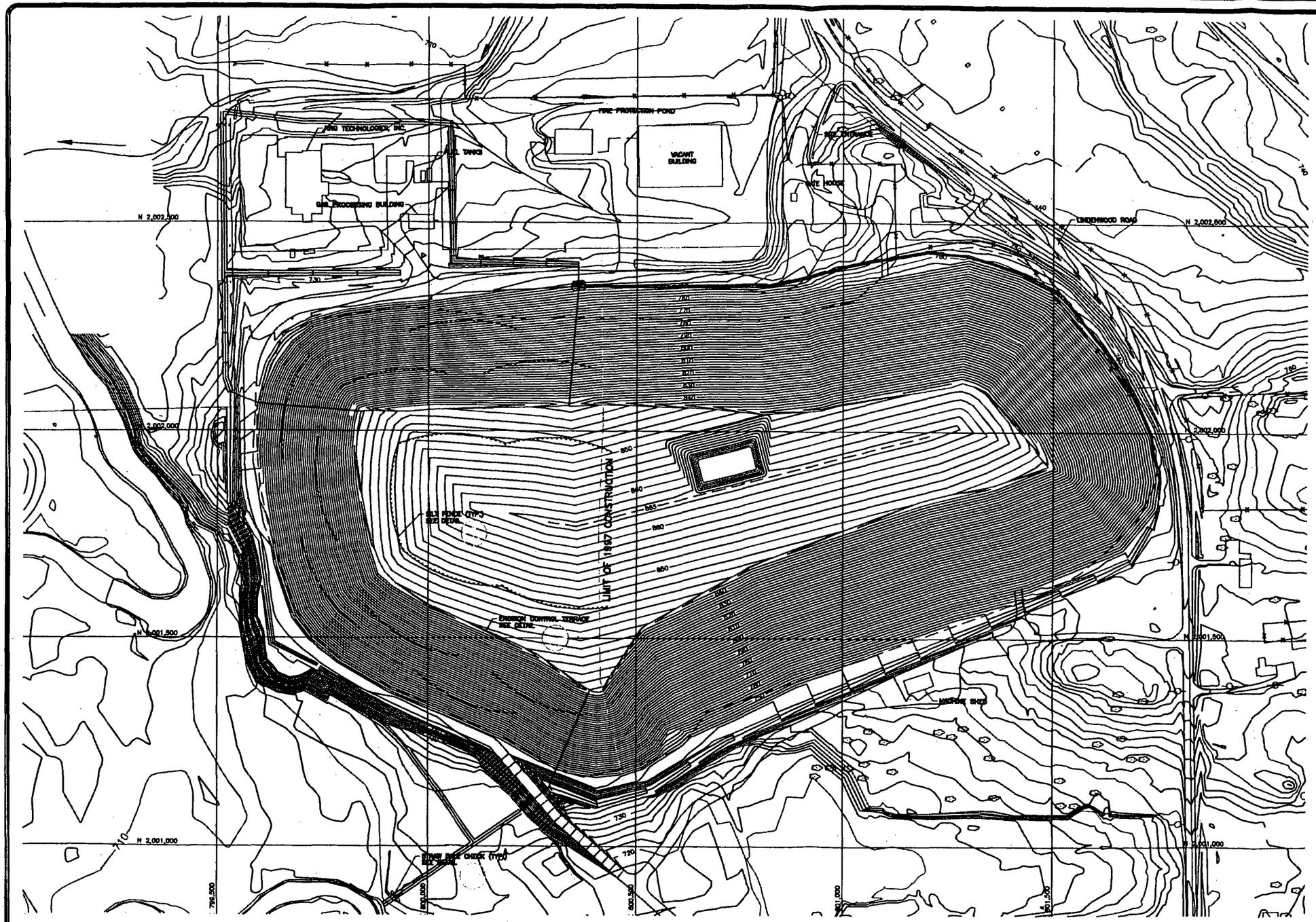
FROM EMCON, (1997)

TITLE: GENERAL SITE FEATURES, NORTHWEST SECTION			
LOCATION: Western Portion – Pagel Landfill Rockford, Winnebago County, Illinois			
HSI GEOTRANS A TETRA TECH COMPANY	CHECKED:	DB	FIGURE: 5
	DRAFTED:	SDL	
	FILE:	N021010A.DWG	
	DATE:	6-10-99	



FROM EMCON, (1997)

TITLE: GENERAL SITE FEATURES, SOUTHWEST SECTION			
LOCATION: Western Portion – Pagel Landfill Rockford, Winnebago County, Illinois			
HSI GEOTRANS A TETRA TECH COMPANY	CHECKED:	DB	FIGURE:
	DRAFTED:	SDL	6
	FILE:	N021011A.DWG	
	DATE:	6-10-99	



-N-

LEGEND

- PROPERTY BOUNDARY
- REFUSE LIMIT
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- SITE ACCESS ROAD
- EXISTING GAS/LEACHATE WELL
- PROPOSED GAS/LEACHATE WELL
- TREE
- UTILITY POLE
- STRAW BALE CHECK
- SILT FENCE

NOTES:

1. AERIAL SURVEY OF EXISTING TOPOGRAPHY PROVIDED BY GEOINDEX, INC. DES PLAINES, IL. DATE OF PHOTOGRAPHY APRIL 28, 1993 SUPPLEMENTED BY NOVEMBER 1995 AND APRIL 1996 FIELD SURVEYS.
2. CONTOURS DEPICTED ARE PERMITTED MAXIMUM FINAL GRADES. FINAL COVER WILL BE CONSTRUCTED ON EXISTING GRADE WHICH MAY VARY FROM THAT SHOWN.

0 250 500

SCALE IN FEET

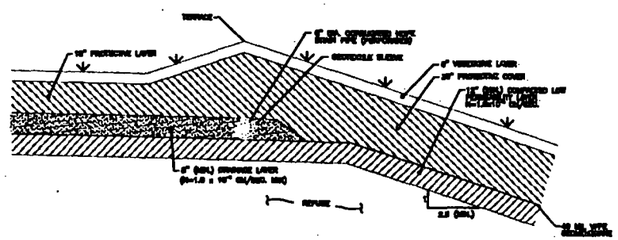
FROM EMCON, (1997)

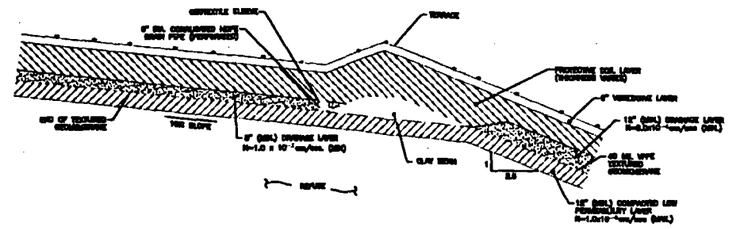
TITLE: EROSION CONTROL PLAN

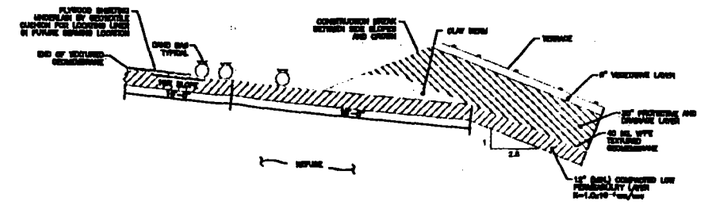
LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

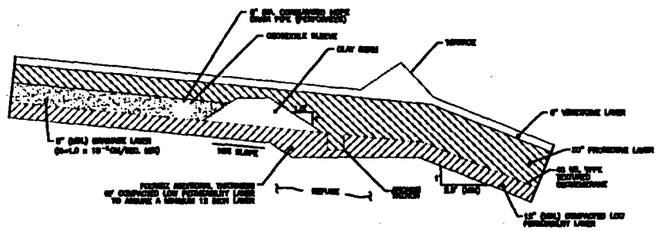
HSI GEOTRANS
A TETRA TECH COMPANY

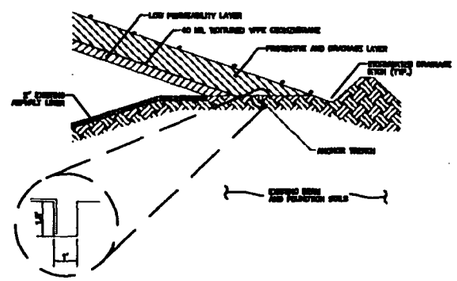
CHECKED:	DB	FIGURE: 7
DRAFTED:	SDL	
FILE:	N021012A.DWG	
DATE:	6-10-99	

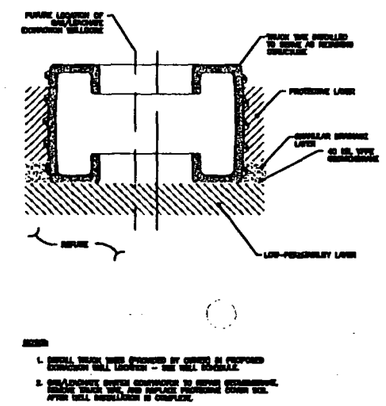


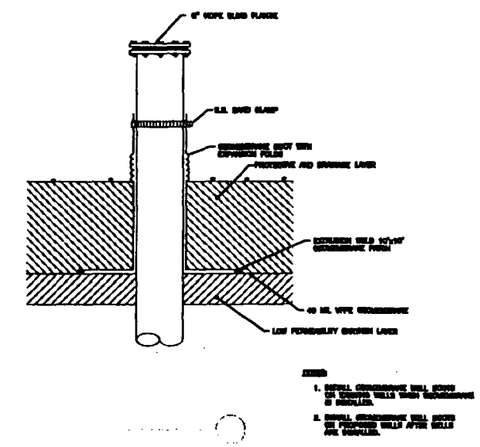


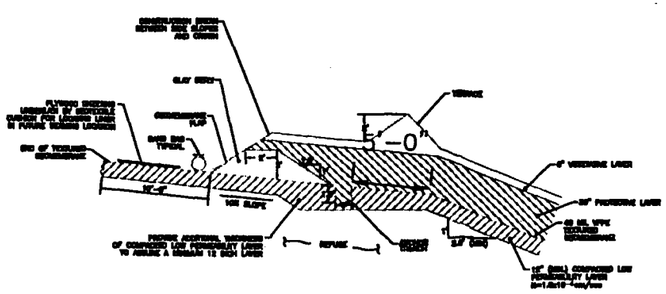












WELL SCHEDULE

GAS WELL	COORDINATES NORTH	EAST
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

(ALL DEPTHS MEASURED FROM GROUND ELEVATION)
[illegible] = DEPTH OF WELD PVC
[illegible] = DEPTH OF GRAVEL
[illegible] = DEPTH OF REFUSE

FROM EMCON, (1997)

TITLE:

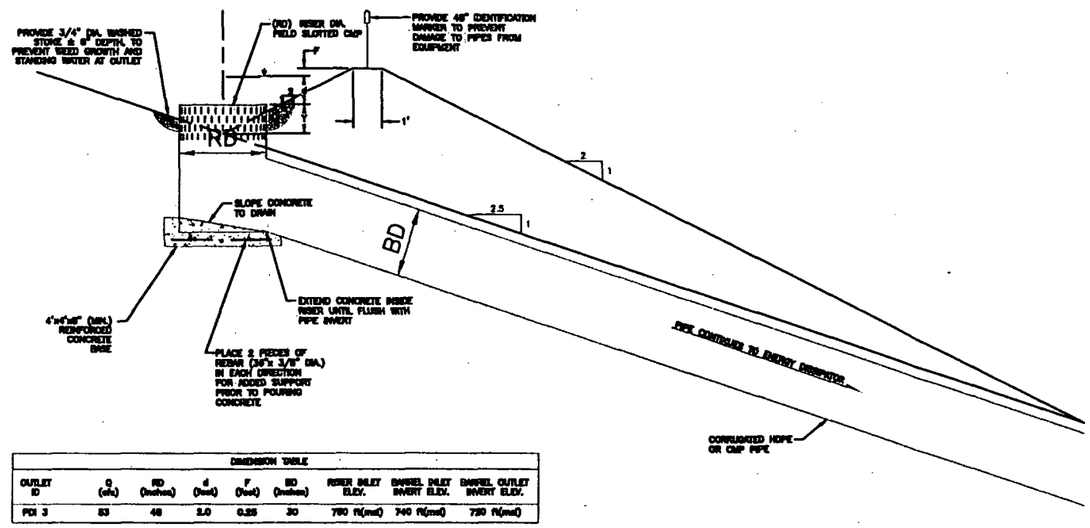
FINAL COVER DETAILS

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

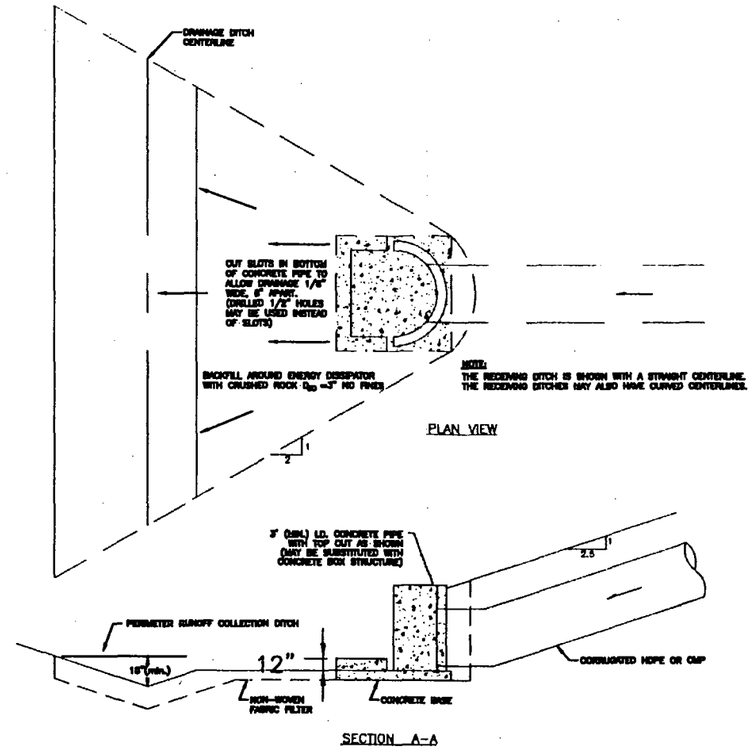
HSI GEOTRANS
A TETRA TECH COMPANY

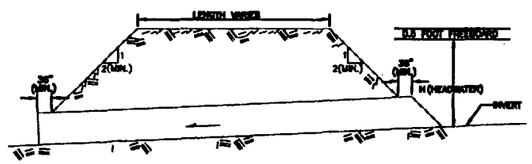
CHECKED:	DB
DRAFTED:	SDL
FILE:	N021013A.DWG
DATE:	6-10-99

FIGURE: 8



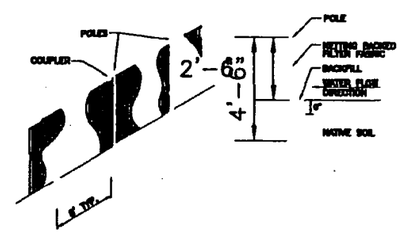
DIMENSION TABLE								
OUTLET ID	Q (cfs)	RD (inches)	d (feet)	F (feet)	BD (inches)	RISER INLET ELEV.	BARREL INLET INVERT ELEV.	BARREL OUTLET INVERT ELEV.
PDI 3	83	48	2.0	0.25	30	750 ft(msl)	740 ft(msl)	730 ft(msl)

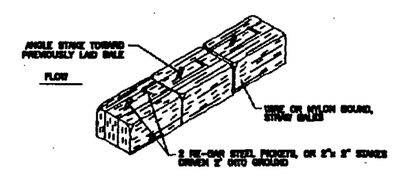


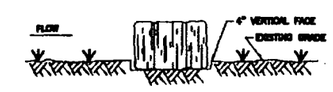


NOTES:

1. CULVERTS WILL BE INSTALLED AS NECESSARY TO PROVIDE VEHICULAR ACCESS TO THE FACILITY.
2. MINIMUM SLOPE OF CULVERTS SHALL BE THE SAME AS THE DITCHES ON WHICH THEY ARE PLACED.
3. RIPRAP OR OTHER SUITABLE EROSION CONTROL MEASURES SHALL BE UTILIZED AROUND THE CULVERT'S INLET AND OUTLET AS NECESSARY TO PREVENT SCOURING.







EMBEDDING VIEW

SECTION VIEW

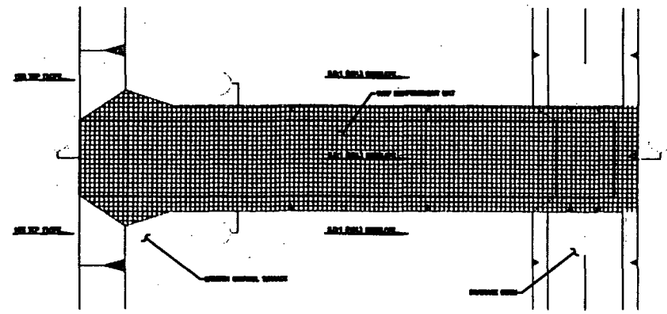
FROM EMCON, (1997)

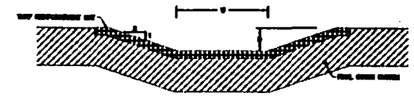
TITLE: STORMWATER DRAINAGE DETAILS

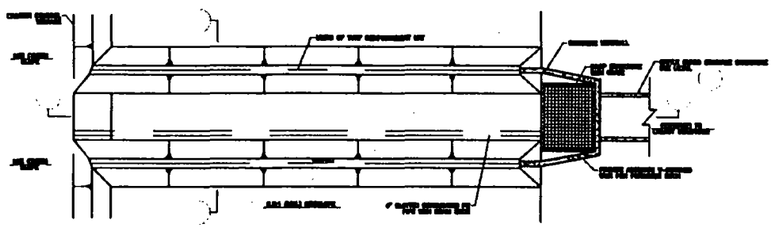
LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

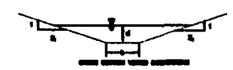
HSI GEOTRANS
A TETRA TECH COMPANY

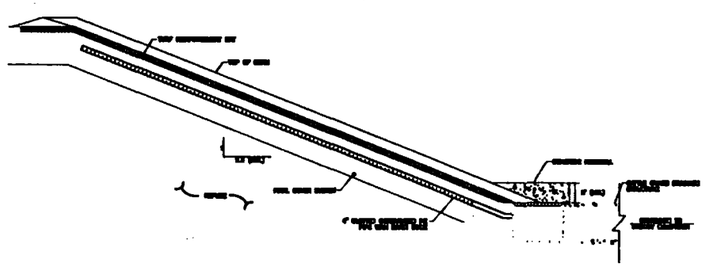
CHECKED:	DB	FIGURE:
DRAFTED:	SDL	9
FILE:	N021014A.DWG	
DATE:	6-10-99	

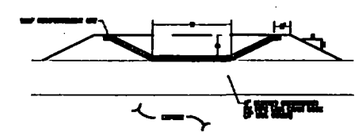


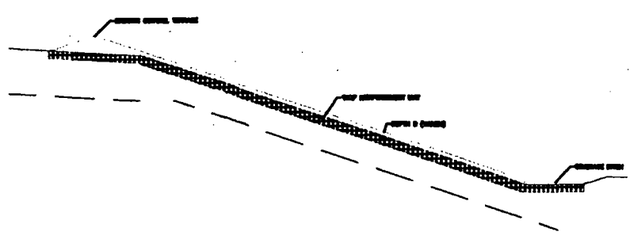












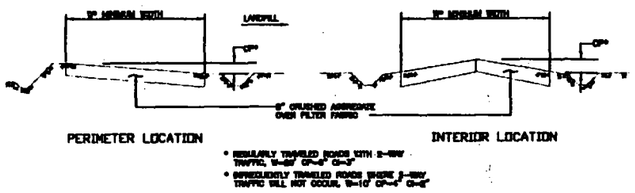
FROM EMCON, (1997)

TITLE: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

LOCATION: STORMWATER DRAINAGE DETAILS

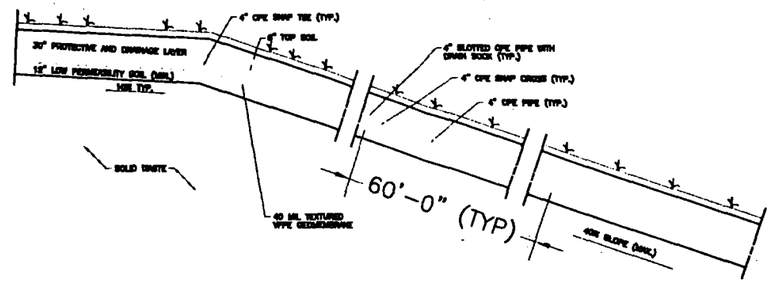
HSI GEOTRANS
A TETRA TECH COMPANY

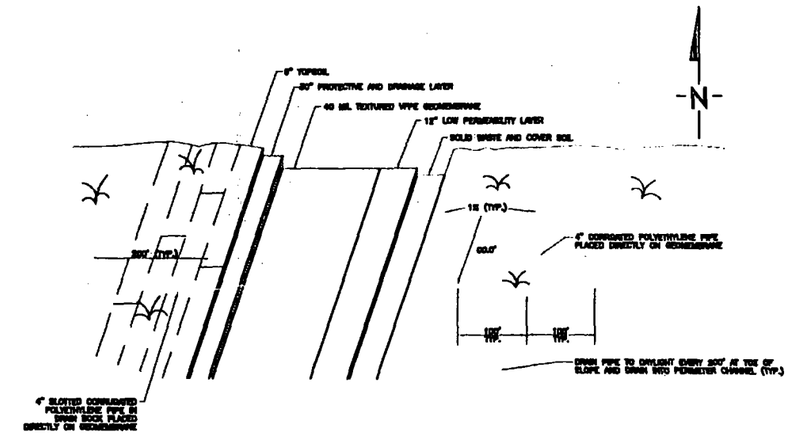
CHECKED:	DB	FIGURE:
DRAFTED:	SDL	10
FILE:	N021015A.DWG	
DATE:	6-10-99	



NOTES:

1. ROADWAYS SHALL NOT BE CONSTRUCTED AT GRADES STEEPER THAN 8% UNLESS THE LENGTH IS SHORT (CONTROL) OR OTHERWISE APPROVED BY AN ILLINOIS REGISTERED PROFESSIONAL ENGINEER.
2. WHERE ROADWAYS ARE ON EMBANKMENTS AND/OR ADJACENT TO SIDESLOPES STEEPER THAN 3H:1V AND EXCEEDING 5 FEET IN DEPTH, GUARDRAIL OR OTHER SUITABLE SAFETY BARRIER(S) SHALL BE PROVIDED AS APPROPRIATE.





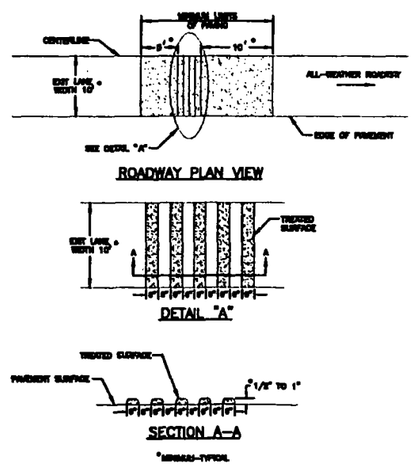
NOTES:

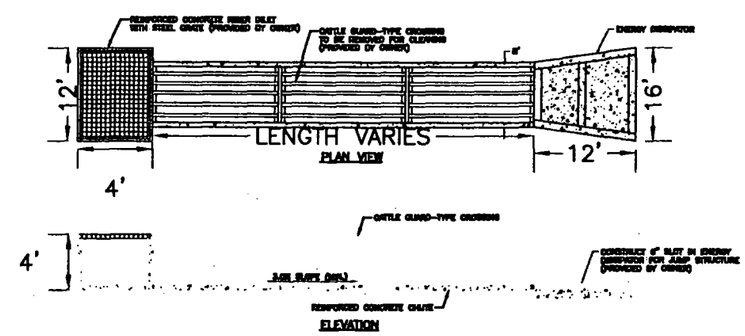
1. EROSION CONTROL BLANKET IS TO BE PLACED WHERE NEEDED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
2. WHERE PERIMETER CHANNEL DOES NOT EXIST AT THE TOE OF SLOPE, A HORIZONTAL 4" CORRUGATED POLYETHYLENE PIPE SHALL BE USED TO DRAIN INTO VERTICAL LEACHATE STRUCTURES.

NOTES:

1. THE SURFACE TO BE TREATED SHALL BE THOROUGHLY CLEANED WITH BROOMS AND AN INDUSTRIAL TYPE DEGREASER USED WITH WATER.
2. AFTER THE SURFACE HAS BEEN CLEANED AND DRIED, A TWO-COMPONENT EPOXY SHALL BE PLACED ON THE SURFACE TO BE TREATED AND BUILT-UP.
3. AGGREGATE SHALL BE PLACED ON TOP OF THE EPOXY BEDS AND SUFFICIENT AGGREGATE/EPOXY USED TO BUILD-UP THE TREATED SURFACE TO THE HEIGHT SHOWN.
4. THE EPOXY SHALL MEET THE REQUIREMENTS OF ASTM-C-881 TYPE III, GRADE 2, CLASS B TEMPERATURE RANGE AND SHALL NOT BE APPLIED UNLESS AIR TEMPERATURE IS AT LEAST 55 F.
5. THE AGGREGATE USED SHALL BE A 1/4" - 1/8" DIAMETER ROCK AND SHALL BE SURFACE DRY (NO FREE MOISTURE). IT SHALL BE GRADED AS FOLLOWS:

% PASSING	SIEVE SIZE
95 - 100	1/2"
85 - 95	3/8"
0 - 5	#4





DIMENSION TABLE	
STRUCTURE NO.	LENGTH (ft)
1	45
2	35

NOTES:

1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR DRAINAGE STRUCTURES FOR APPROVAL BY OWNER BEFORE DRAINAGE CONSTRUCTION.
2. ALL REINFORCED CONCRETE WALLS SHALL HAVE A MINIMUM THICKNESS OF 6".

FROM EMCON, (1997)

TITLE: MISCELLANEOUS DETAILS

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

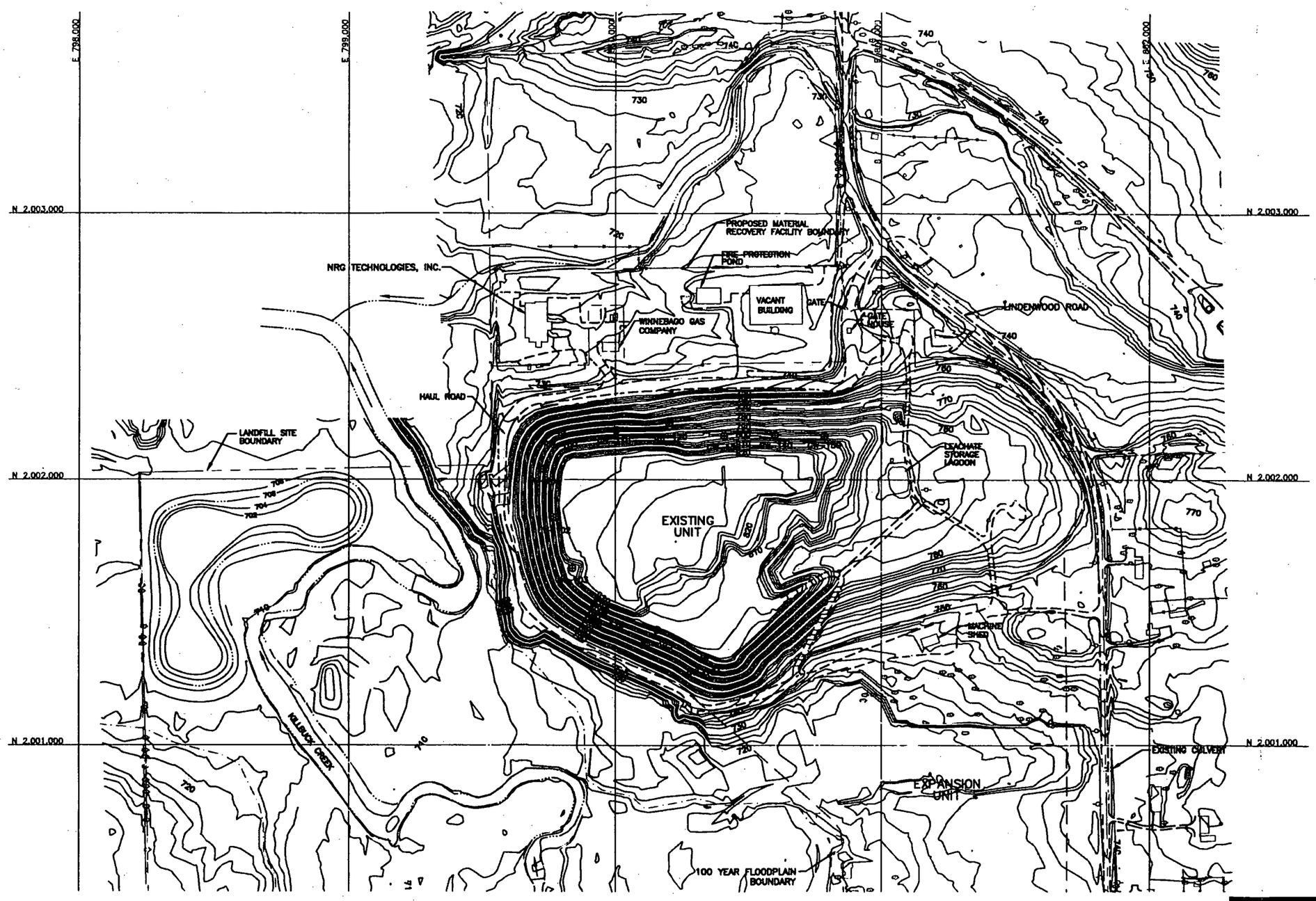
HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB
DRAFTED:	SDL
FILE:	N021016A.DWG
DATE:	6-10-99

FIGURE: 11

APPENDIX B

LEACHATE/GAS EXTRACTION



N

LEGEND

- PROPERTY BOUNDARY
- REFUSE LIMIT
- 100 YEAR FLOODPLAIN BOUNDARY
- 12" GAS/LEACHATE HEADER TO BE CONSTRUCTED
- 12" FUTURE GAS/LEACHATE HEADER
- FENCE
- SITE ACCESS ROAD
- EXISTING GAS/LEACHATE WELL
- PROPOSED GAS/LEACHATE WELL
- CONDENSATE SEPARATOR
- UNDERGROUND CONTROL VALVE
- HEADER ACCESS RISER
- REDUCER
- FLANGE/BLIND FLANGE

NOTES:
1. AERIAL SURVEY OF EXISTING TOPOGRAPHY PROVIDED BY GEDNEX, INC., DES PLAINES, IL. DATE OF PHOTOGRAPHY APRIL 28, 1990 SUPPLEMENTED BY NOVEMBER 1993 AND APRIL 1995 FIELD SURVEYS.
2. BENCH MARK GM-1: GPS DISK MOUNTED ON ROD IN GROUND, ELEV. 731.81

0 400 800
SCALE IN FEET

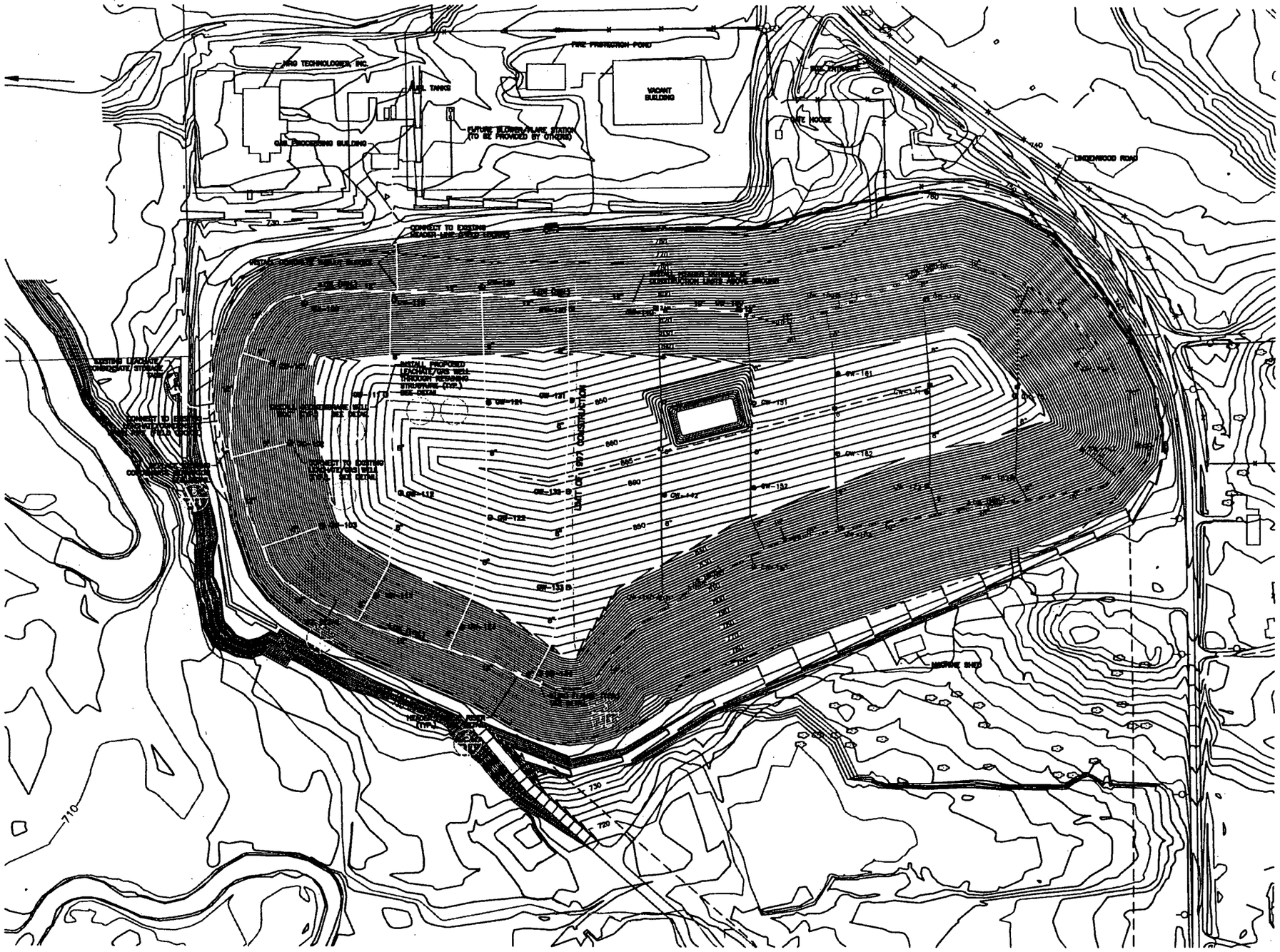
FROM EMCON, (1997)

TITLE: EXISTING CONDITIONS

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB	FIGURE:
DRAFTED:	SDL	1
FILE:	N021021A.DWG	
DATE:	6-11-99	



N

LEGEND

- PROPERTY BOUNDARY
- REFUSE LIMIT
- 100 YEAR FLOODPLAIN BOUNDARY
- GAS/LEACHATE HEADER TO BE CONSTRUCTED
- FUTURE GAS/LEACHATE HEADER
- FENCE
- SITE ACCESS ROAD
- EXISTING GAS/LEACHATE WELL
- PROPOSED GAS/LEACHATE WELL
- CONDENSATE SEPARATOR
- UNDERGROUND CONTROL VALVE
- HEADER ACCESS RISER
- REDUCER
- FLANGE/BLIND FLANGE

WELL SCHEDULE

GAS WELL	COORDINATES NORTH	EAST	D_s	D_o	D_R
GW-111	2001968	799884	20	134	136
GW-112	2001735	800017	20	139	141
GW-121	2001950	800217	20	132	134
GW-122	2001677	800221	20	137	139
GW-131	2001957	800408	20	131	133
GW-132	2001747	800400	20	146	148
GW-133	2001529	800401	20	124	126

(ALL DEPTHS NOTED FROM GROUND ELEVATION)
D_s = DEPTH OF SOLID PIPE
D_o = DEPTH OF BORING
D_R = DEPTH OF REFUSE

NOTES:

1. AERIAL SURVEY OF EXISTING TOPOGRAPHY PROVIDED BY GEOREX, INC., DES PLAINES, IL. DATE OF PHOTOGRAPHY APRIL 26, 1990 SUPPLEMENTED BY NOVEMBER 1995 AND APRIL 1996 FIELD SURVEYS.
2. GROUND ELEVATIONS IN WELL SCHEDULE ARE BASED ON PERMITTED FINAL GRADES. ACTUAL CONDITIONS MAY VARY.
3. DEPTH OF REFUSE IS APPROXIMATE. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO AVOID DAMAGE TO THE ASPHALT LINER.

0 250 500
SCALE IN FEET

FROM EMCON, (1997)

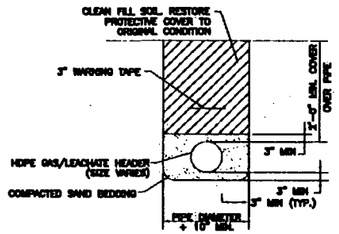
TITLE: LEACHATE/GAS EXTRACTION SYSTEM

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

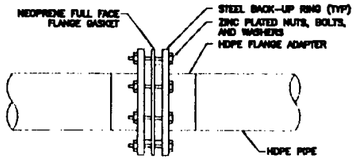
HSI GEOTRANS
A TETRA TECH COMPANY

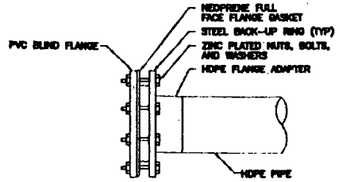
CHECKED:	DB
DRAFTED:	SDL
FILE:	N021018A.DWG
DATE:	6-11-99

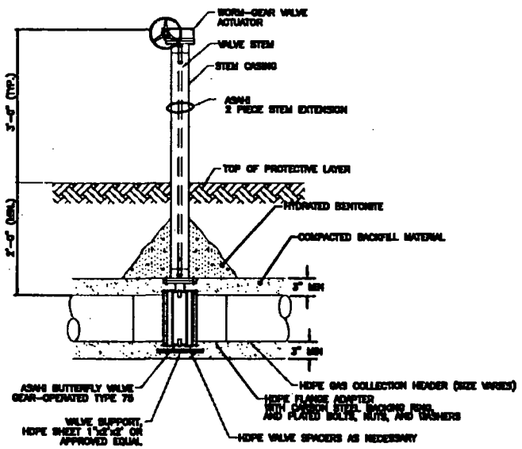
FIGURE: 2

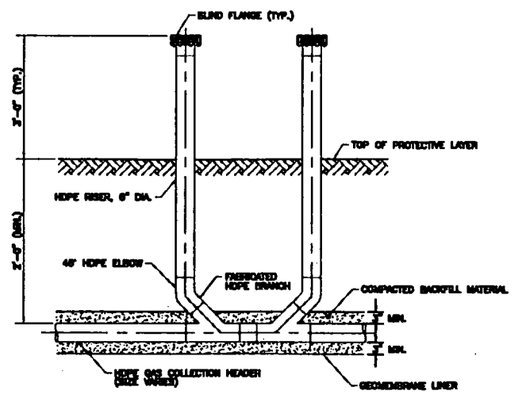


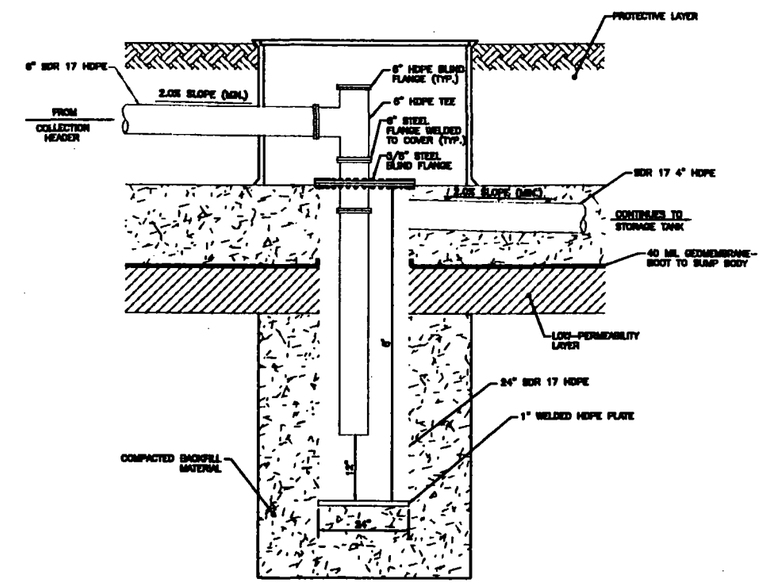
NOTE:
COMPACT SAND BEDDING AND BACKFILL WITH VIBRATORY PLATE OR EQUAL











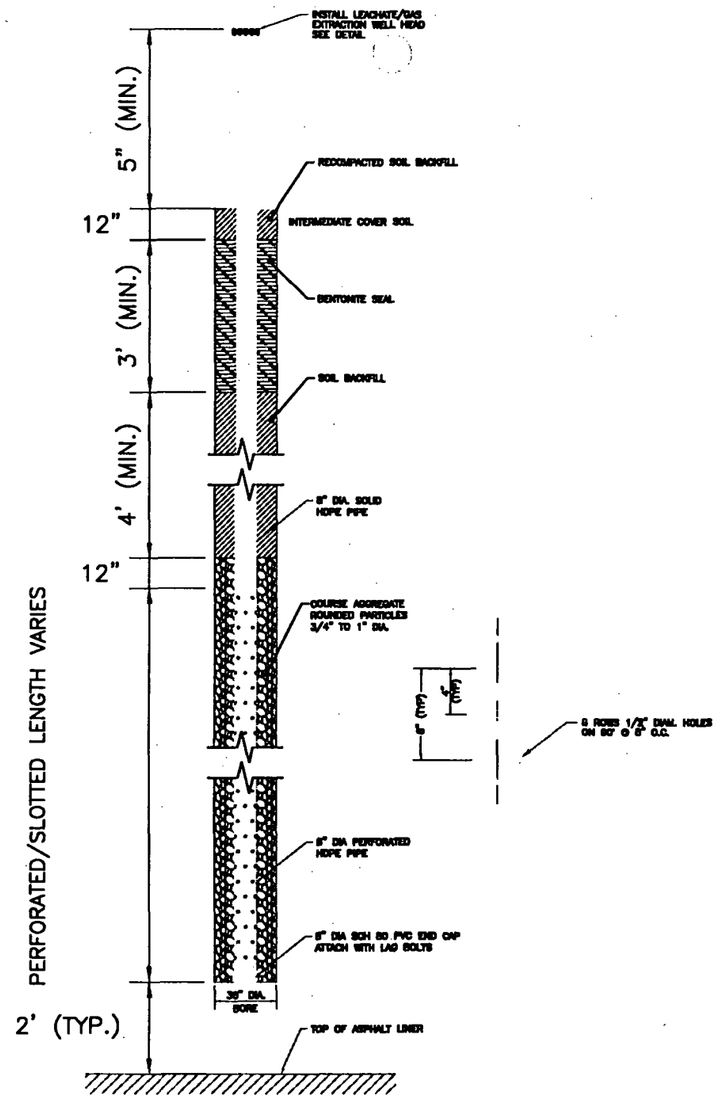
FROM EMCON, (1997)

TITLE:
LEACHATE/GAS EXTRACTION DETAILS

LOCATION: Western Portion – Pagel Landfill
Rockford, Winnebago County, Illinois

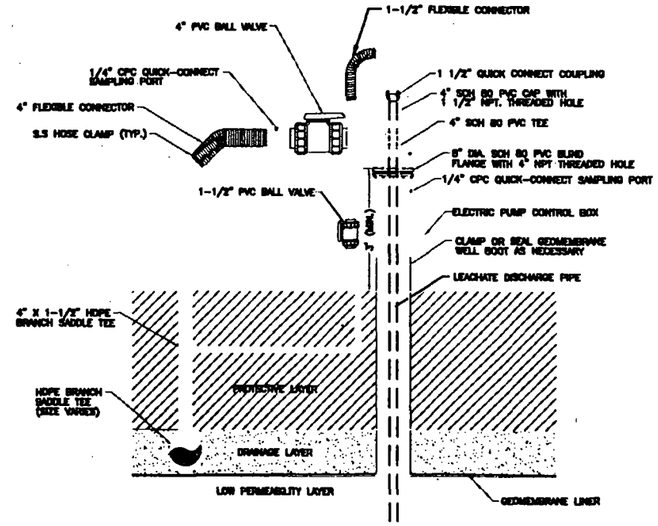
HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	DB	FIGURE:
DRAFTED:	SDL	3
FILE:	N021020A.DWG	
DATE:	6-11-99	



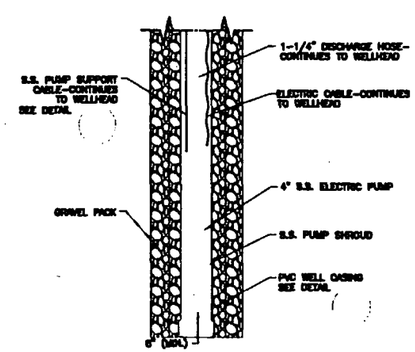
NOTES:

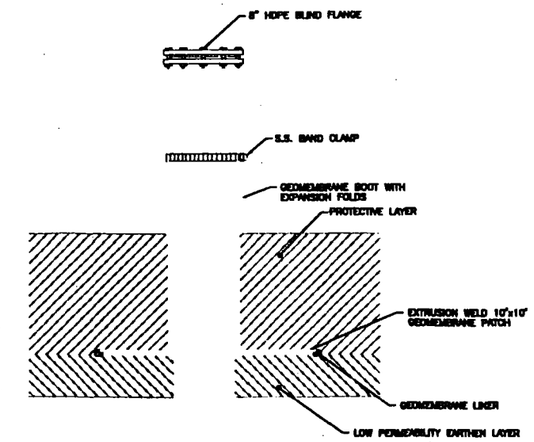
1. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT DAMAGE TO THE ASPHALT LINER. IF LINER DAMAGE IS SUSPECTED, A 3-FOOT LAYER OF BENTONITE PELLETS SHALL BE USED TO SEAL THE BOTTOM OF THE WELL BORE.

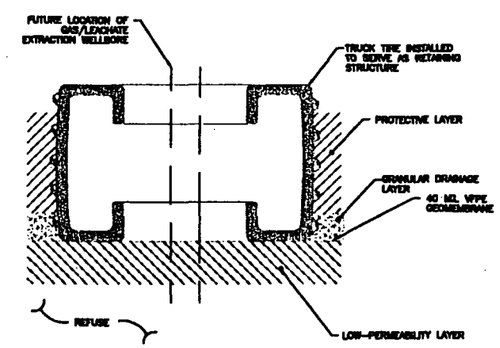


NOTES:

1. INSTALL EYE HOOK IN WELL CASING TO PUMP SUPPORT CABLE.
2. OFFSET 4" HDPE PIPE 12' FROM VERTICAL (AWAY FROM WELL) TO ALLOW FOR SETTLEMENT AND ROTATION.
3. FOR WELLS DOWNSLOPE OF HEADER, SUPPORT GAS PIPING WITH SOIL SUCH THAT CONDENSATE DRAINS BACK TO WELLHEAD.







NOTES:

1. INSTALL TRUCK TIRES (PROVIDED BY OWNER) IN PROPOSED EXTRACTION WELL LOCATION – SEE WELL SCHEDULE.
2. GAS/LEACHATE SYSTEM CONTRACTOR TO REPAIR GEOMEMBRANE. REMOVE TRUCK TIRE, AND REPLACE PROTECTIVE COVER SOIL AFTER WELL INSTALLATION IS COMPLETE.

FROM EMCON,(1997)

TITLE: LEACHATE/GAS EXTRACTION DETAILS			
LOCATION: Western Portion – Pagel Landfill Rockford, Winnebago County, Illinois			
HSI GEOTRANS A TETRA TECH COMPANY	CHECKED:	DB	FIGURE:
	DRAFTED:	SDL	4
	FILE:	N021019A.DWG	
	DATE:	6-11-99	

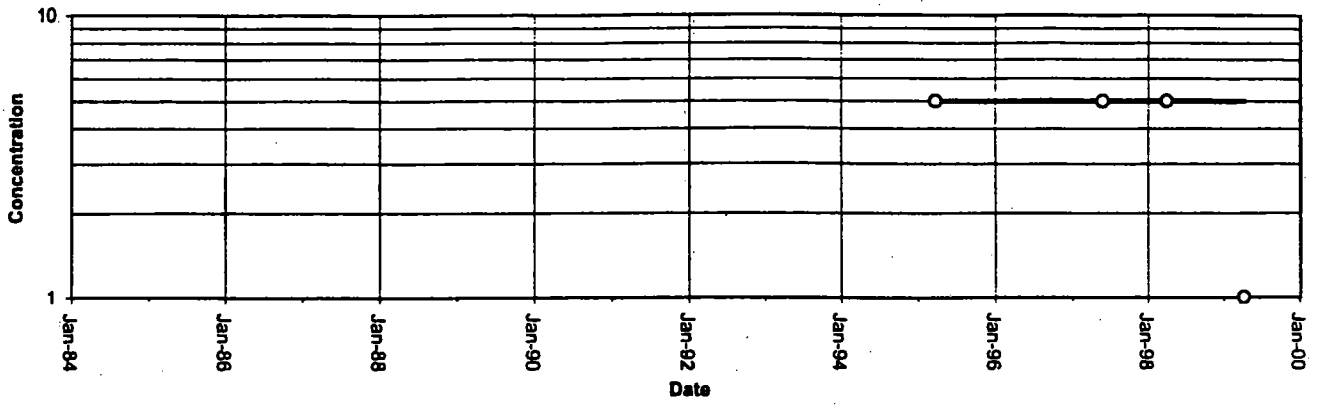
APPENDIX C

TIME SERIES

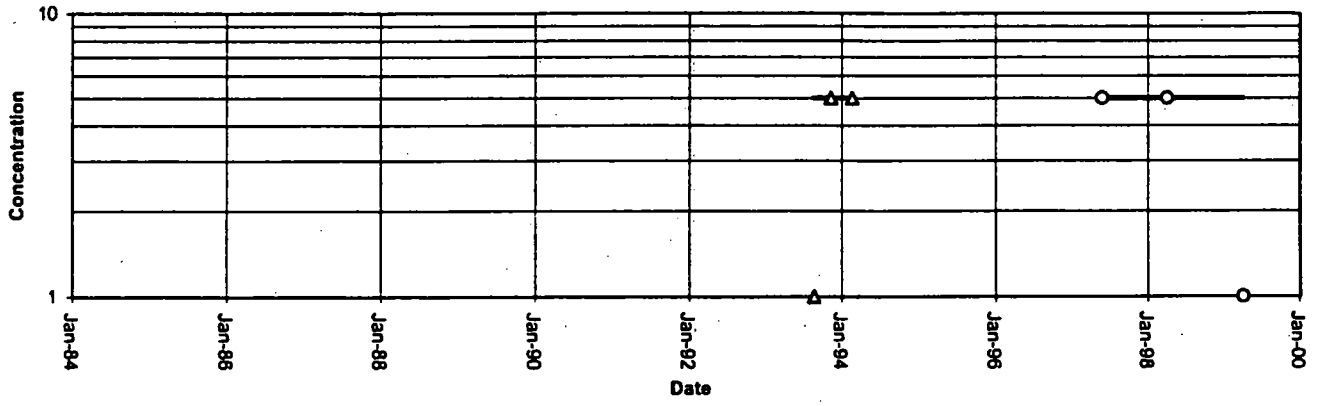
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

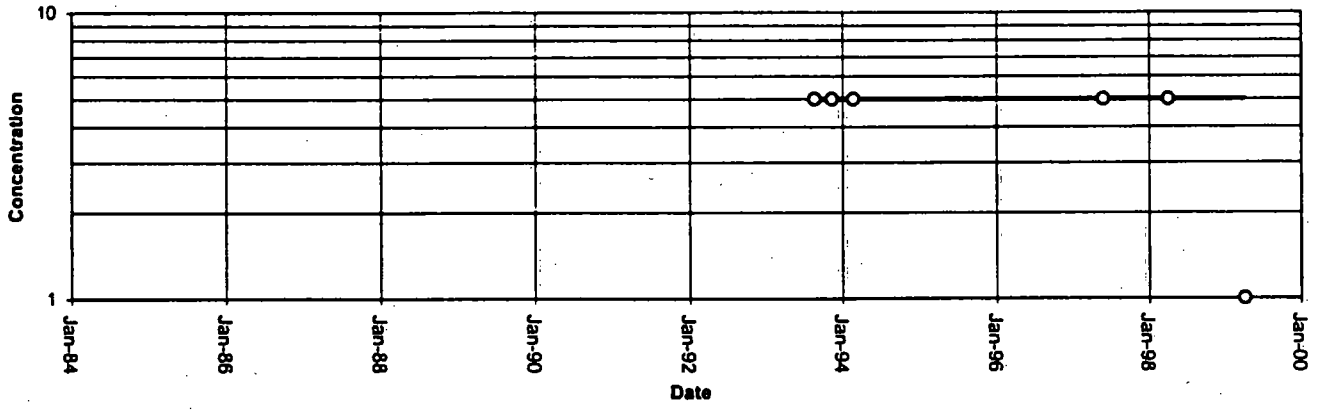
B15R



G109



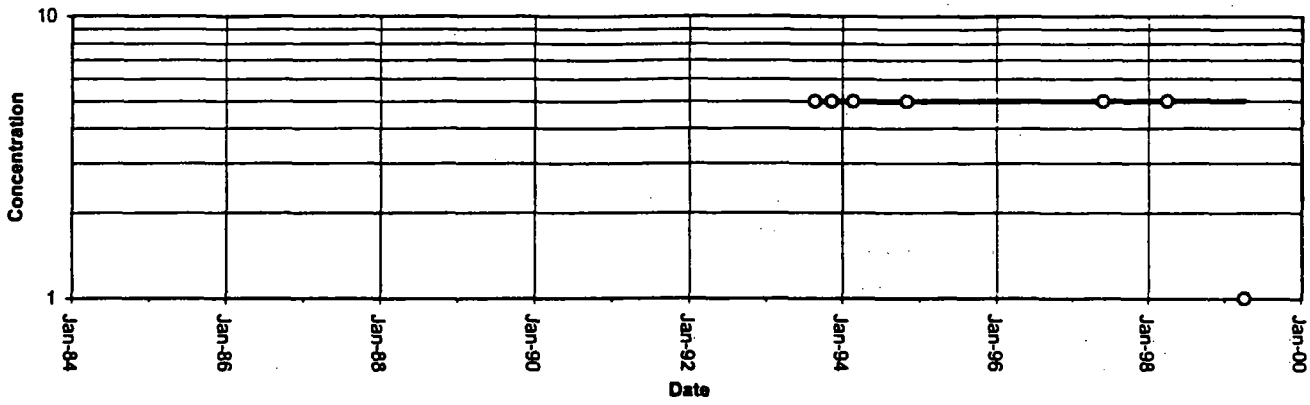
G109A



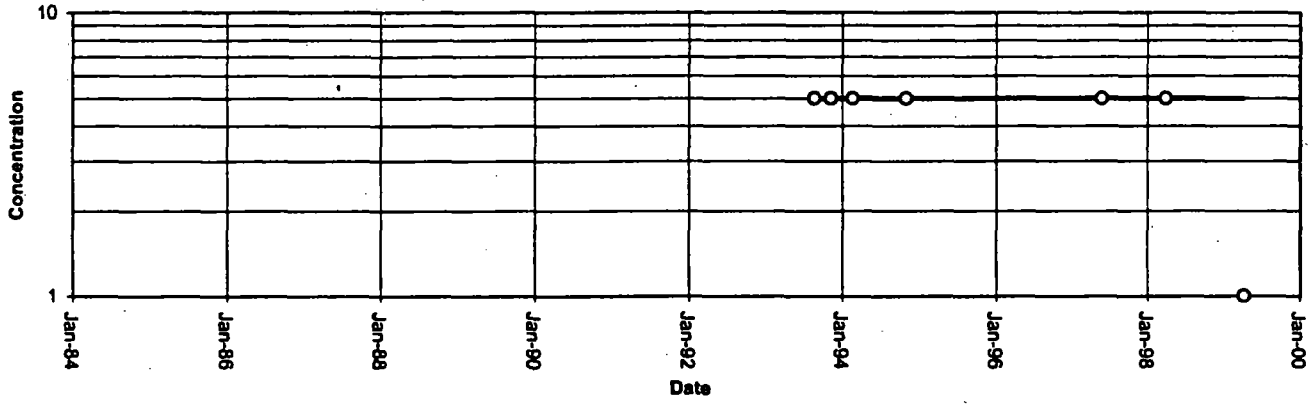
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

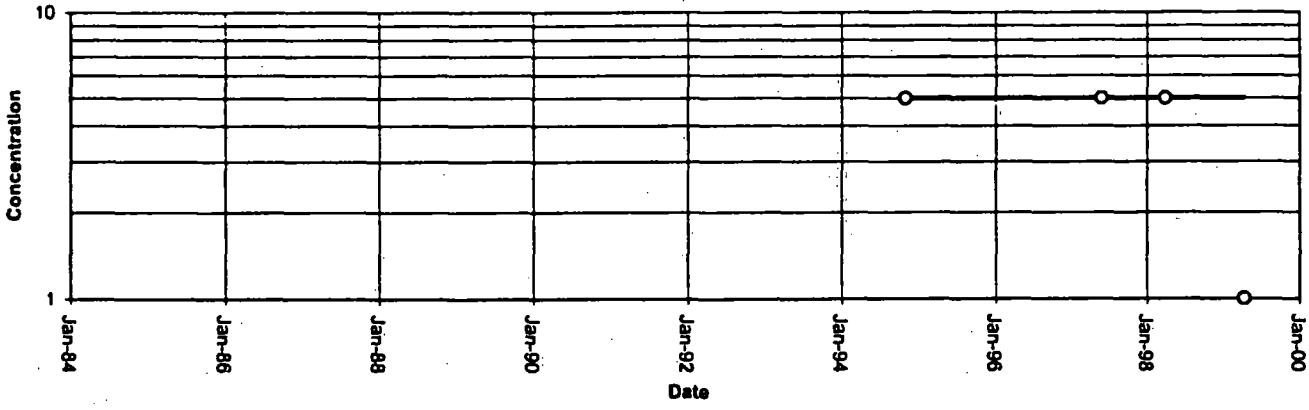
G113



G113A



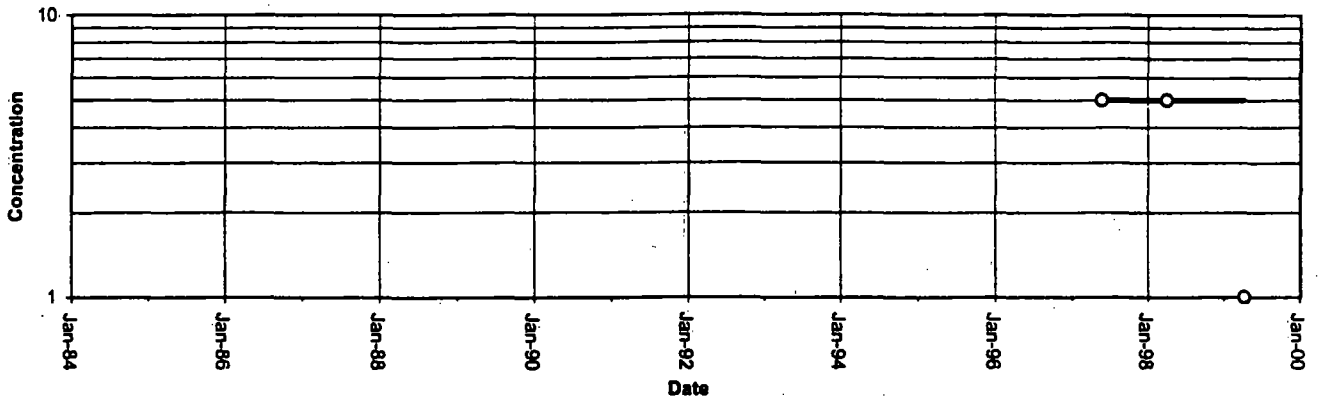
G114



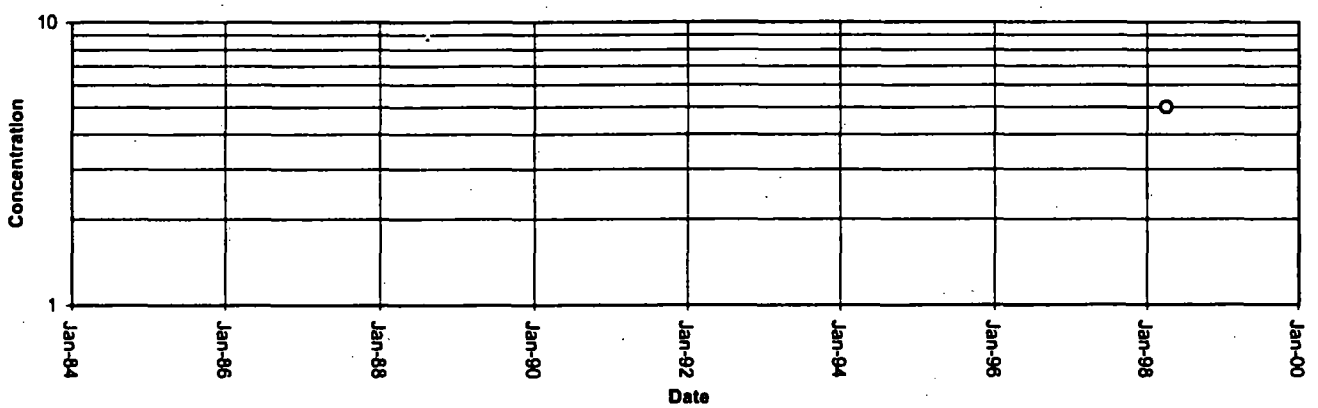
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

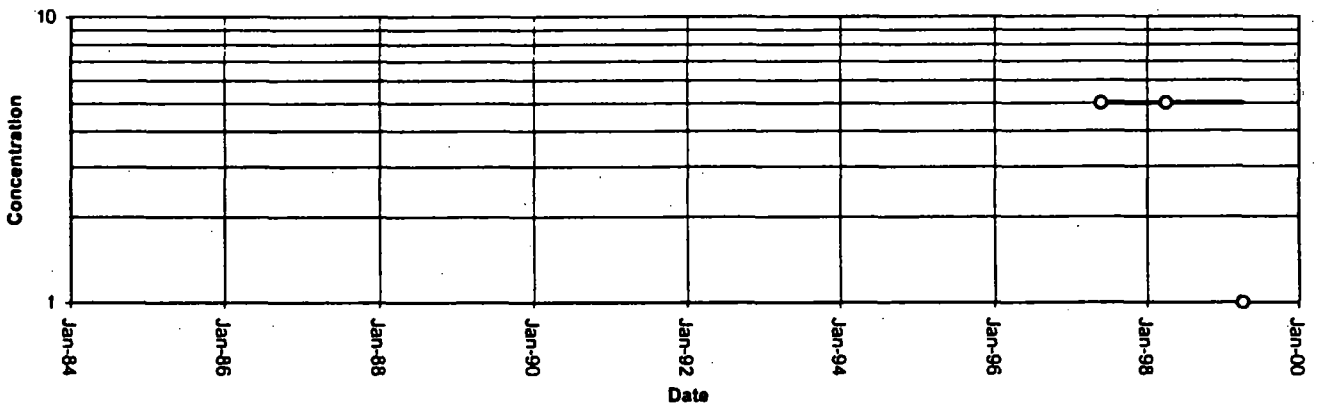
G115



G116



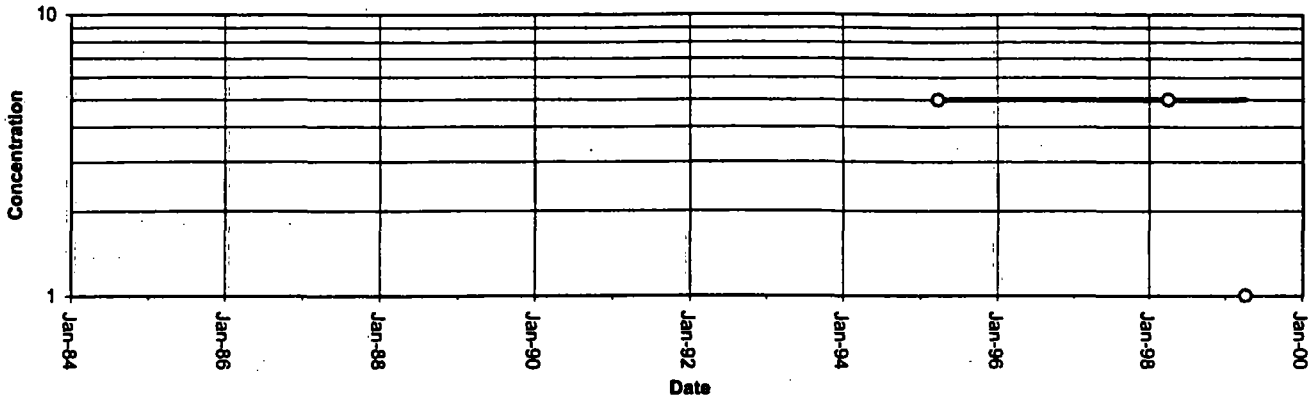
G116A



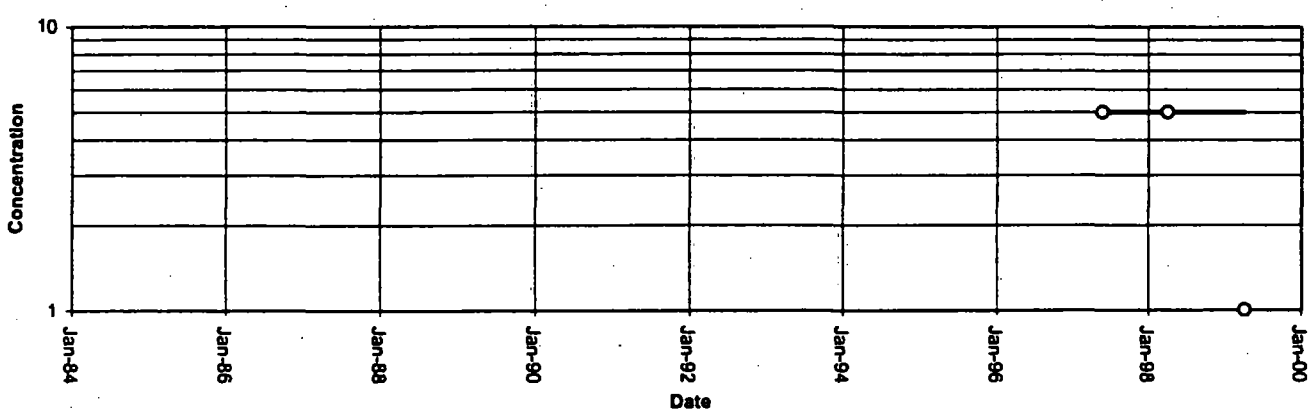
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

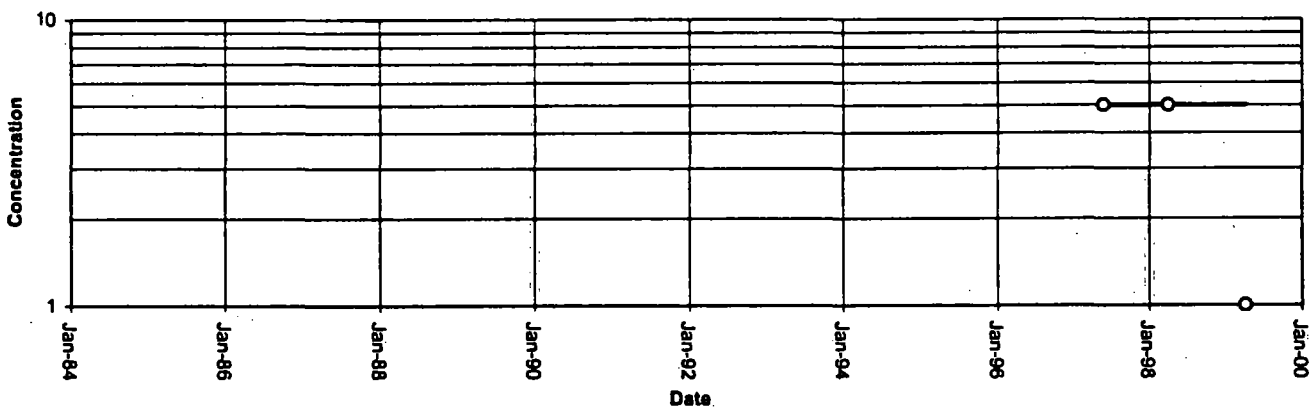
G116D



G117



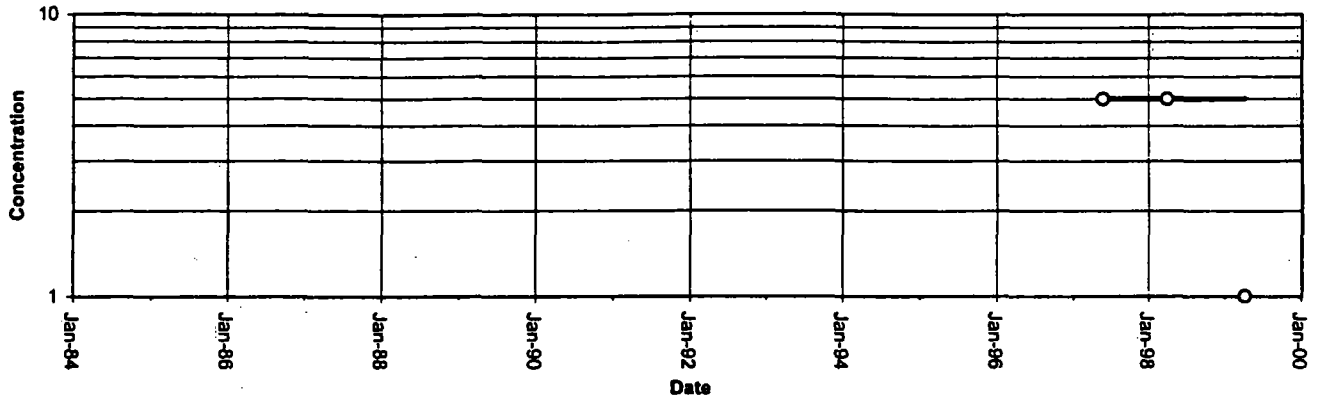
G118A



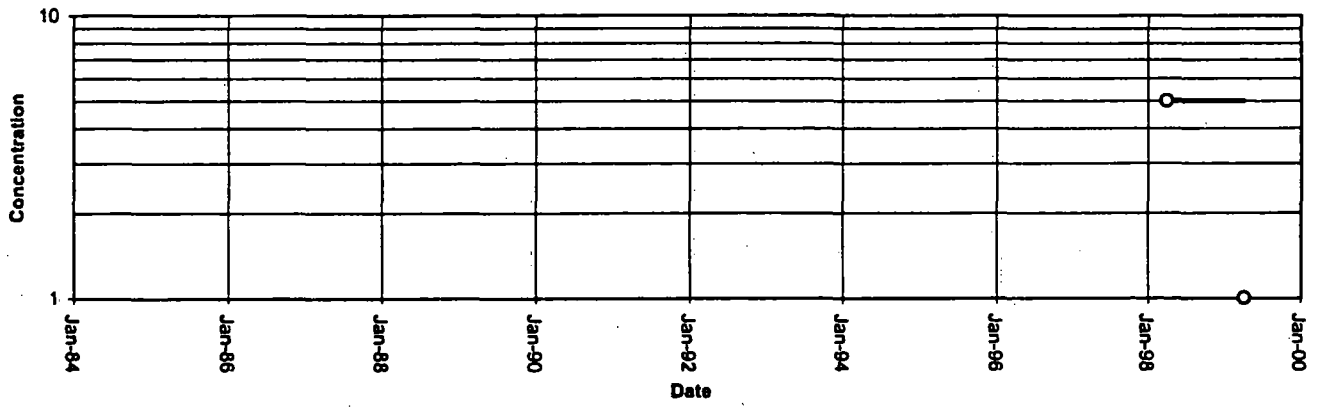
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

G118R



G119



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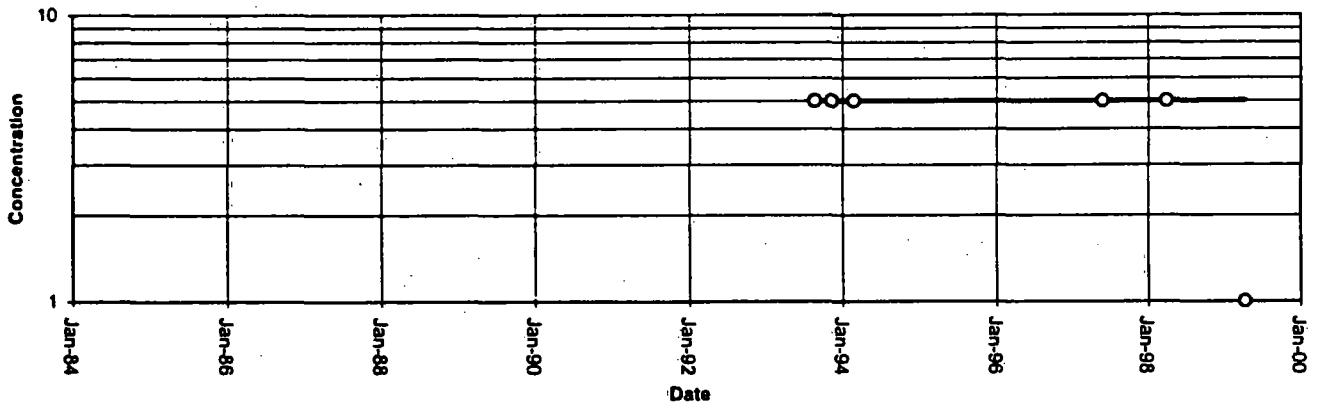
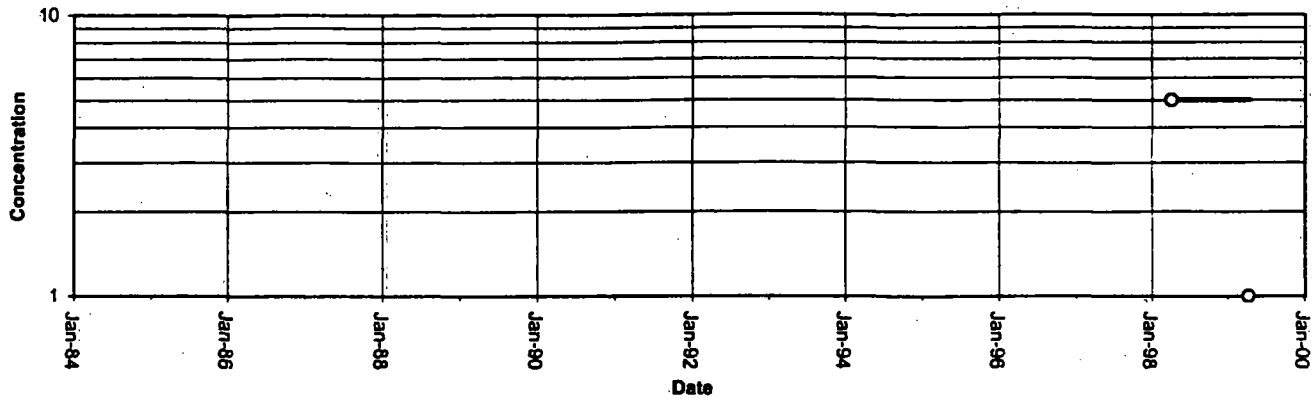


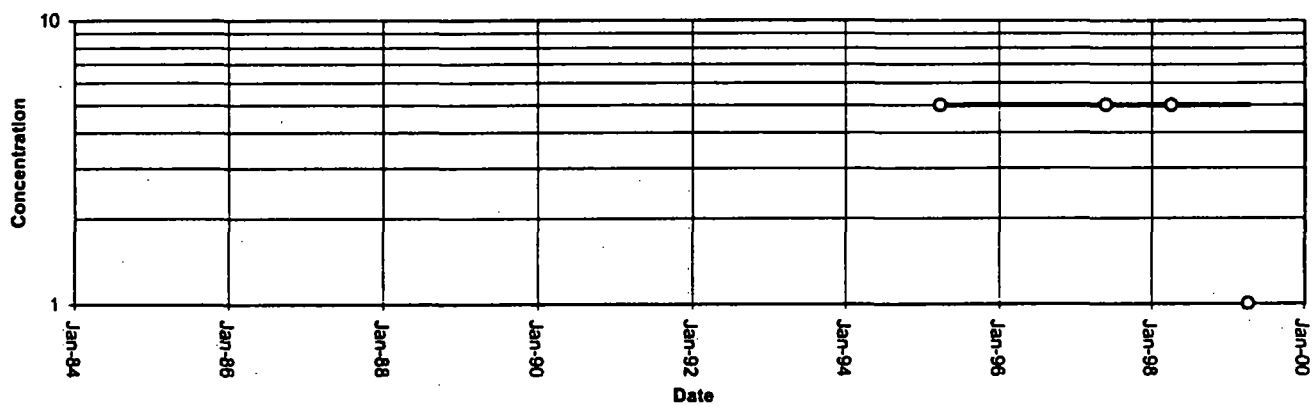
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

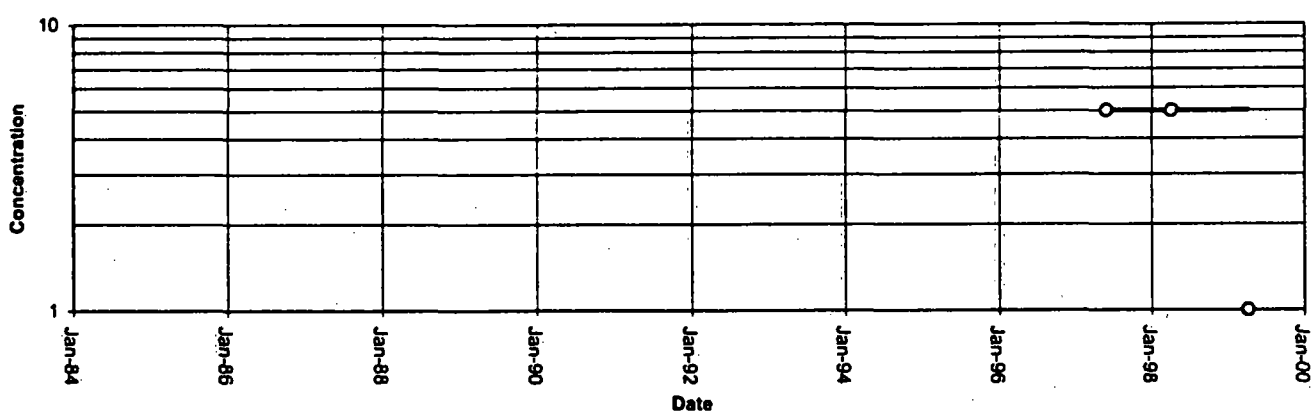
G130



G132



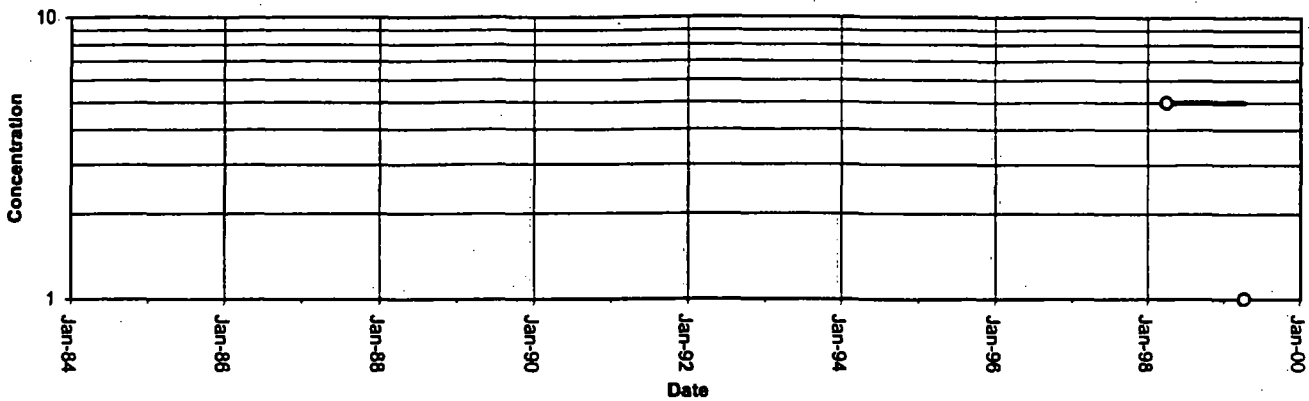
G33D



1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

G33S



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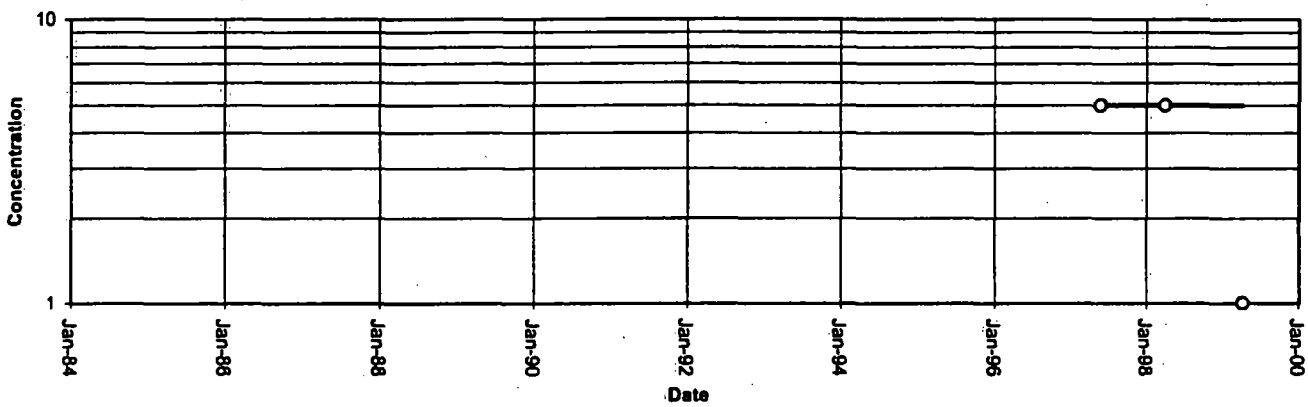

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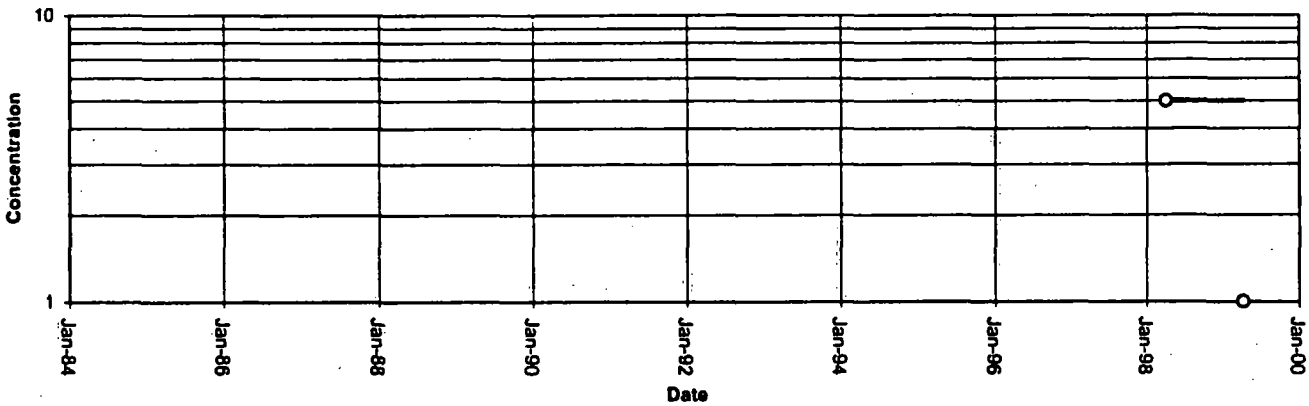
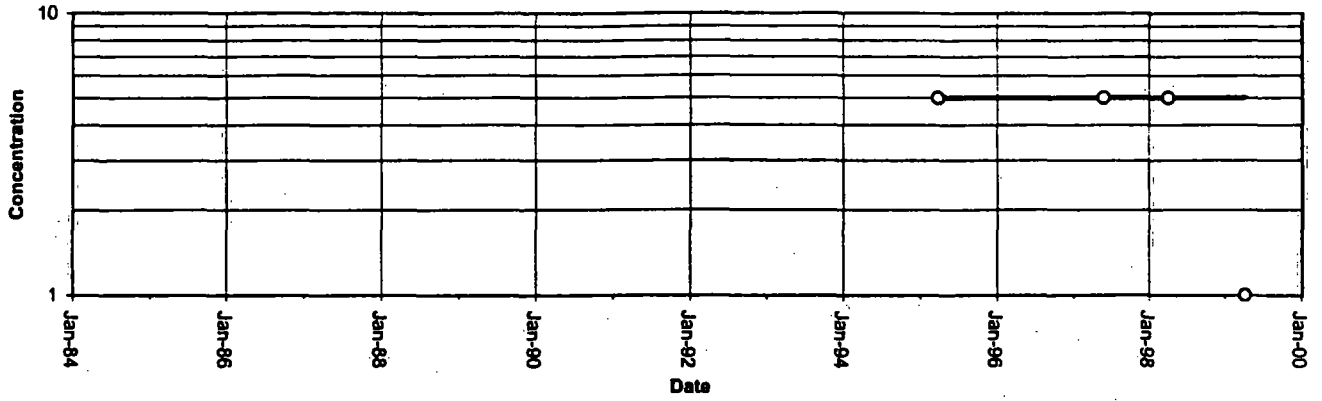


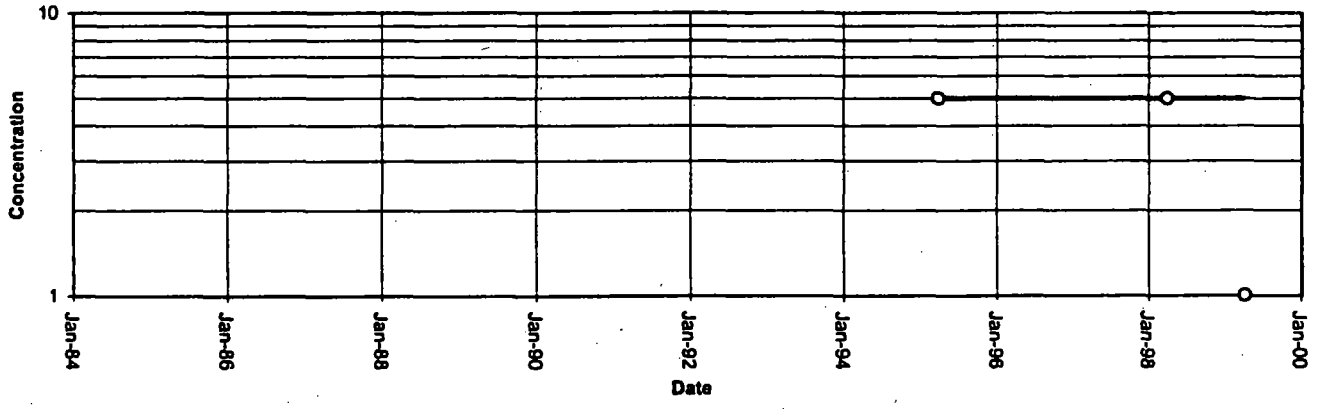
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

G35D



G35S



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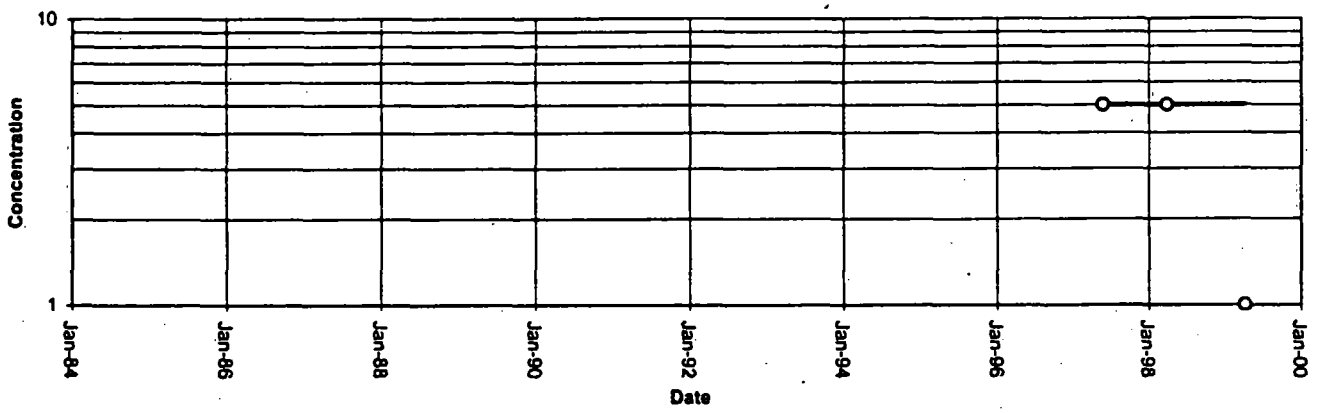
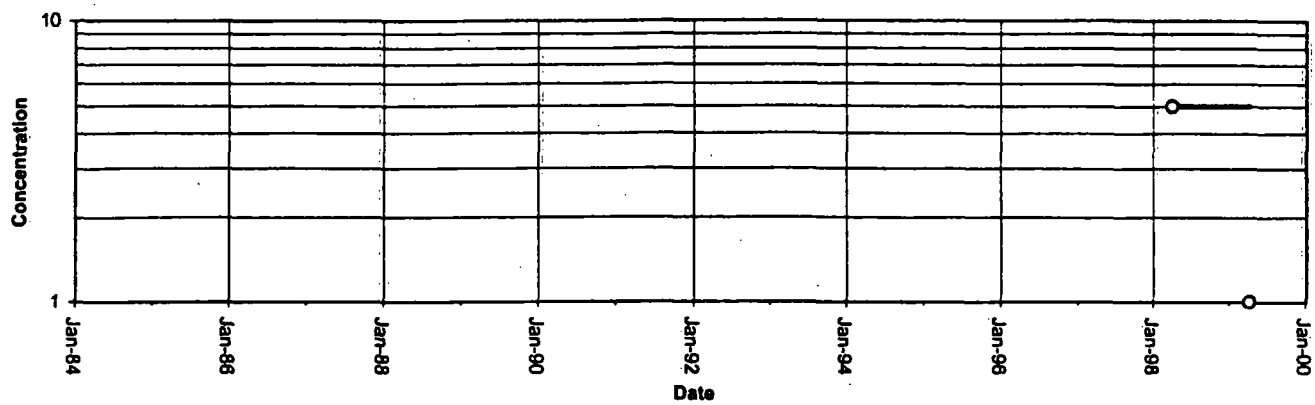


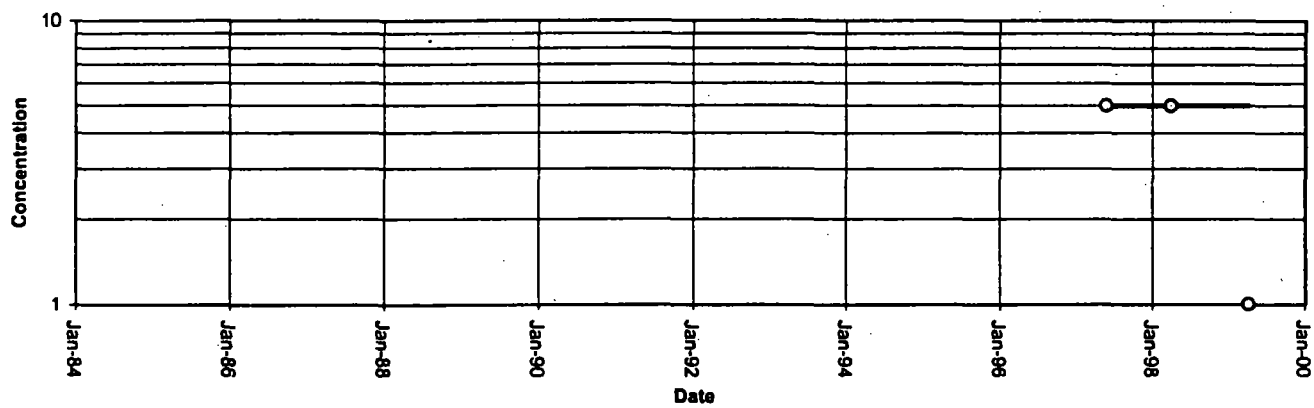
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

G37D



G37S



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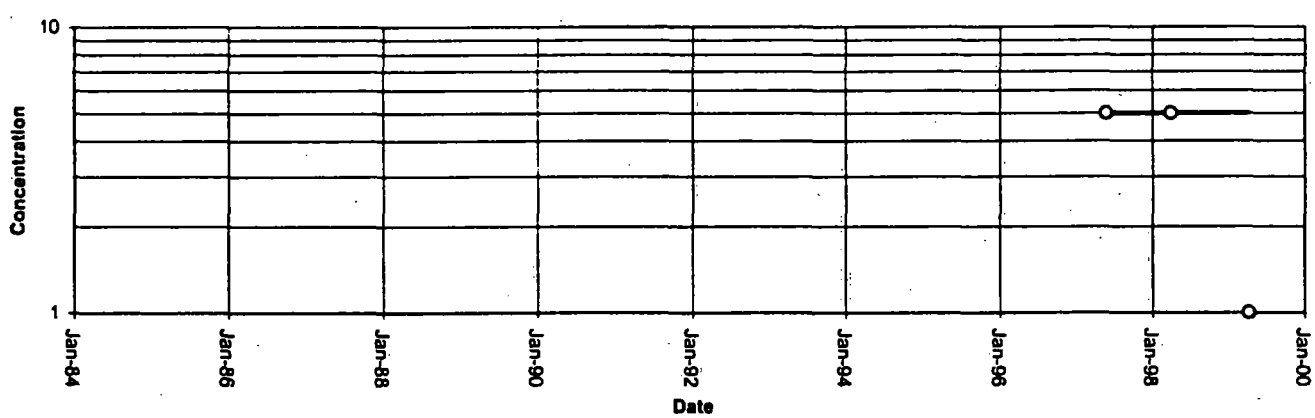
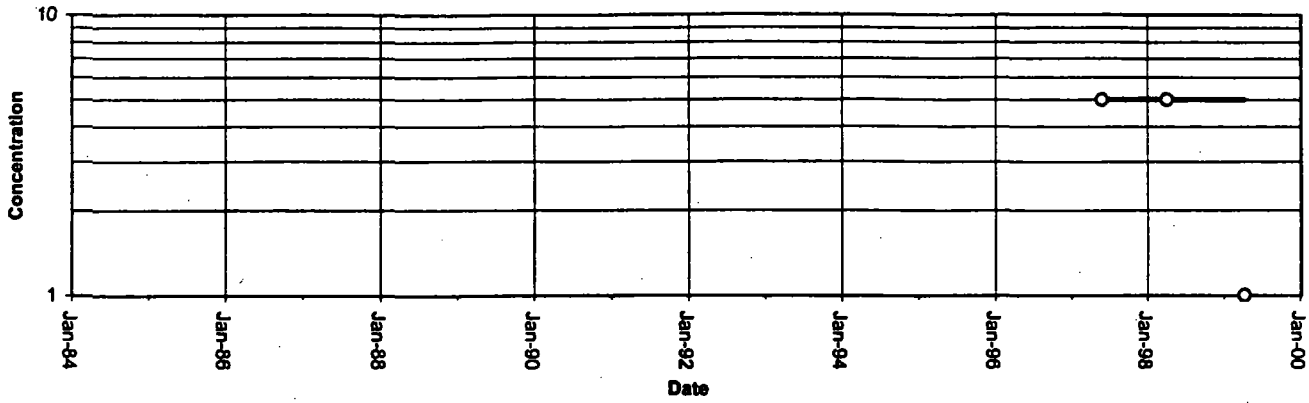


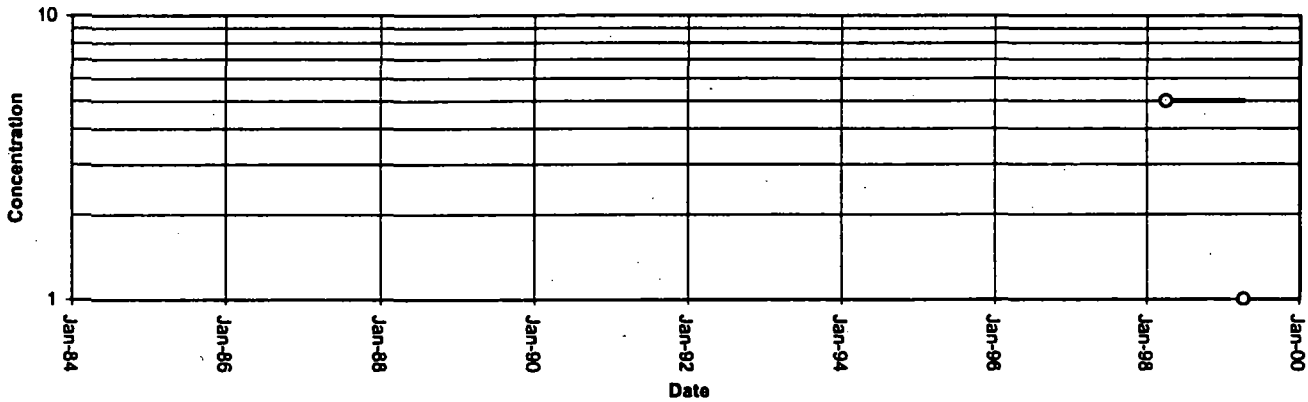
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

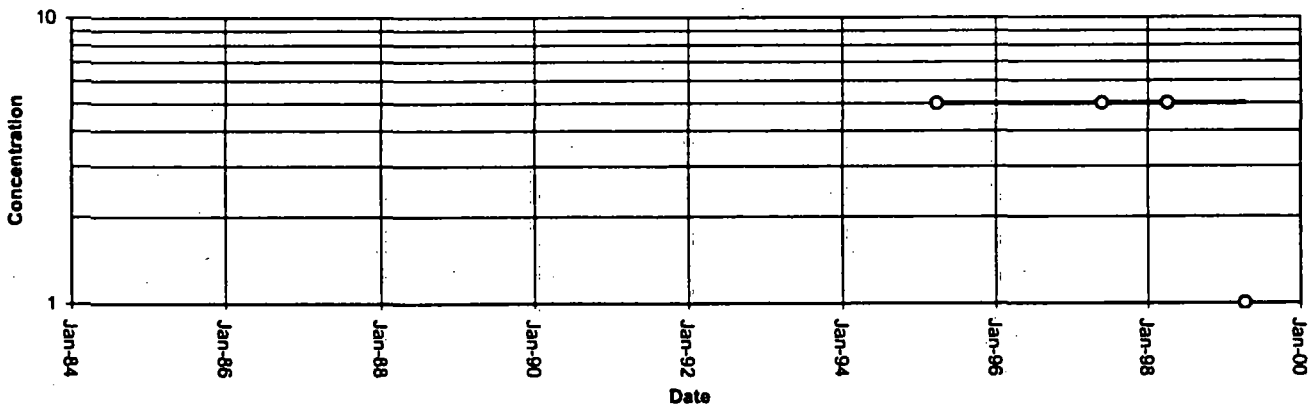
G39



G40



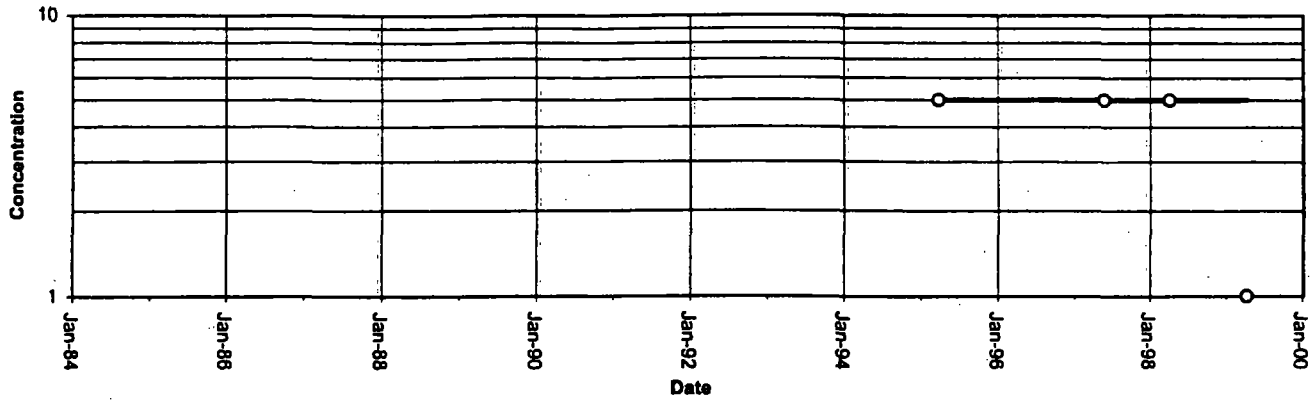
MW106



1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

P1



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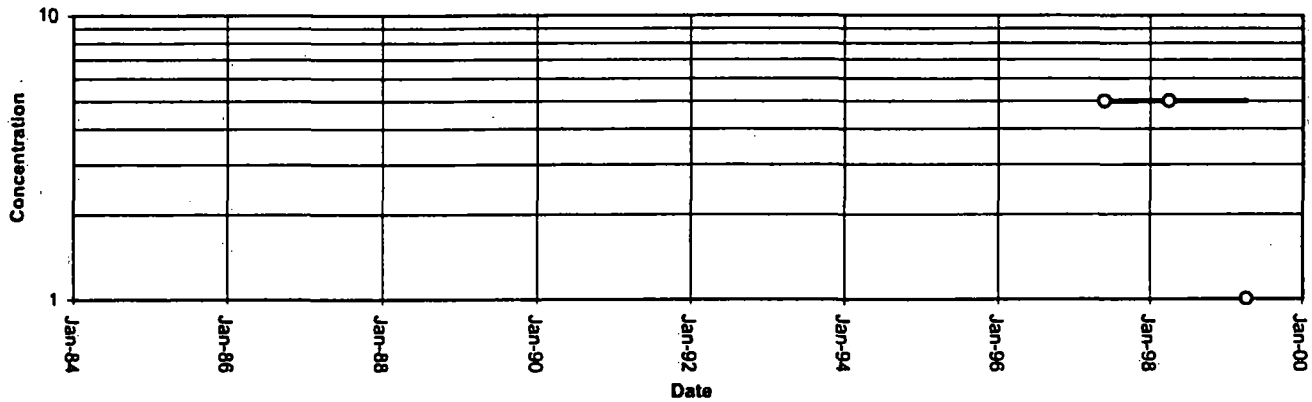
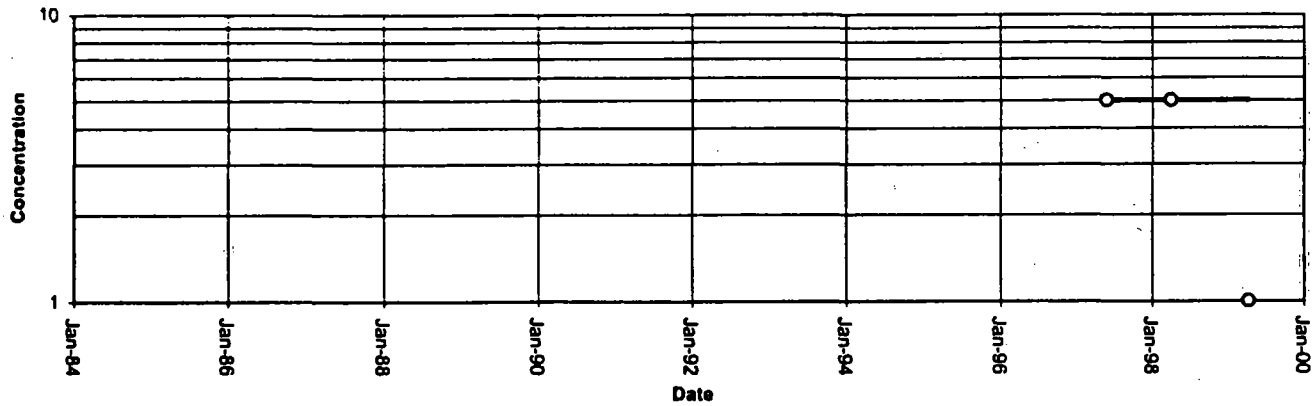


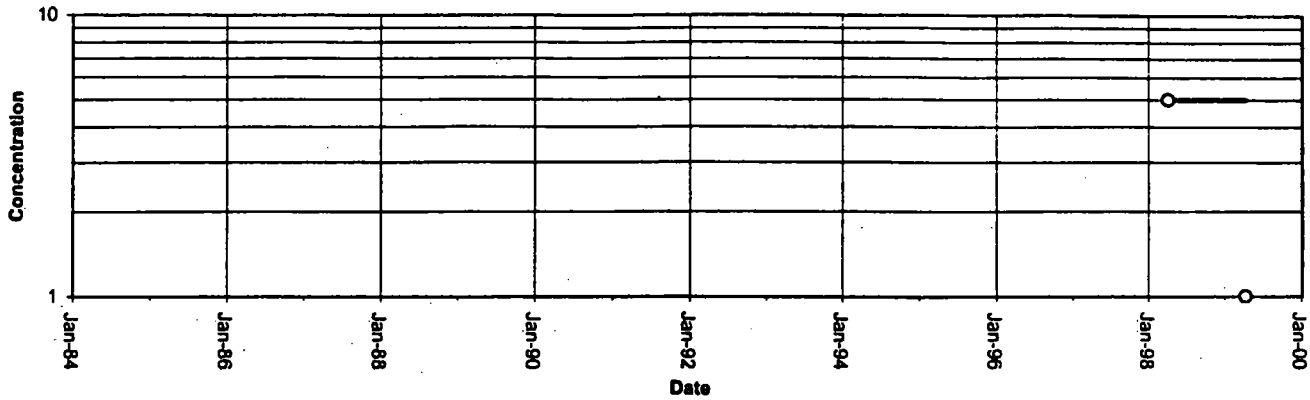
P4R



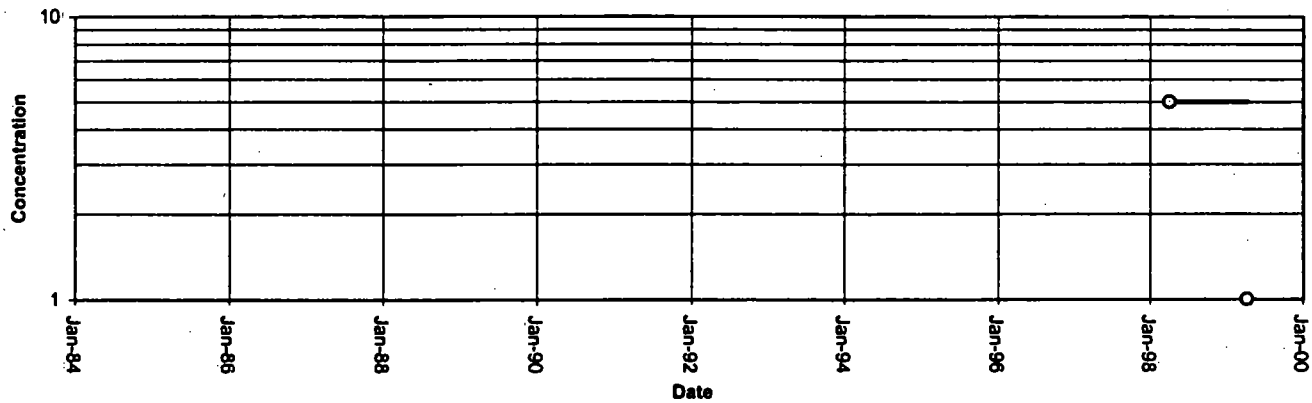
1,2,4-Trimethylbenzene (ug/L)

AGQS Δ Concentration O NonDetect

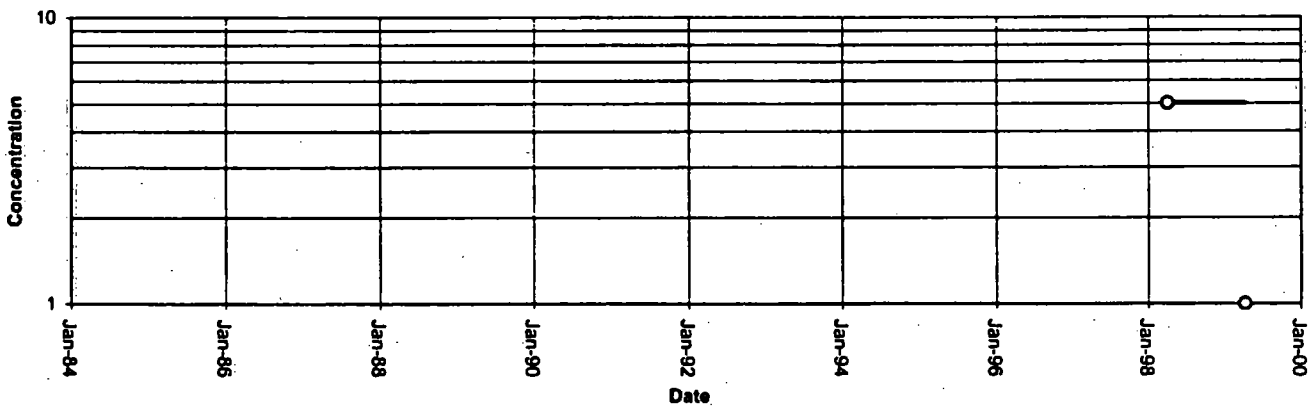
SG1



SG3



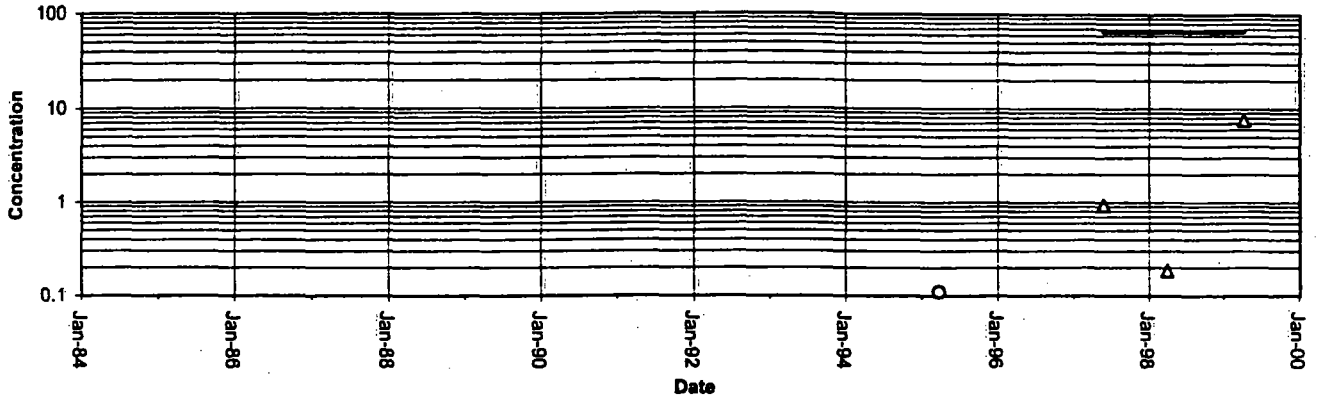
SG4



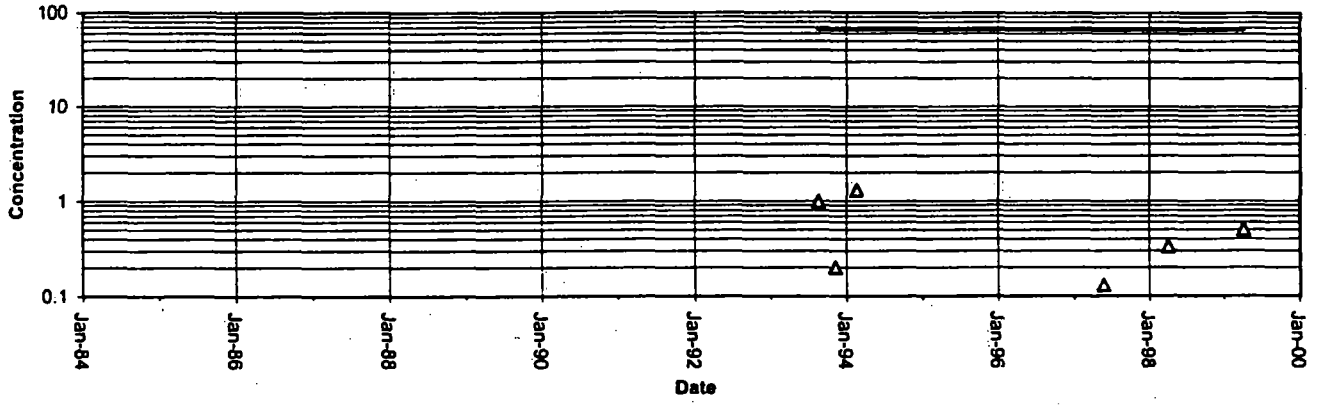
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

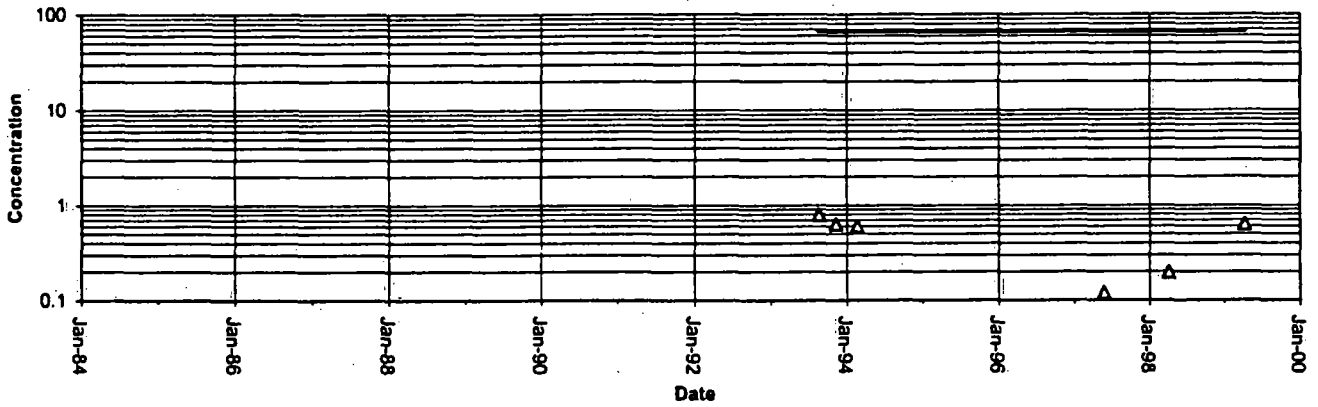
B15R



G109



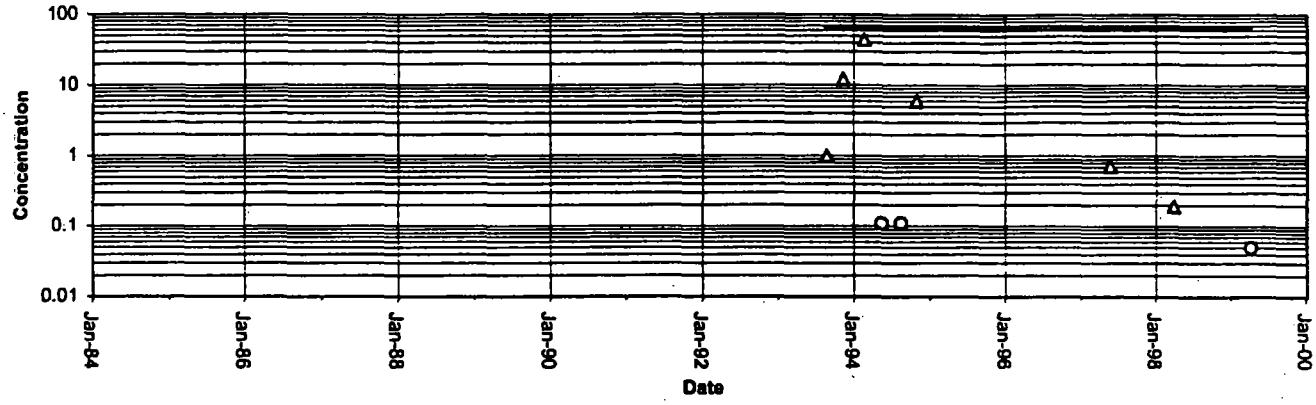
G109A



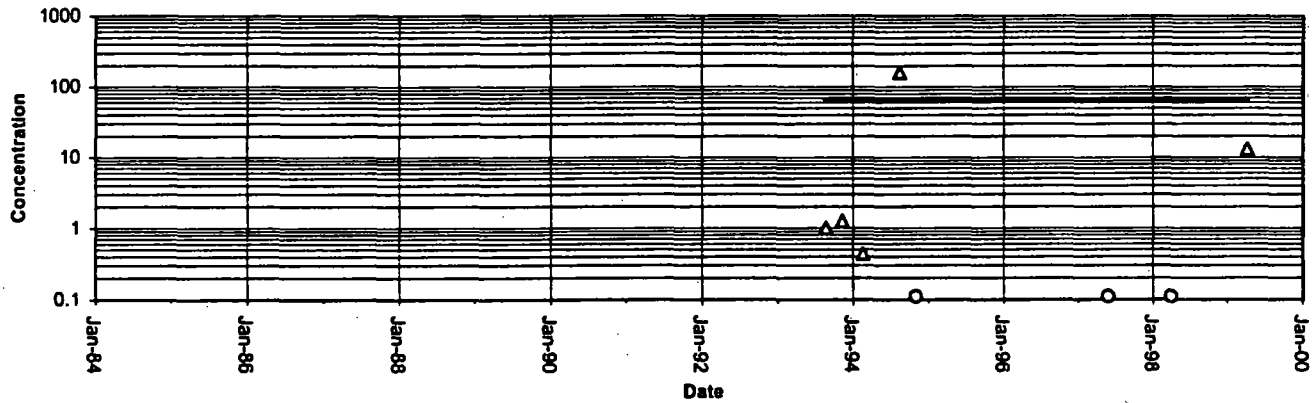
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

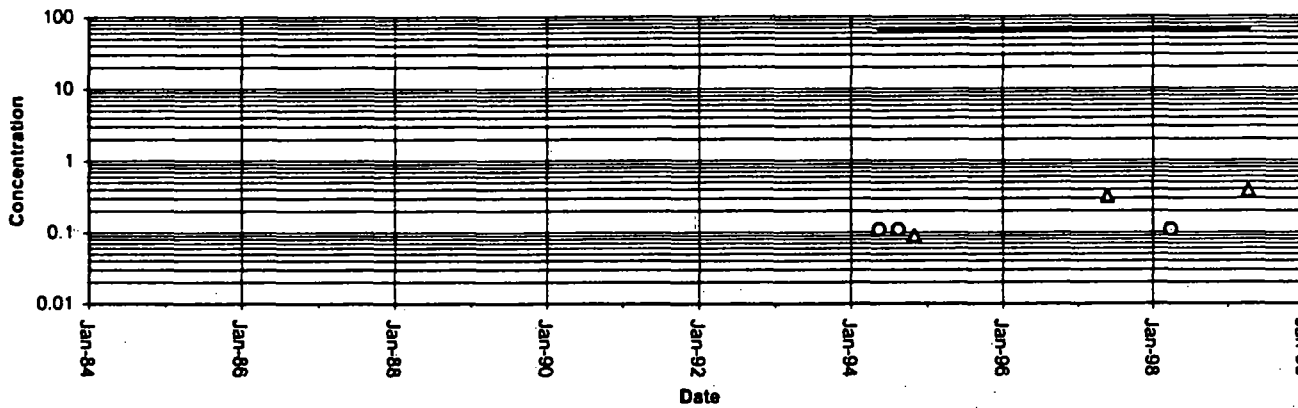
G113



G113A



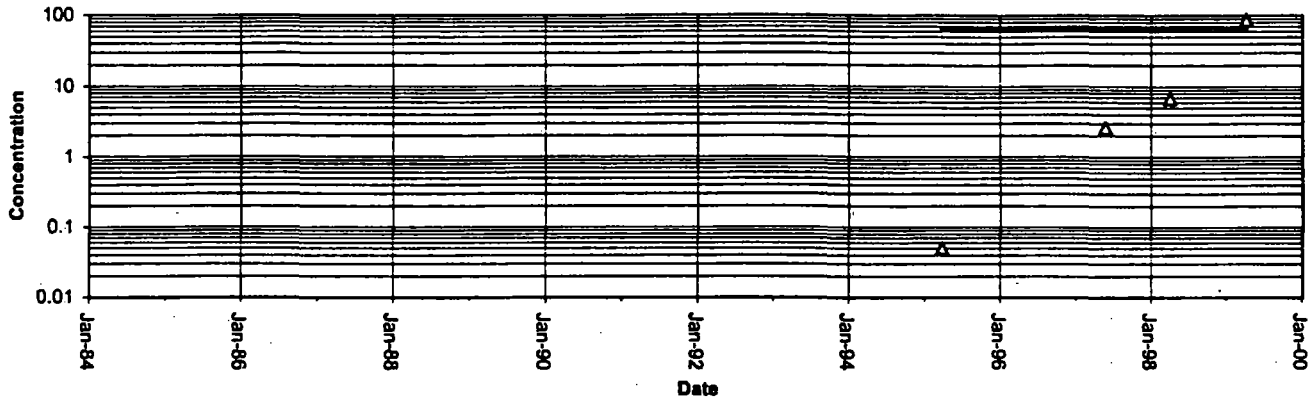
G114



Aluminum (mg/L)

AGQS Concentration NonDetect

G115



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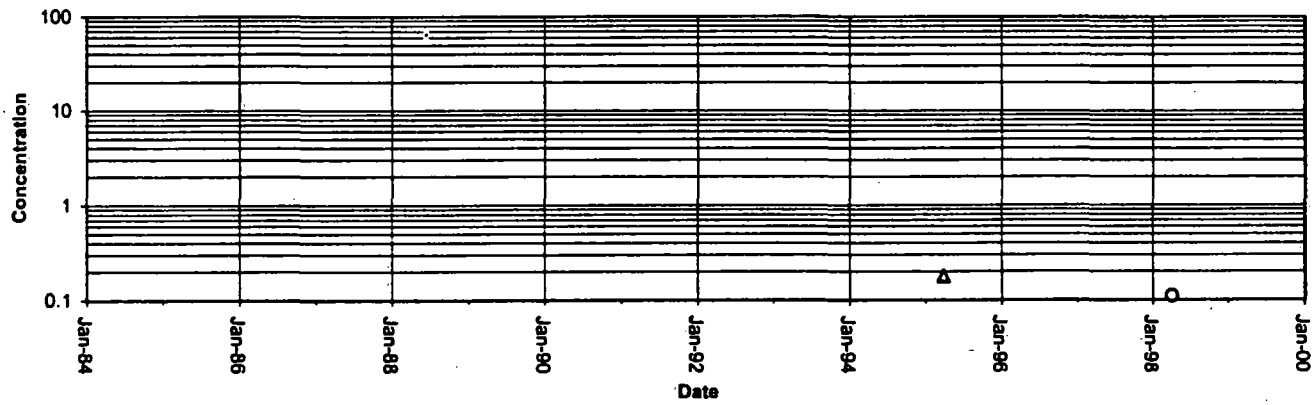

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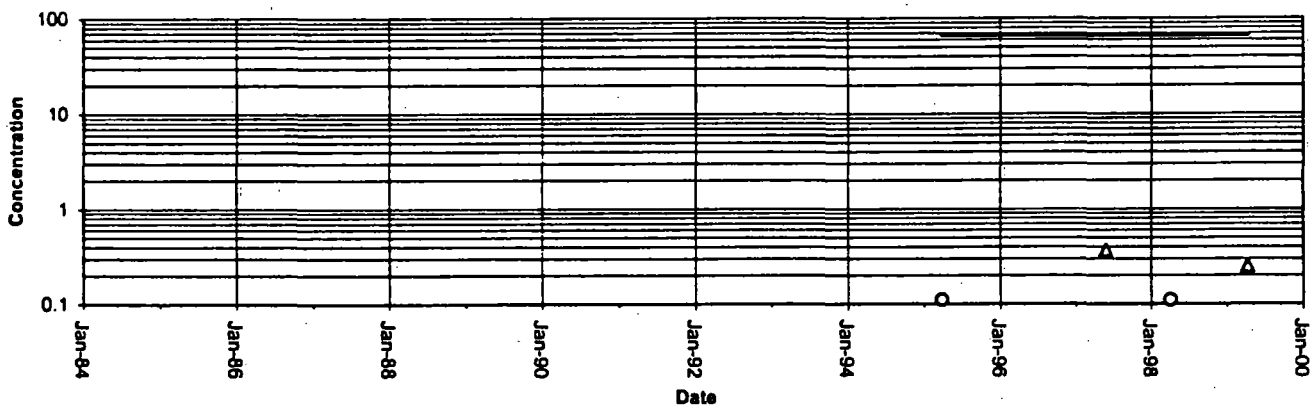
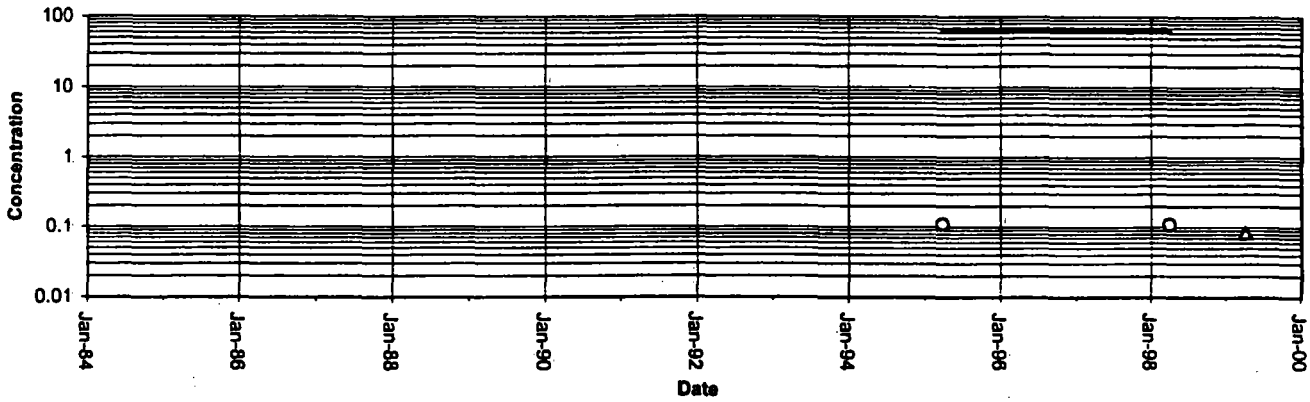


Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

G116D



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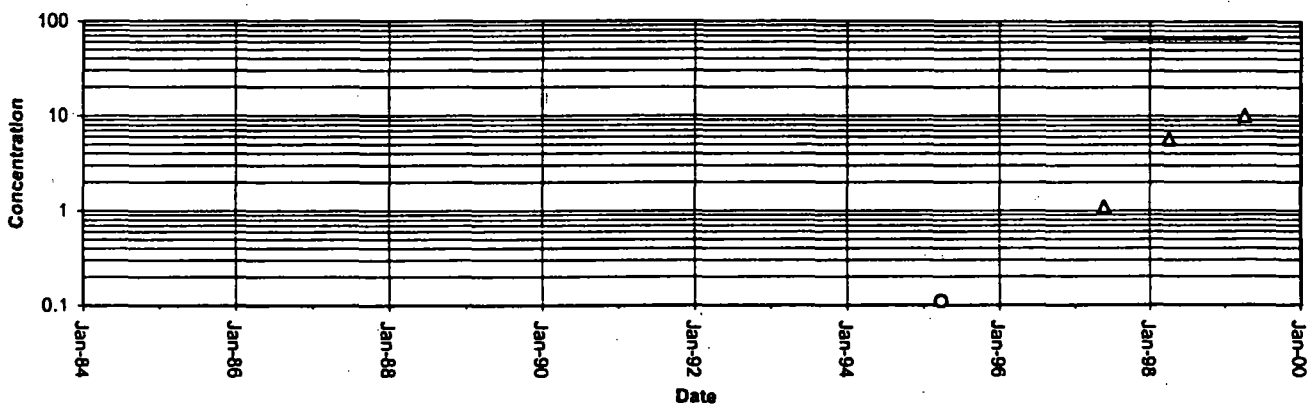

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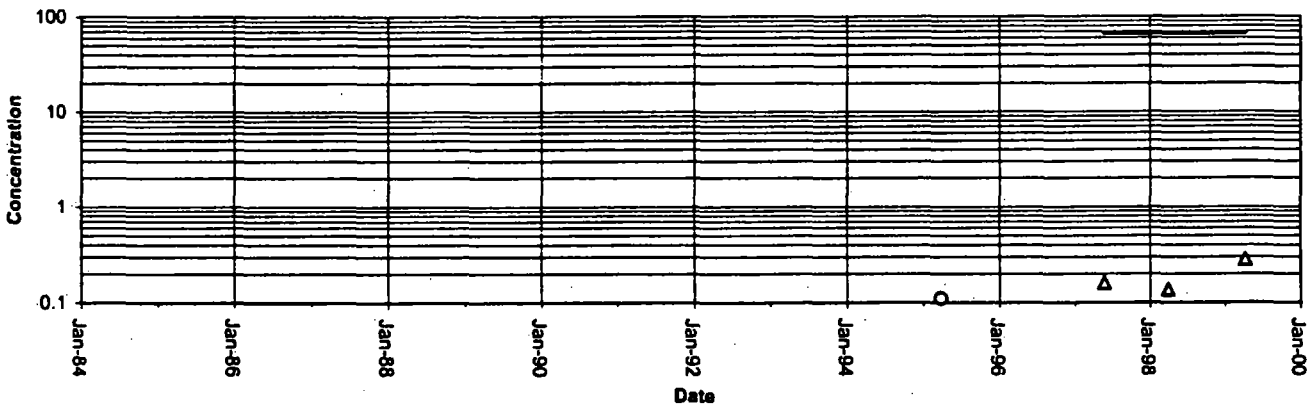
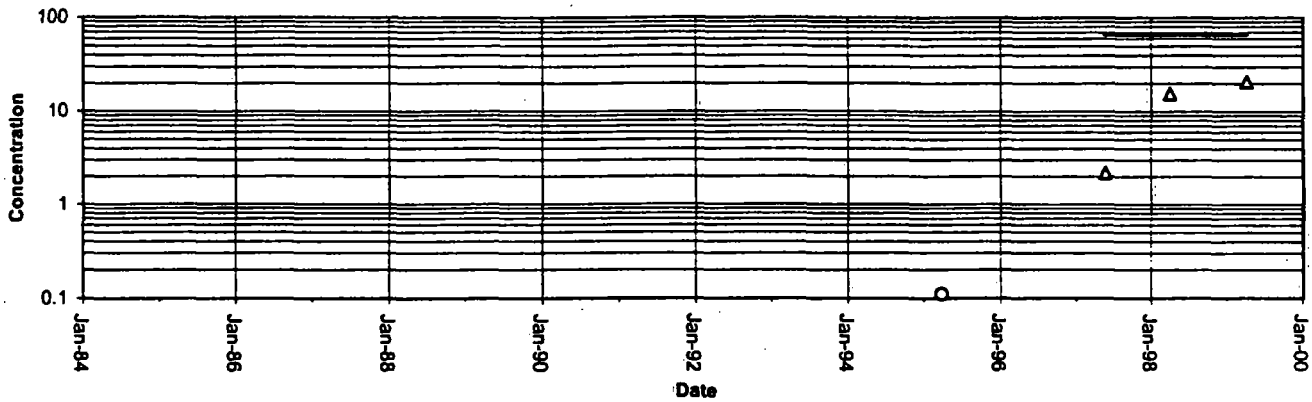


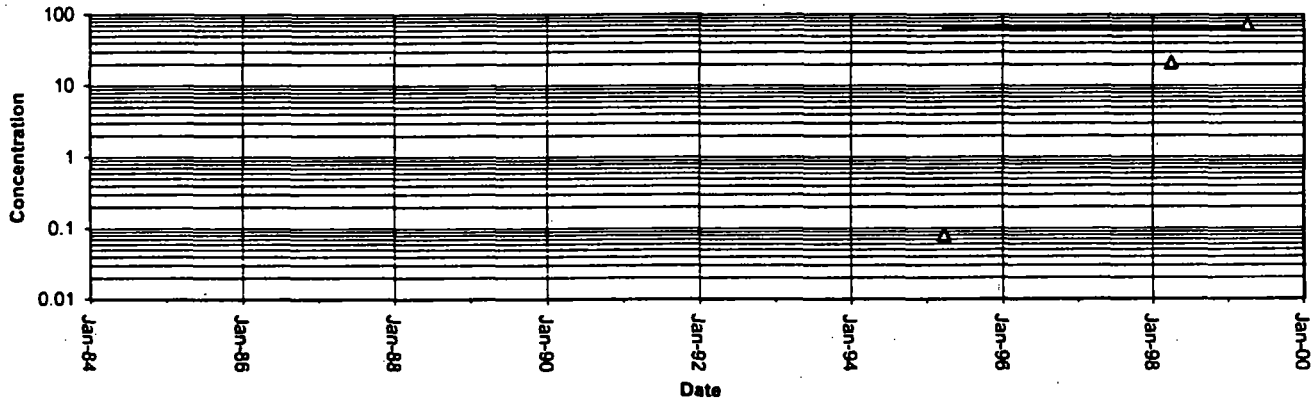
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

G118R



G119



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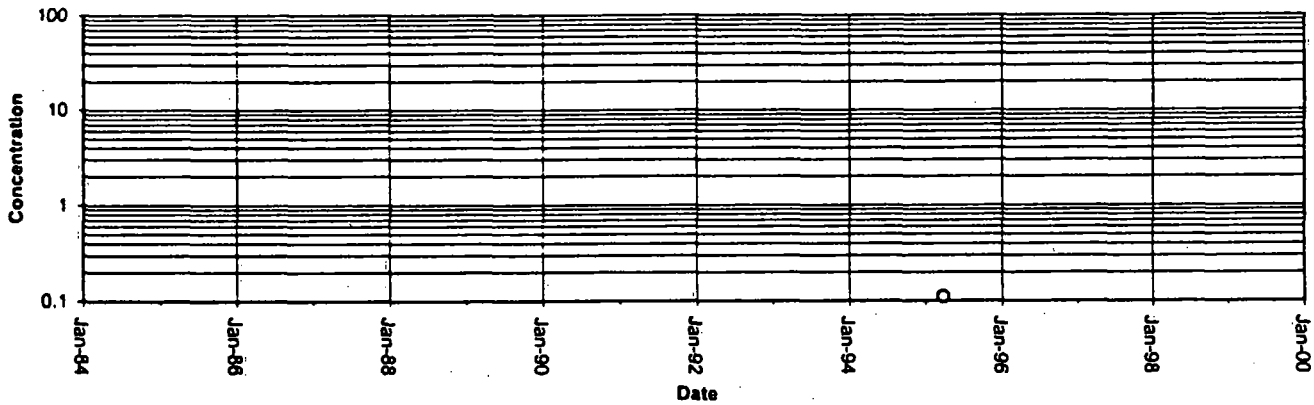
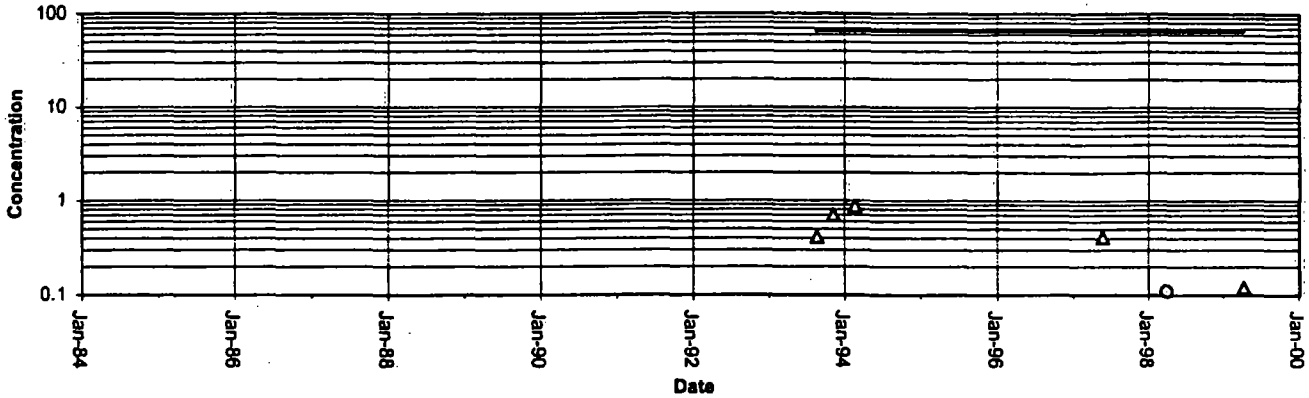


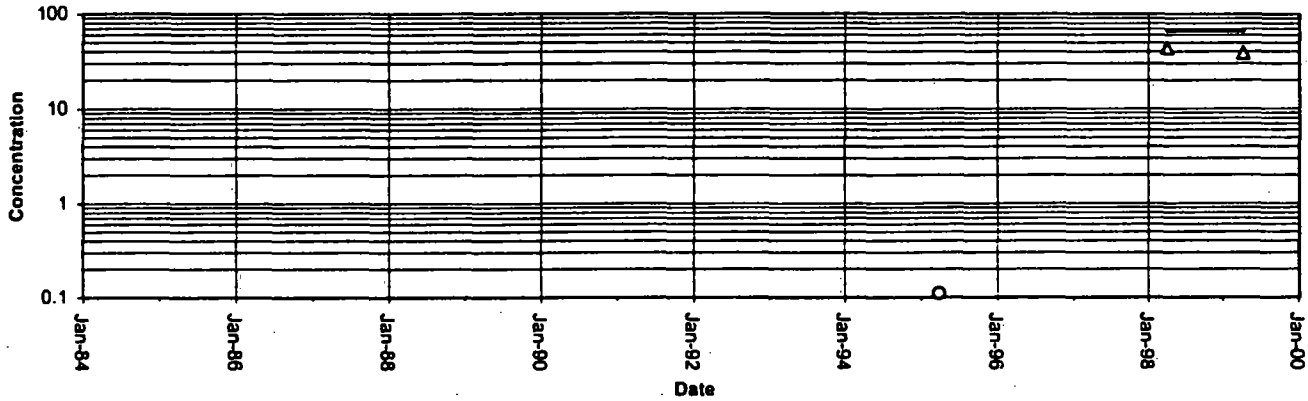
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

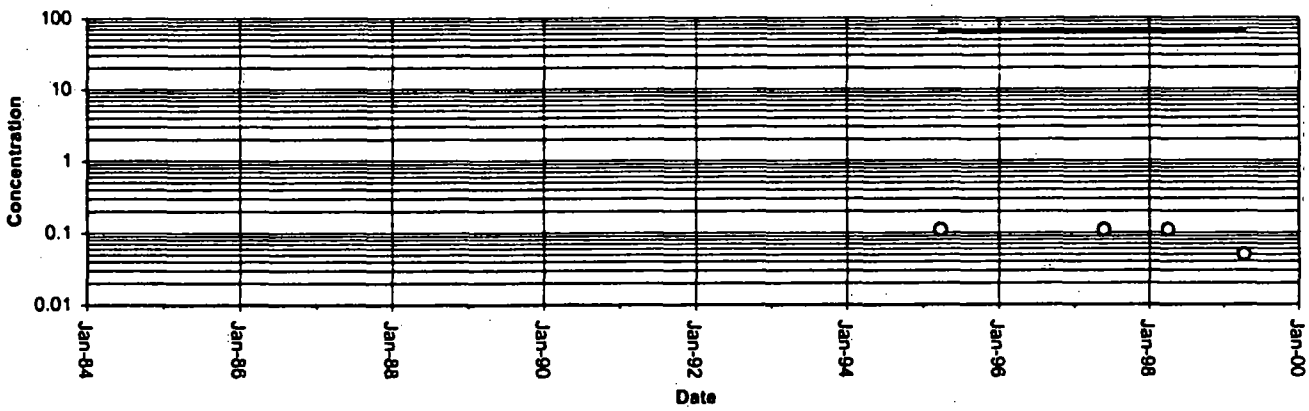
G120B



G130



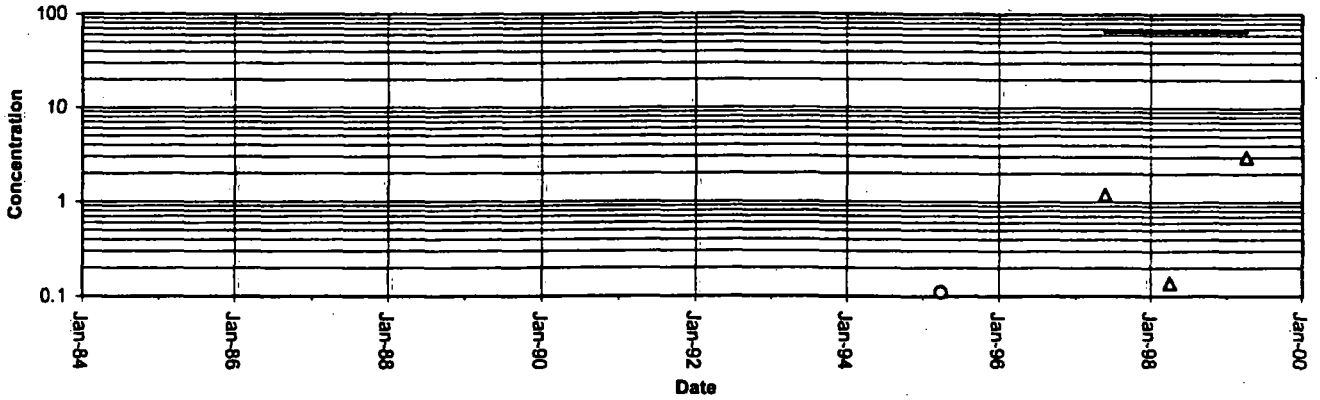
G132



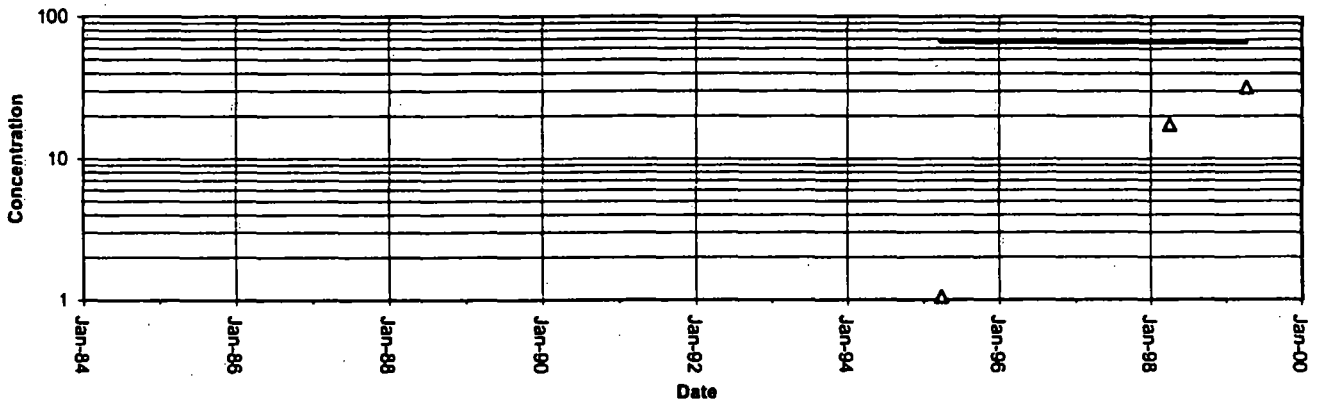
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

G33D



G33S



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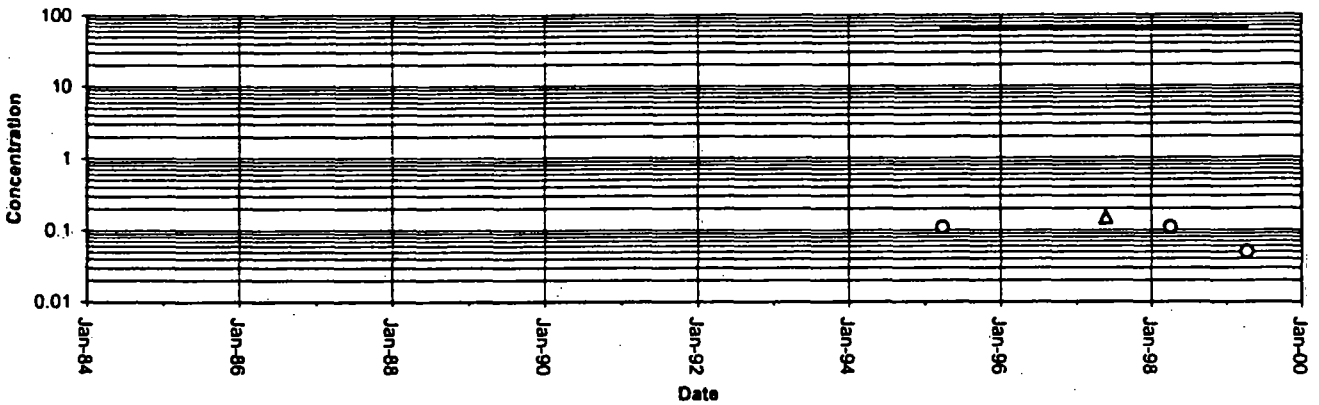
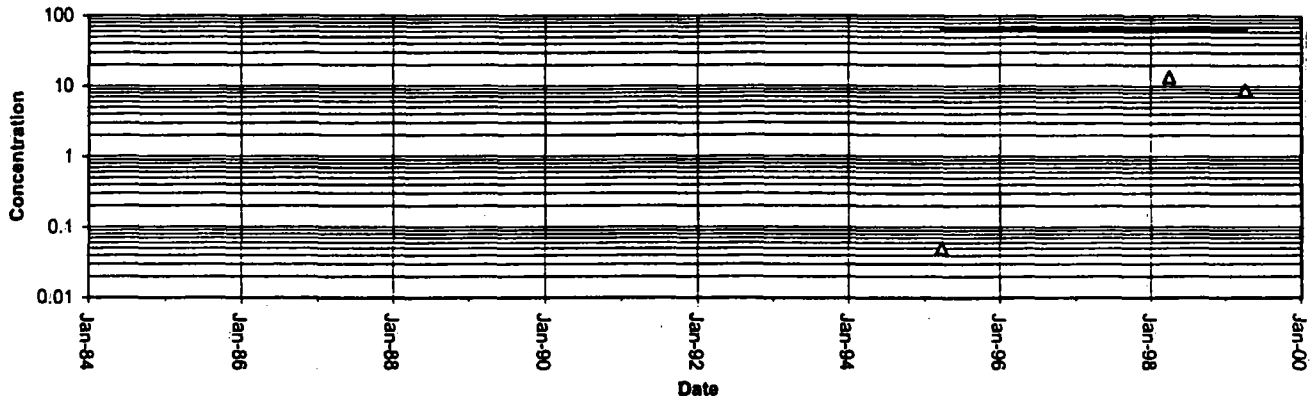


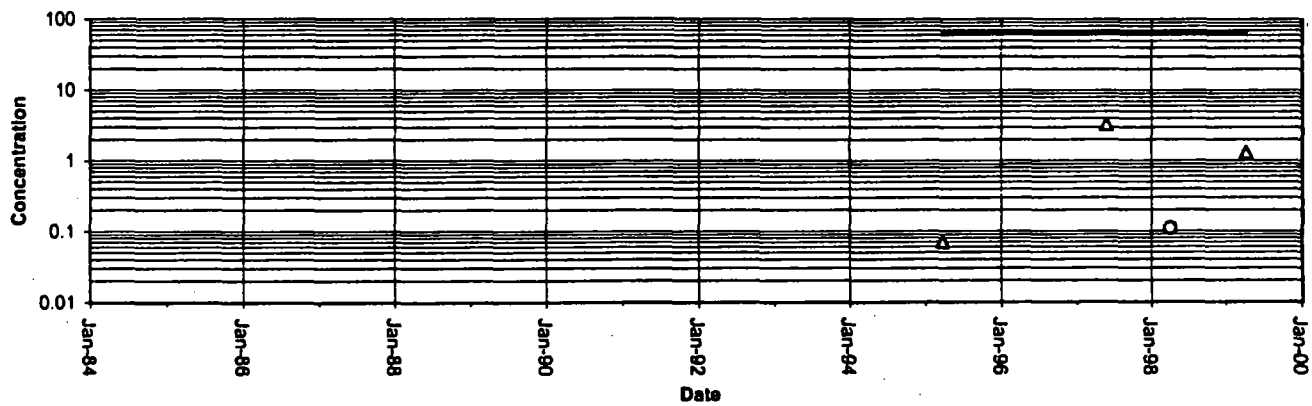
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

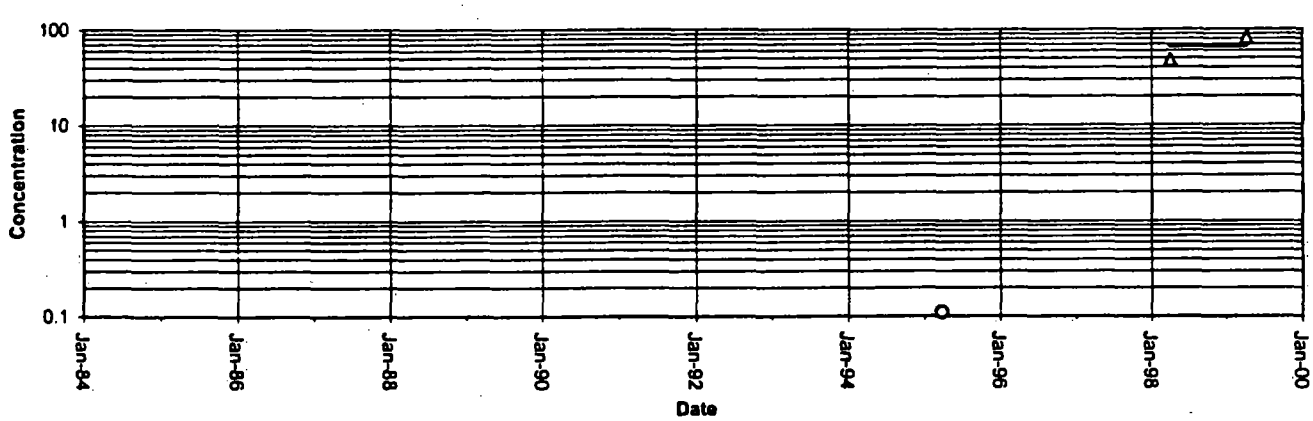
G34S



G35D



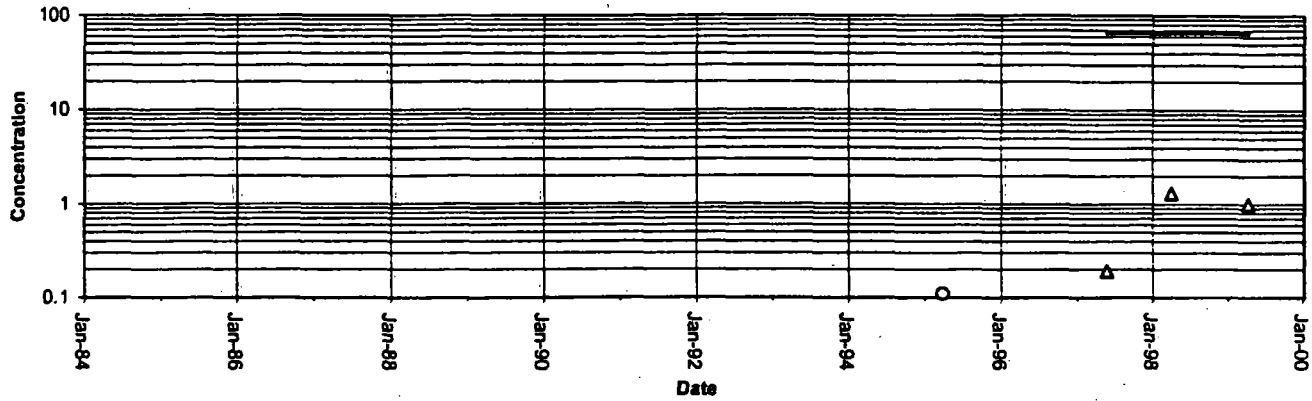
G35S



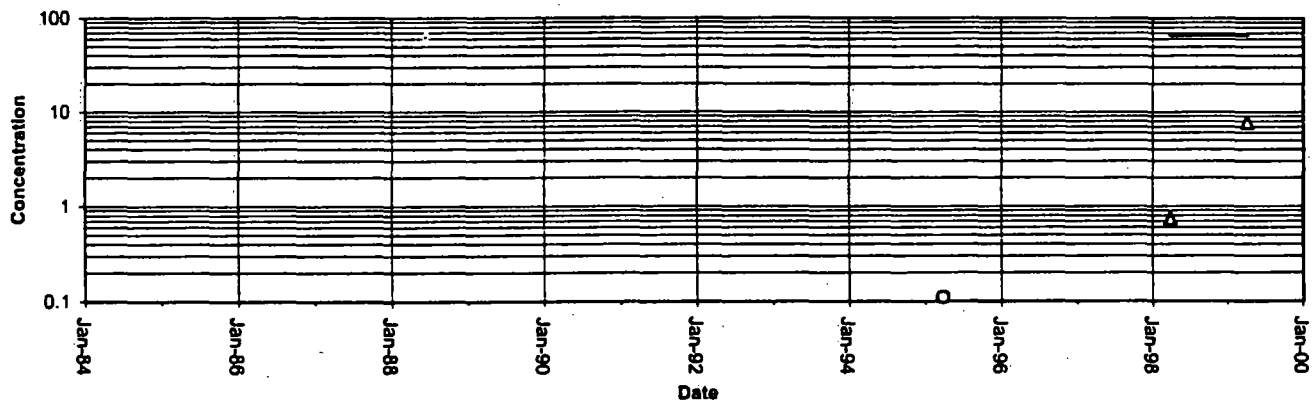
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

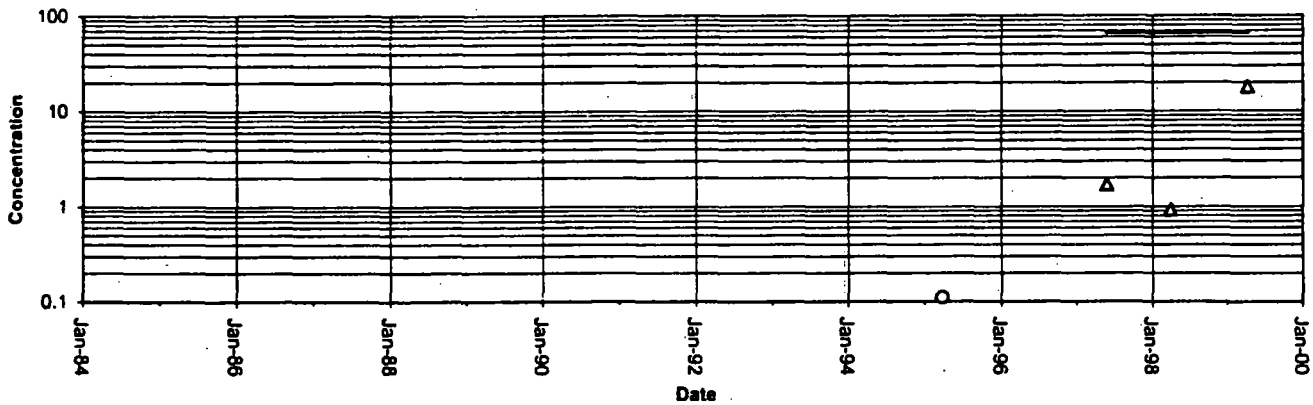
G36



G37D



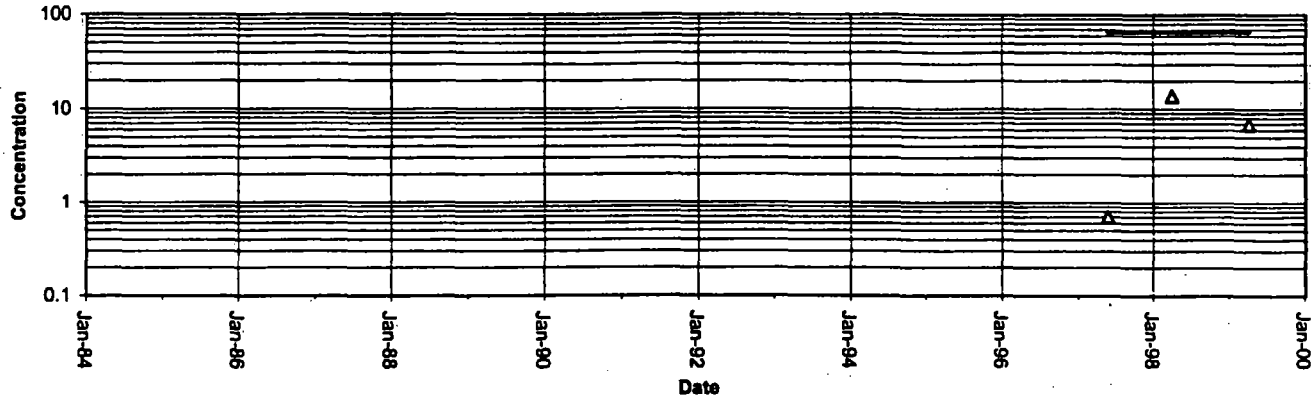
G37S



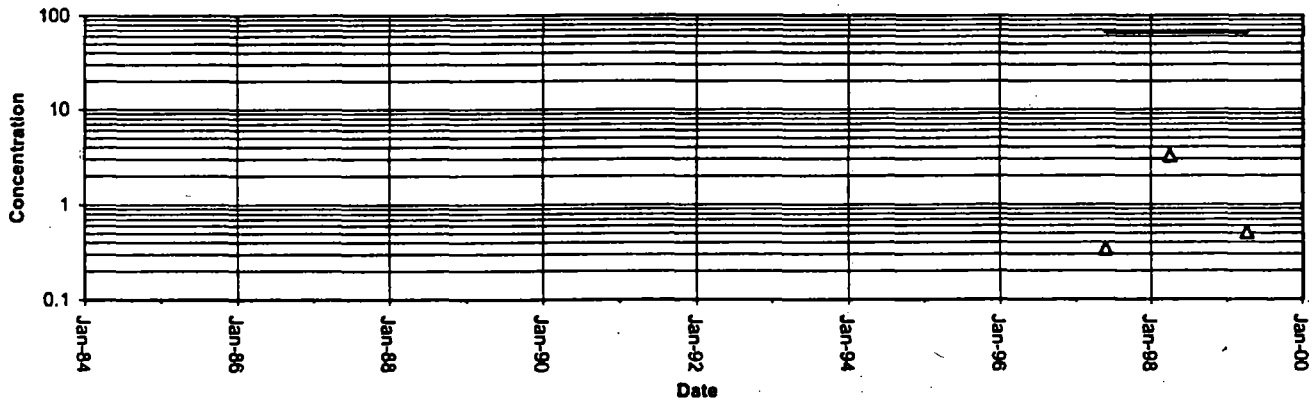
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

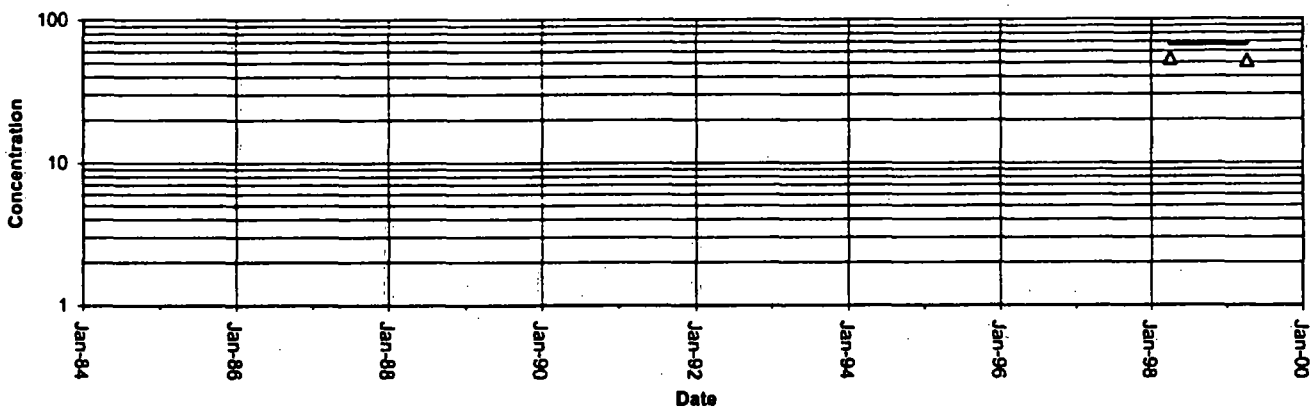
G38



G39



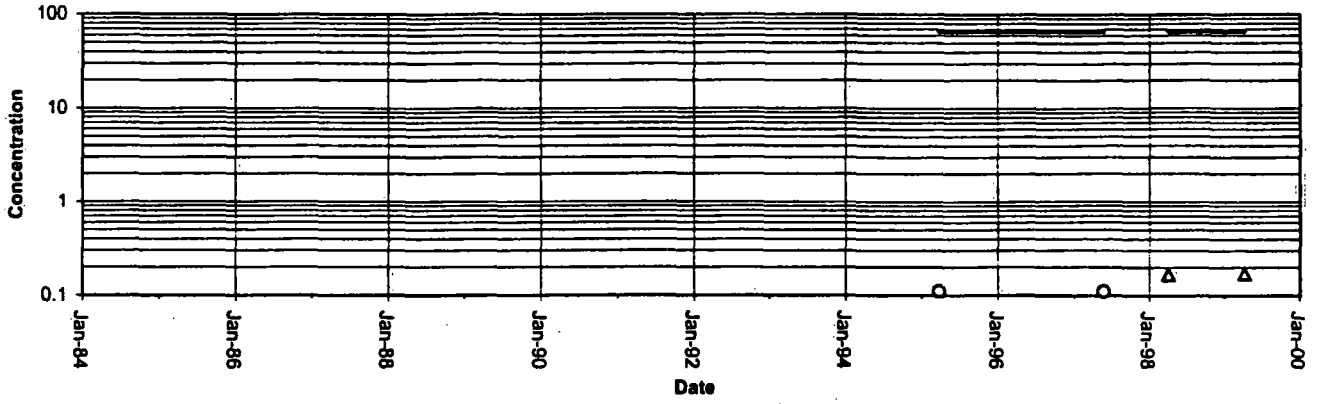
G40



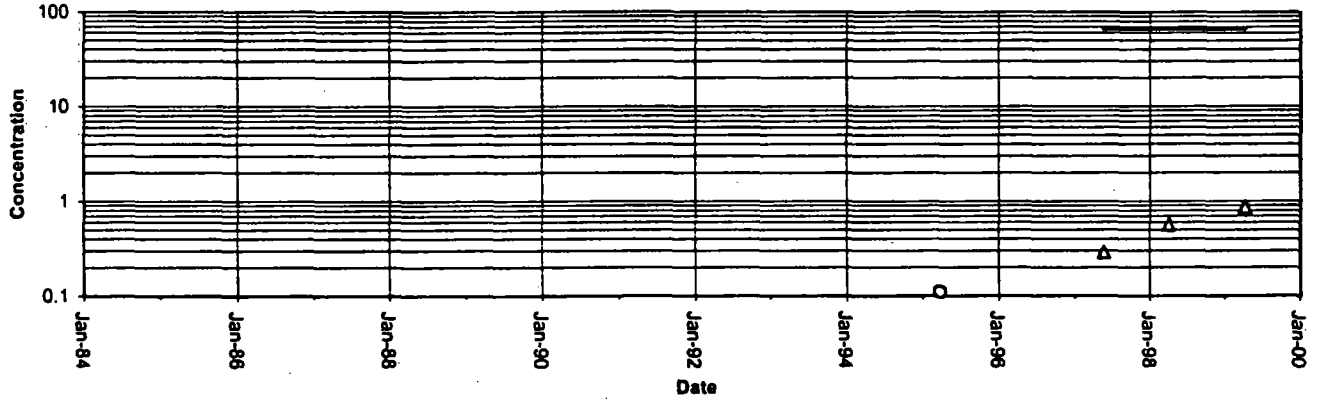
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

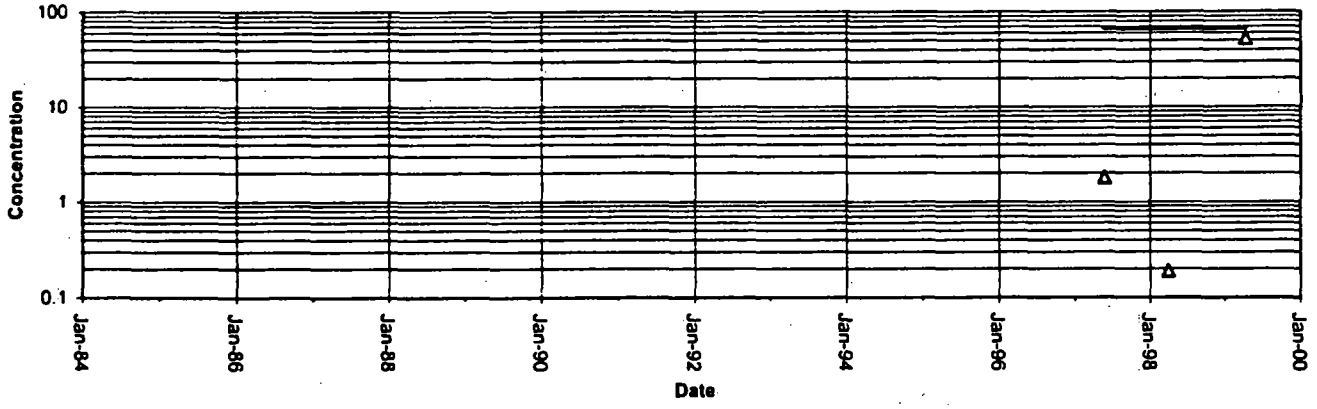
MW106



P1



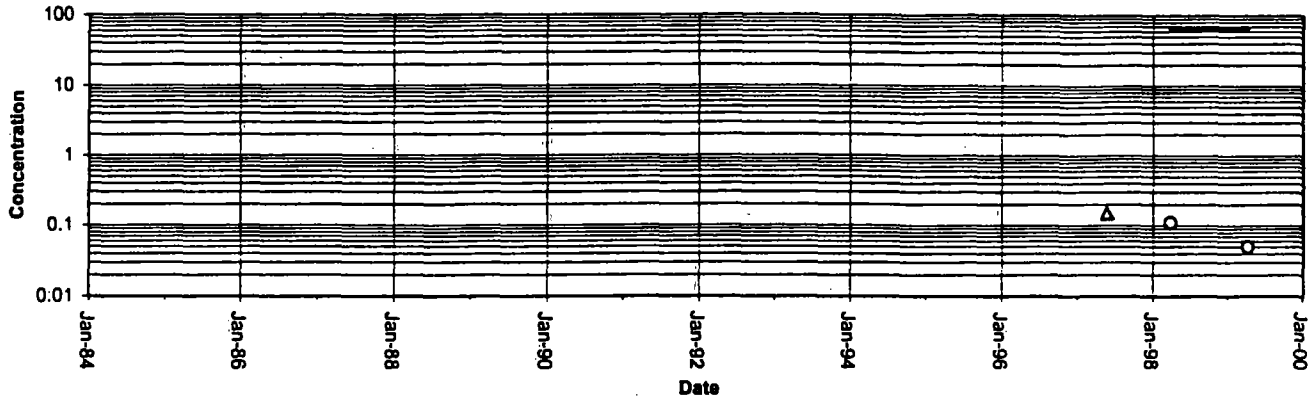
P3R



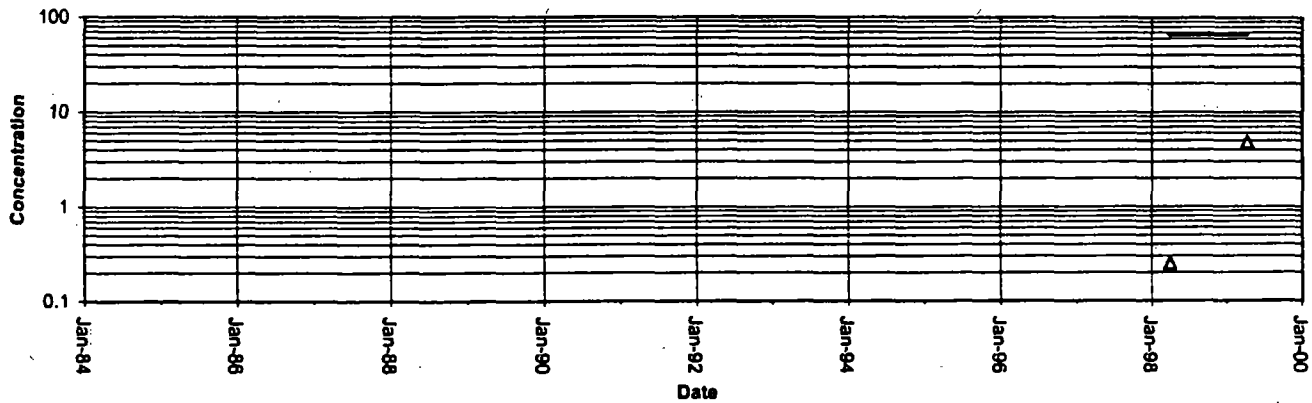
Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

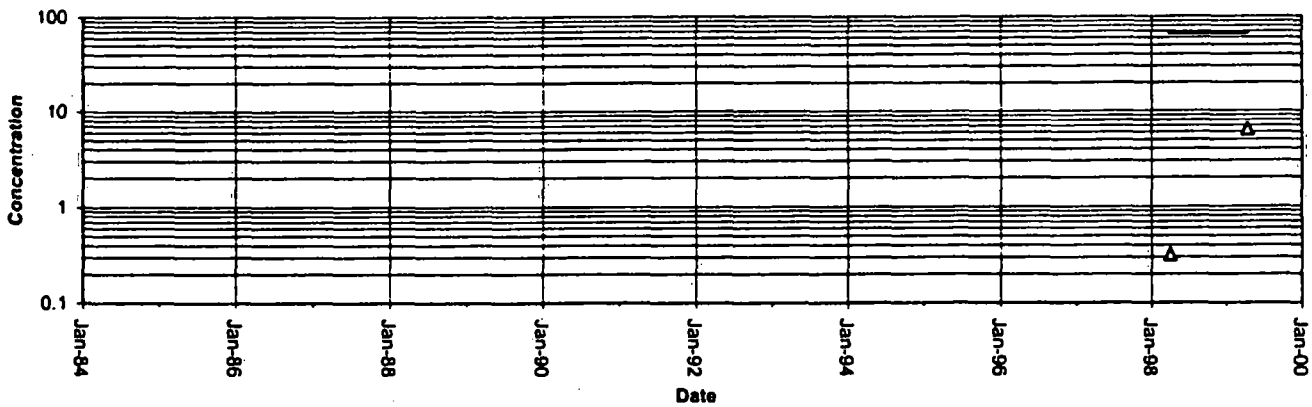
P4R



SG1



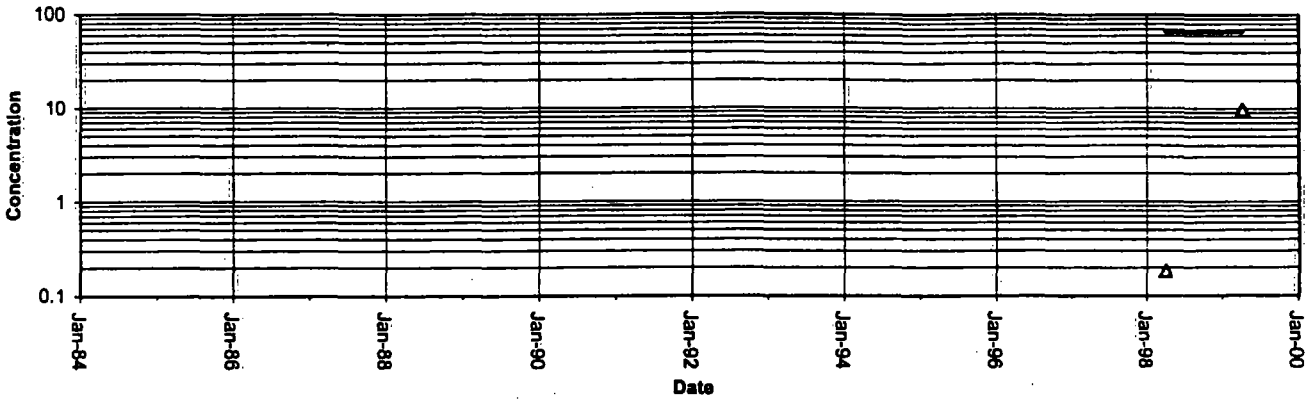
SG3



Aluminum (mg/L)

AGQS Δ Concentration O NonDetect

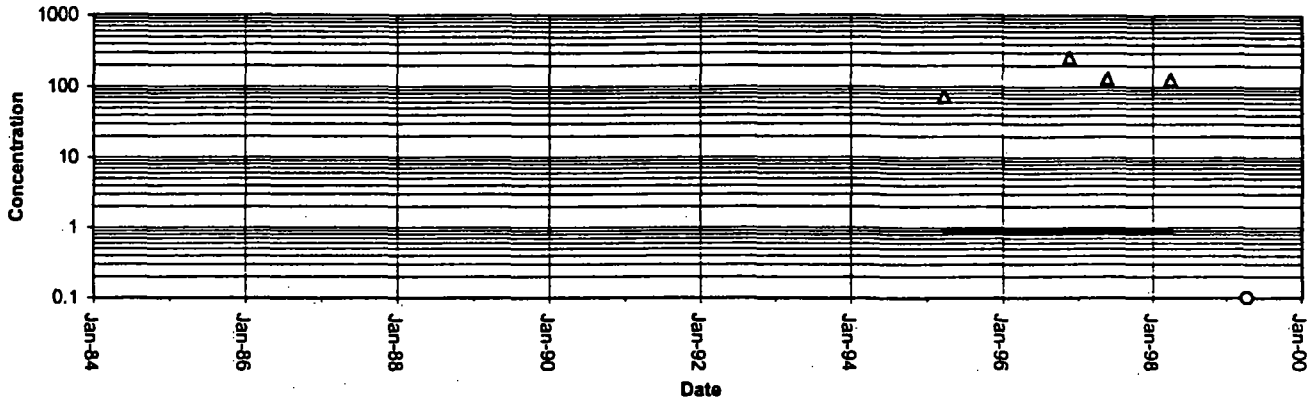
SG4



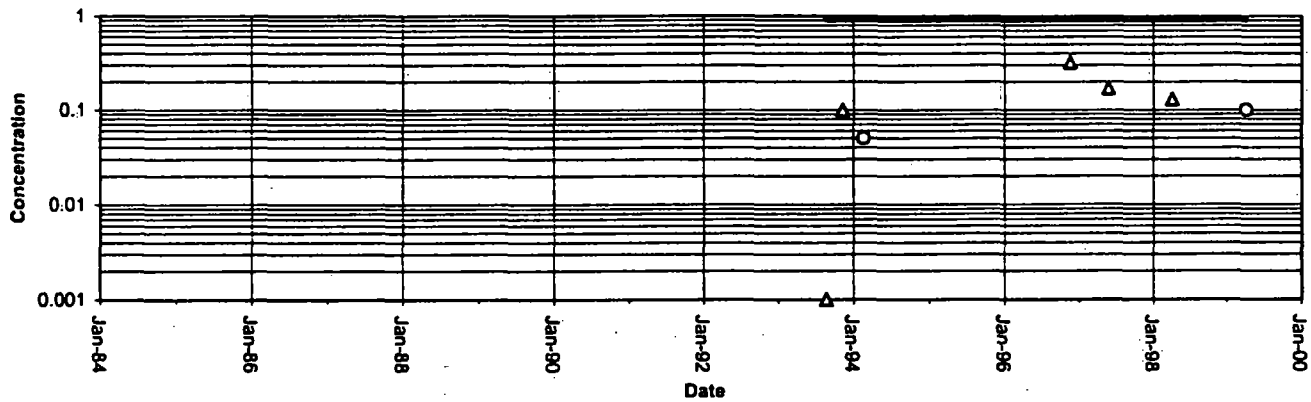
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

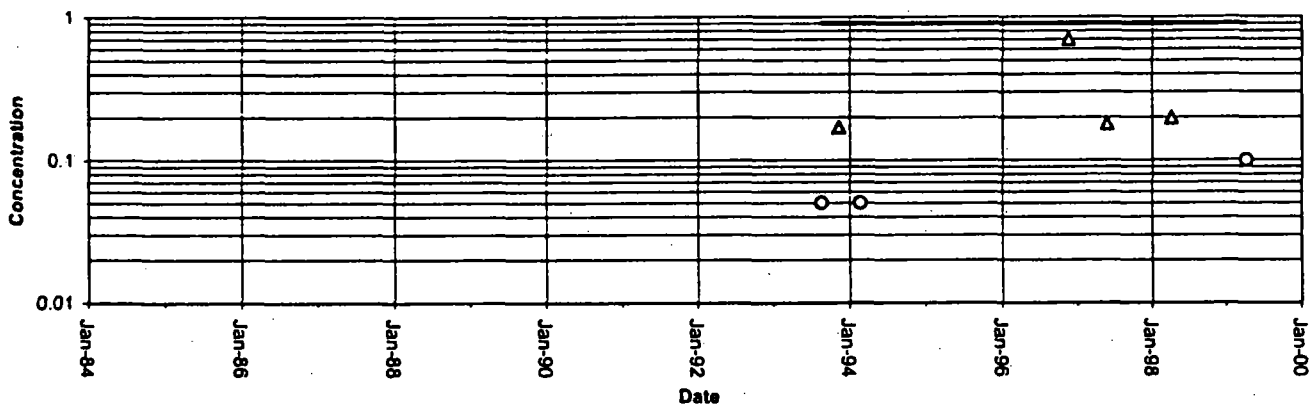
B15R



G109



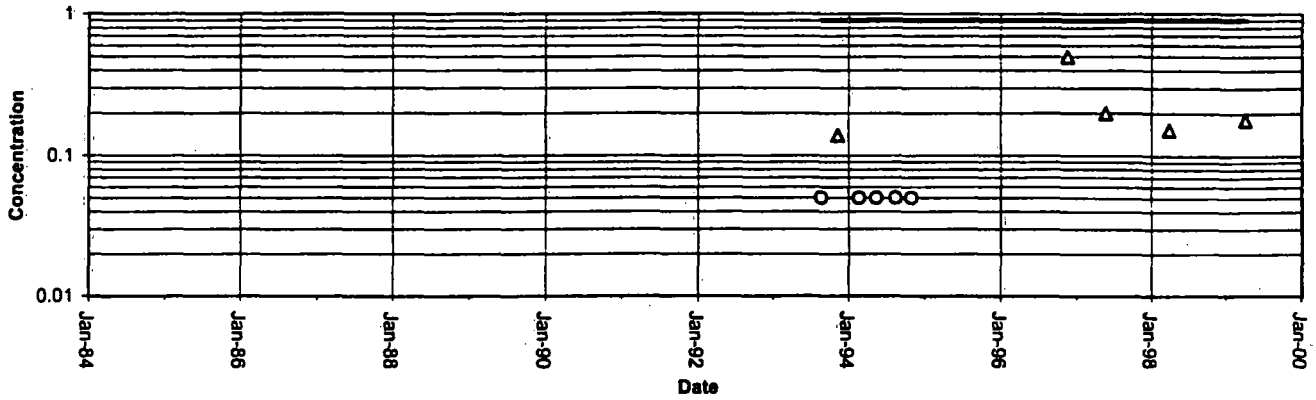
G109A



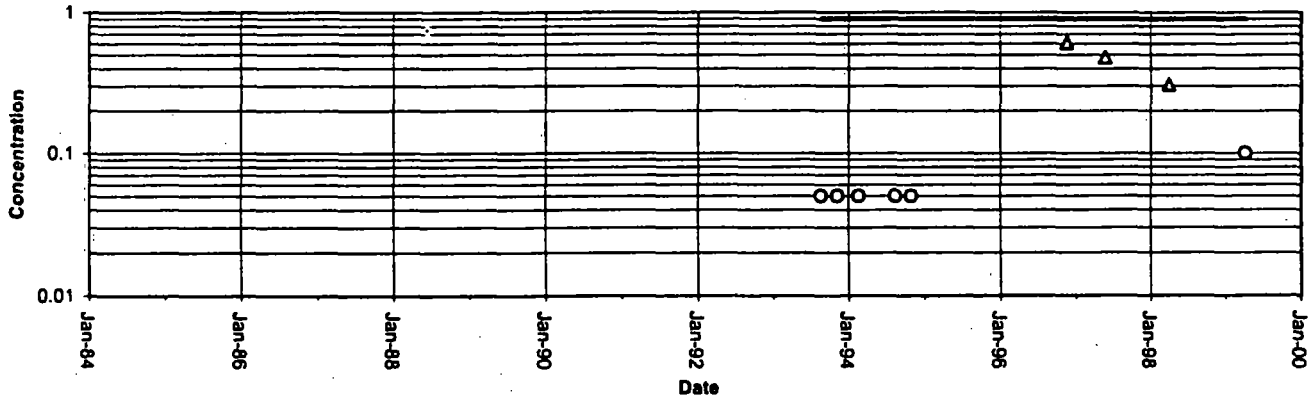
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

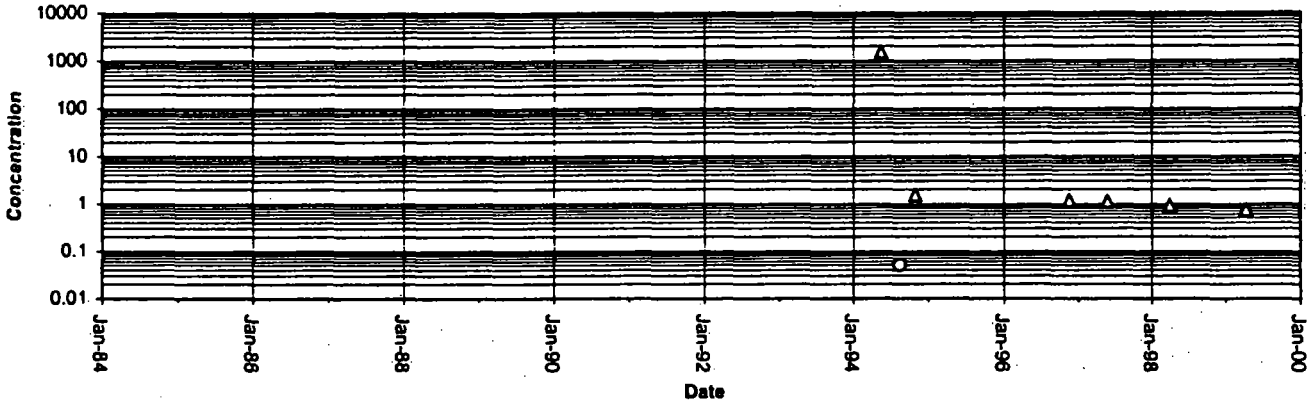
G113



G113A



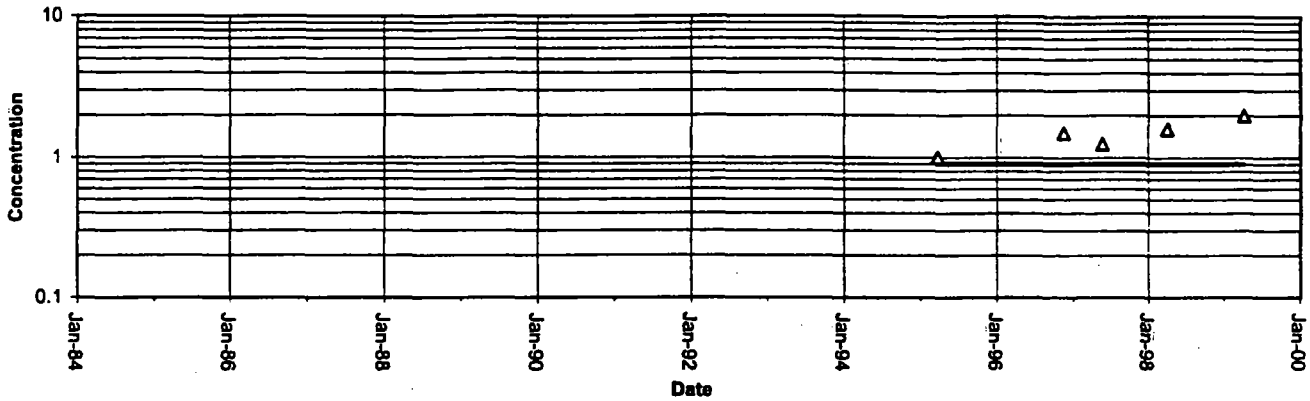
G114



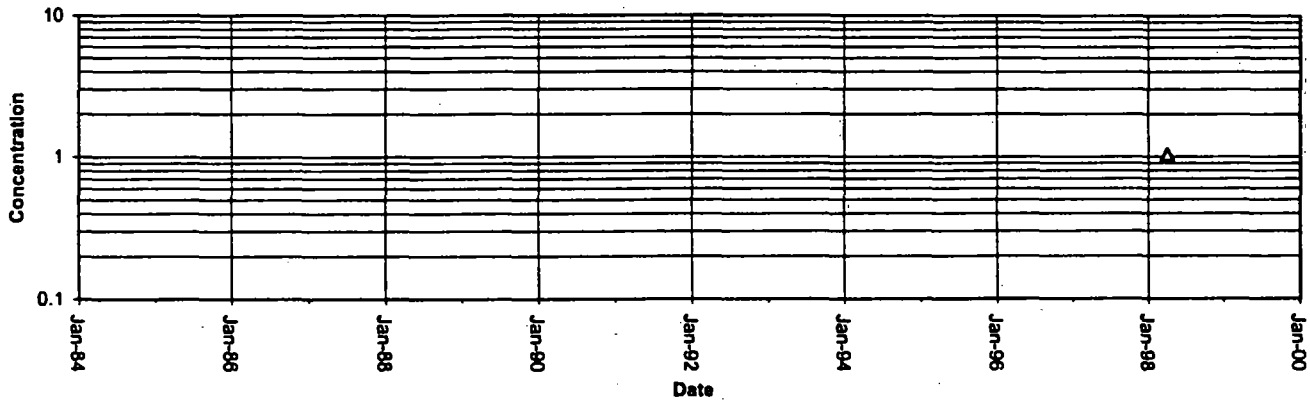
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

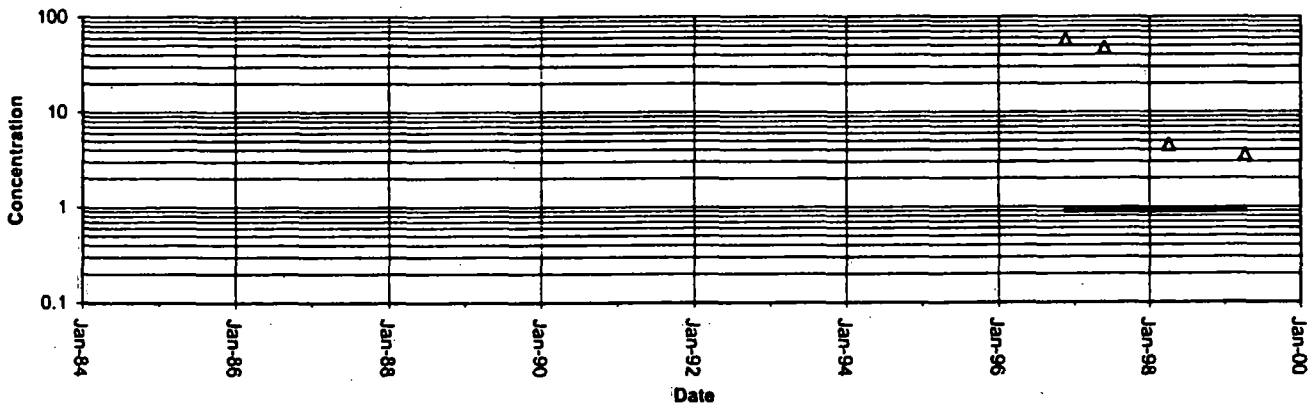
G115



G116



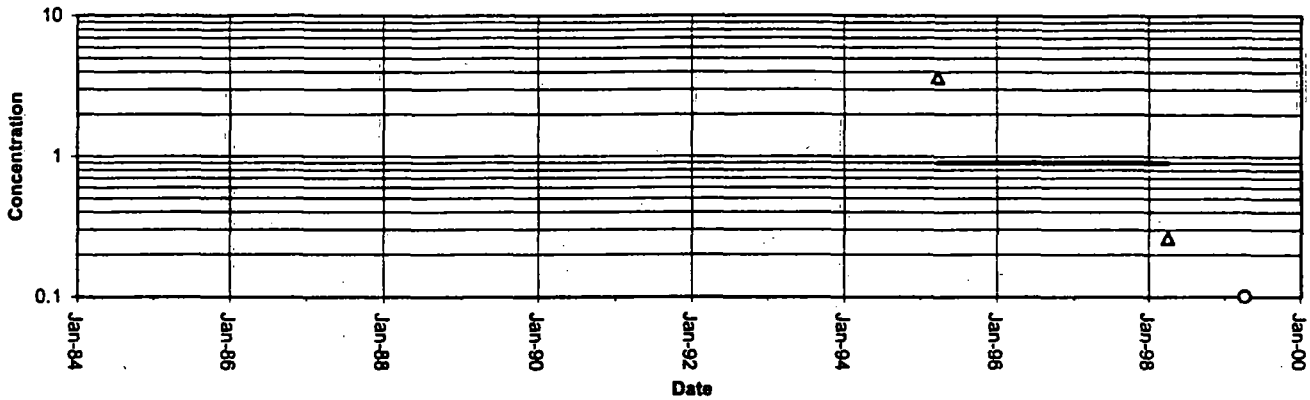
G116A



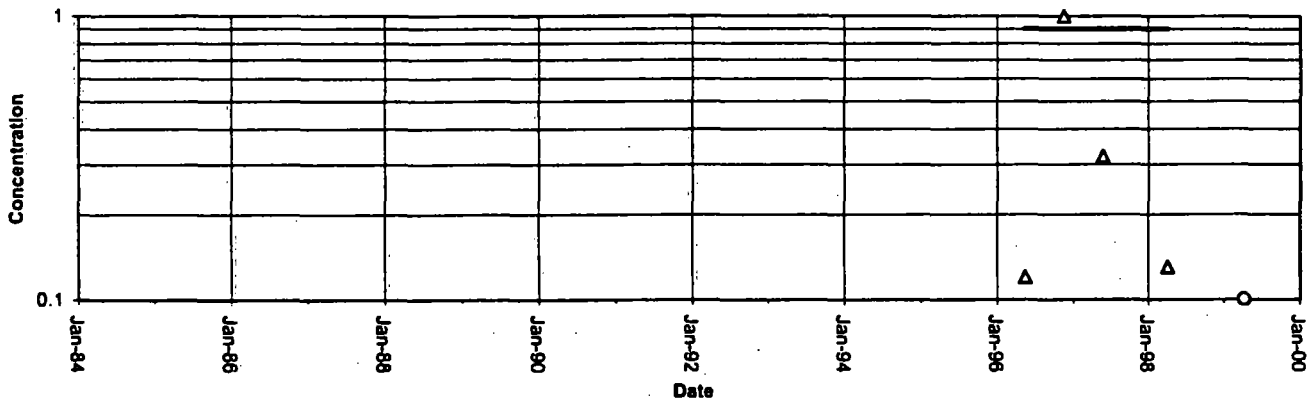
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

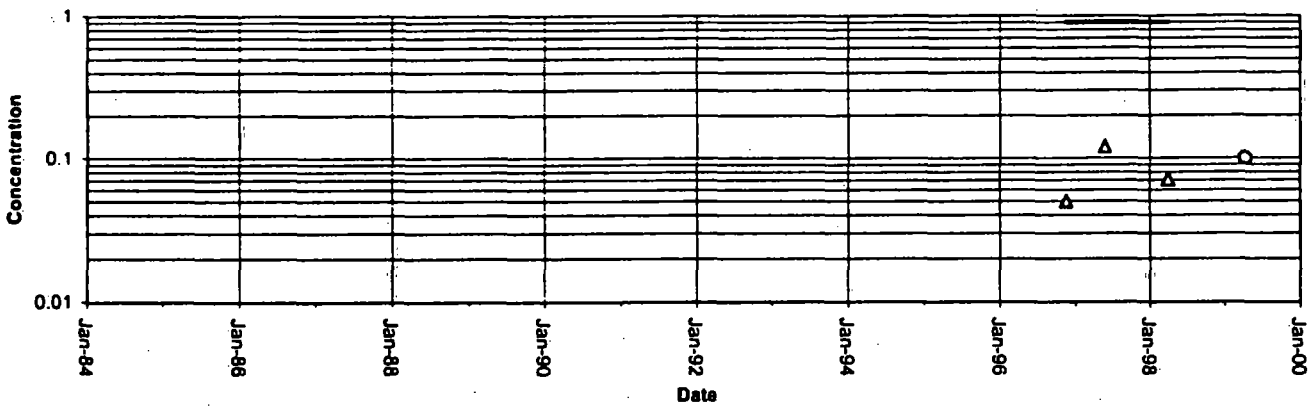
G116D



G117



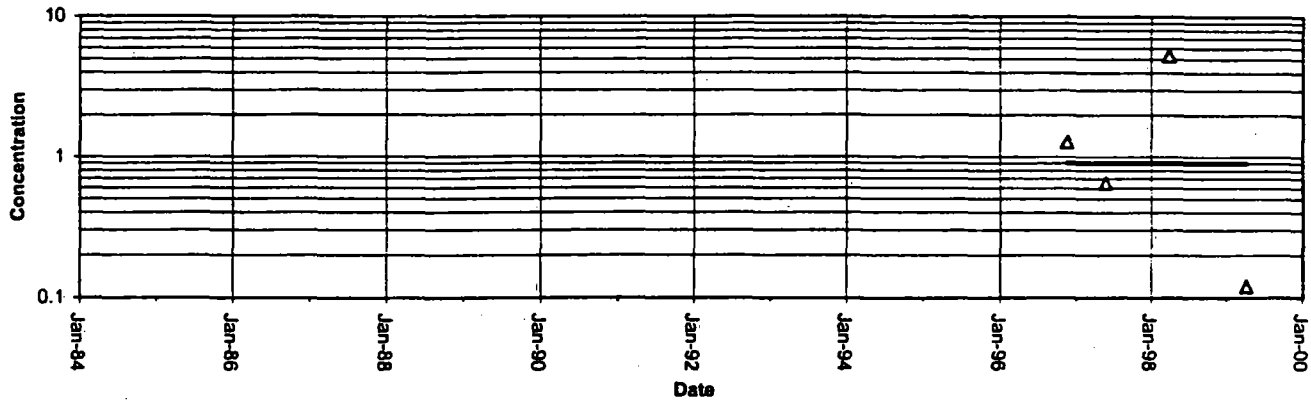
G118A



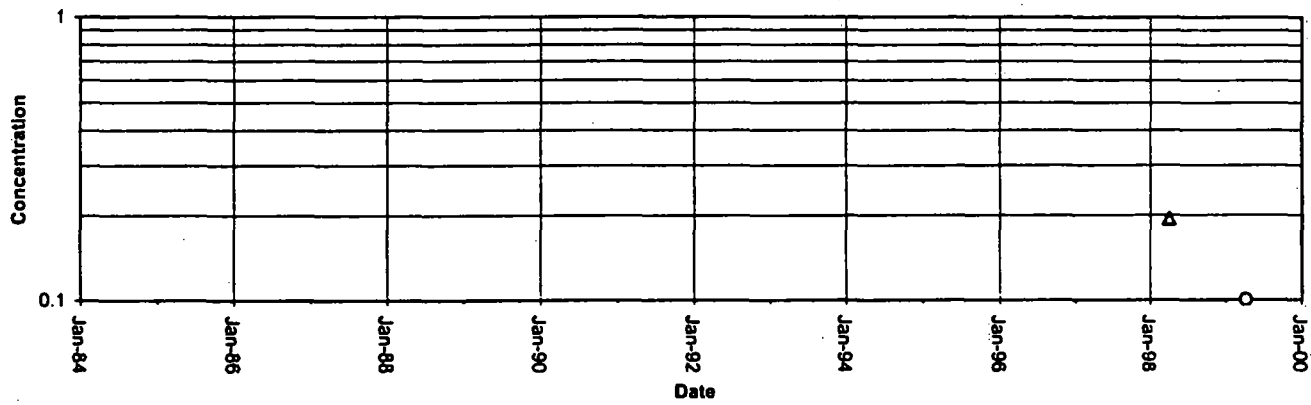
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

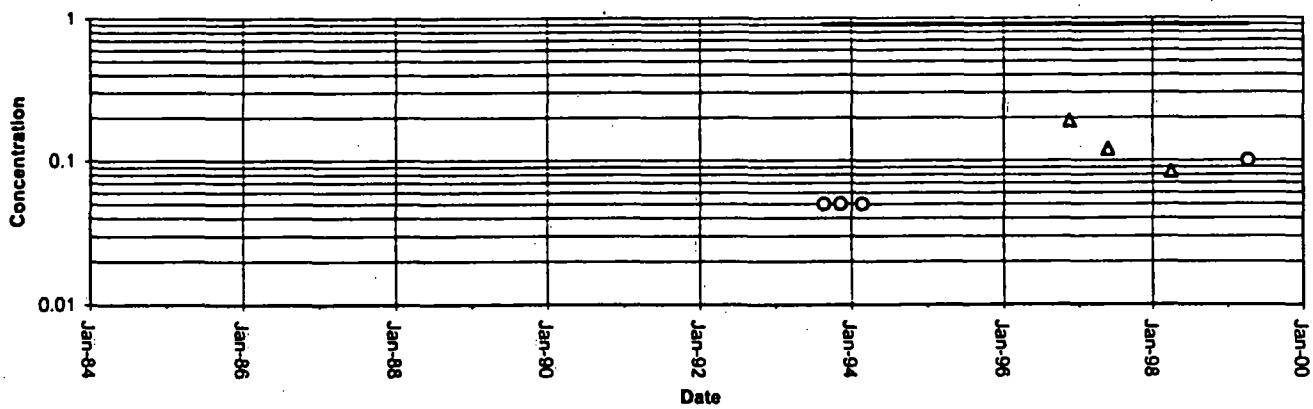
G118R



G119



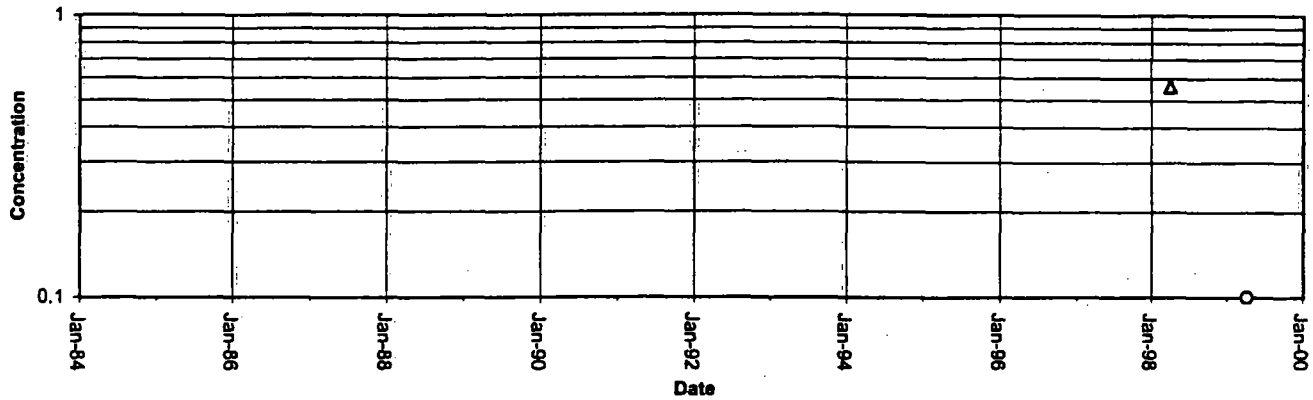
G120B



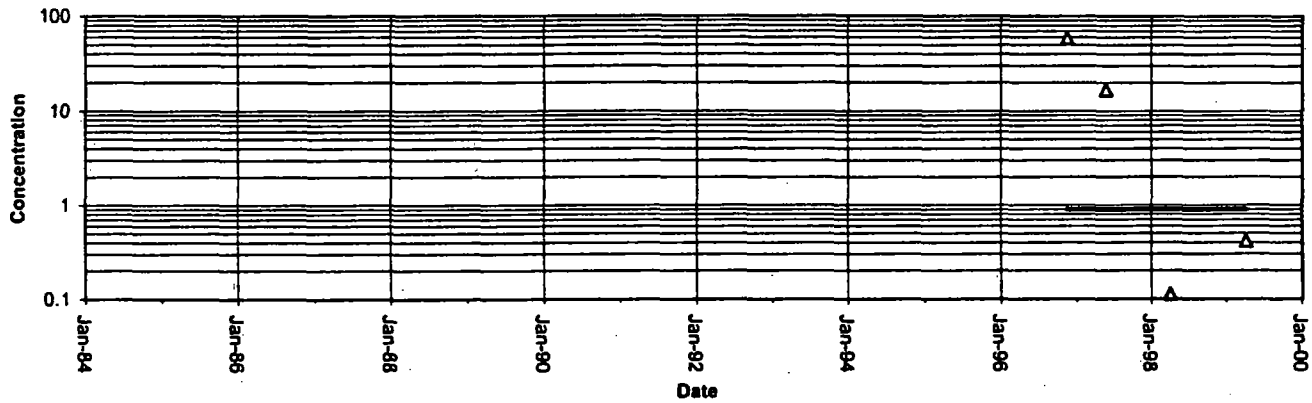
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

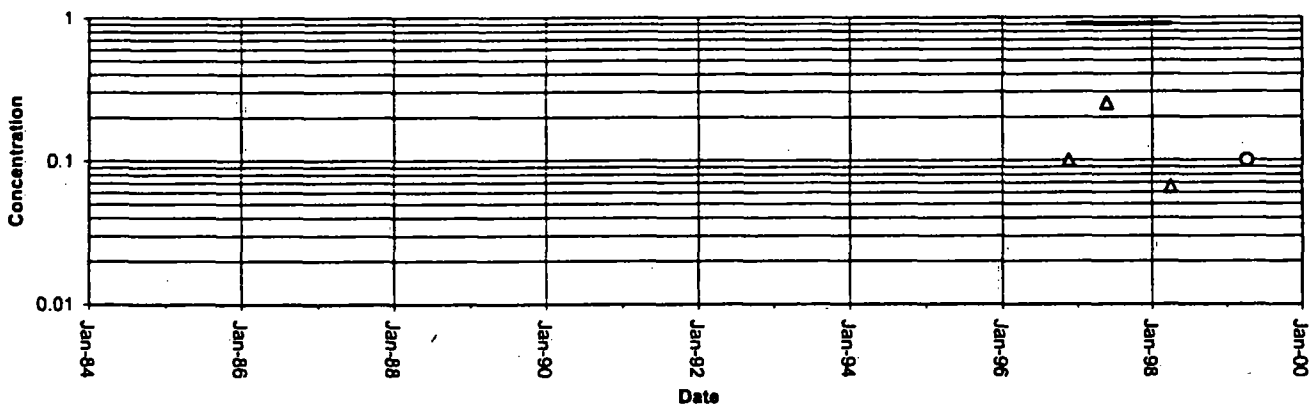
G130



G132



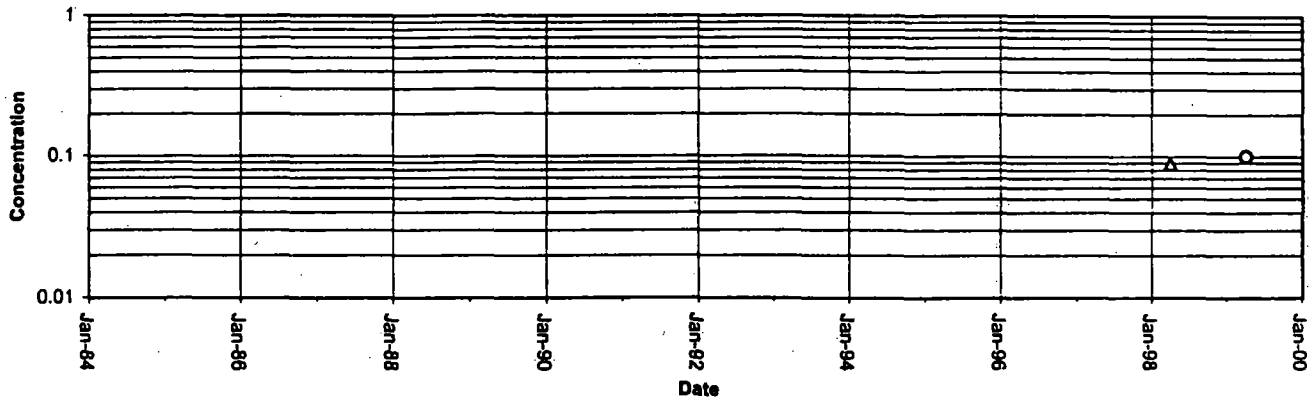
G33D



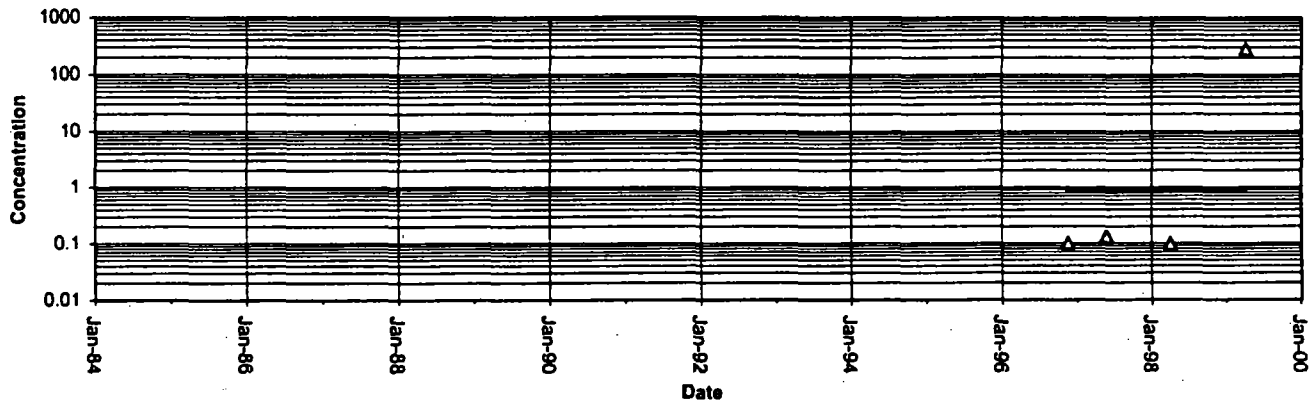
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

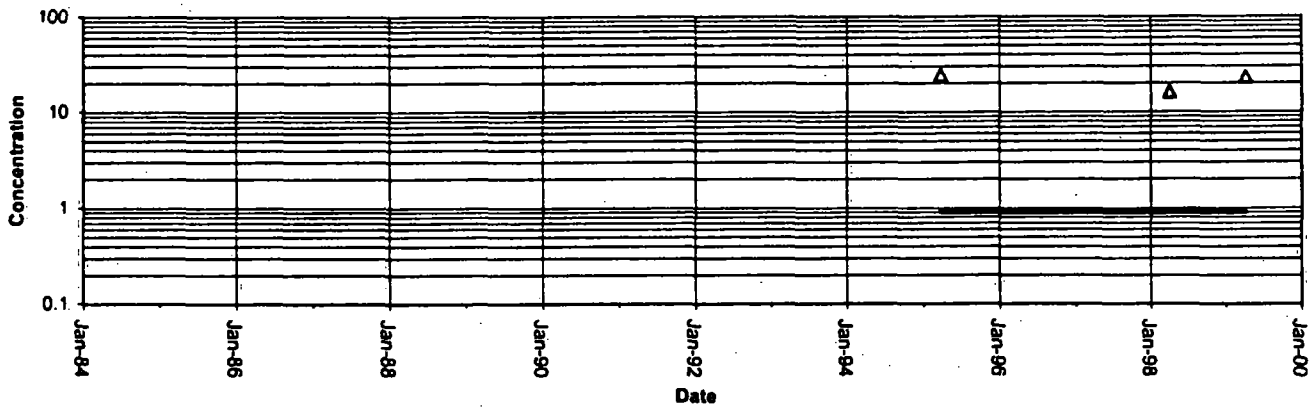
G33S



G34D



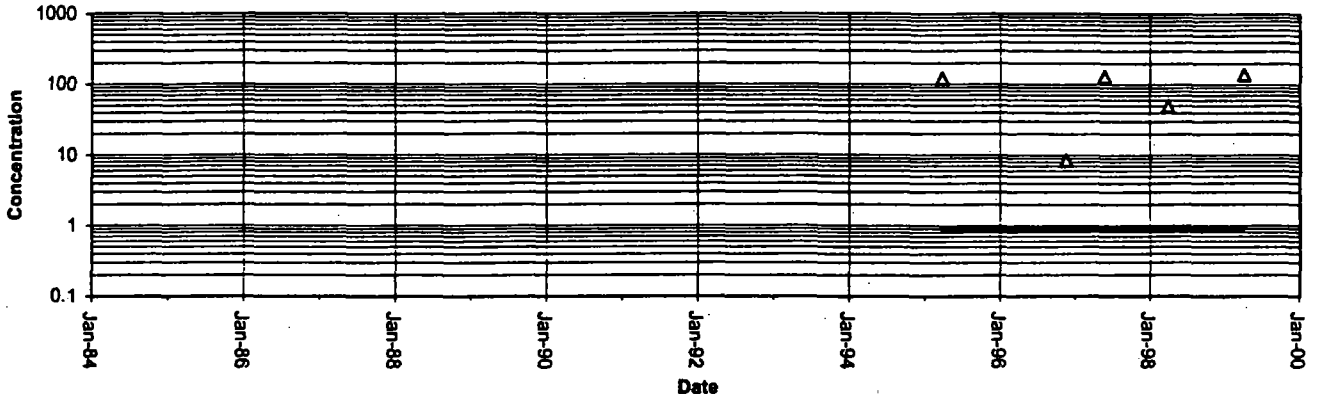
G34S



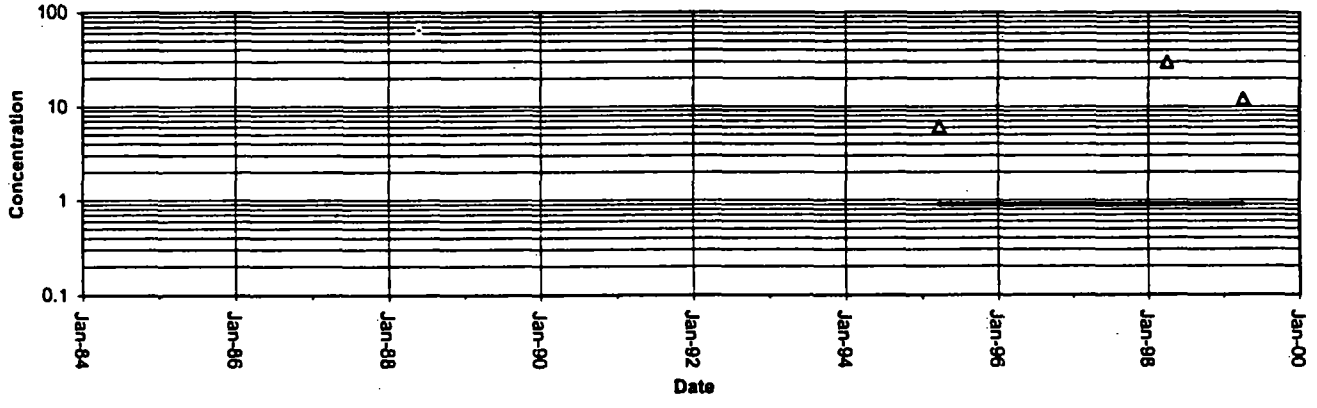
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

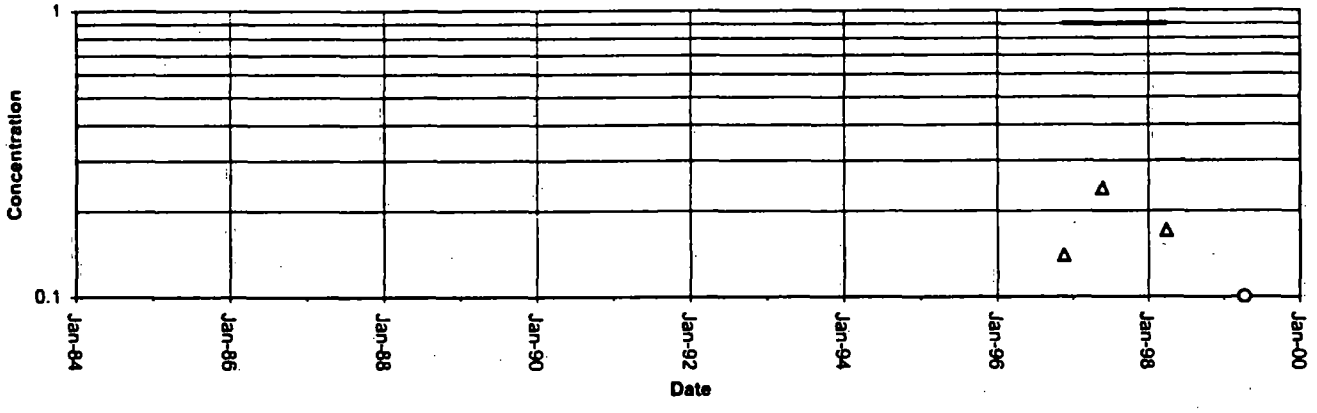
G35D



G35S



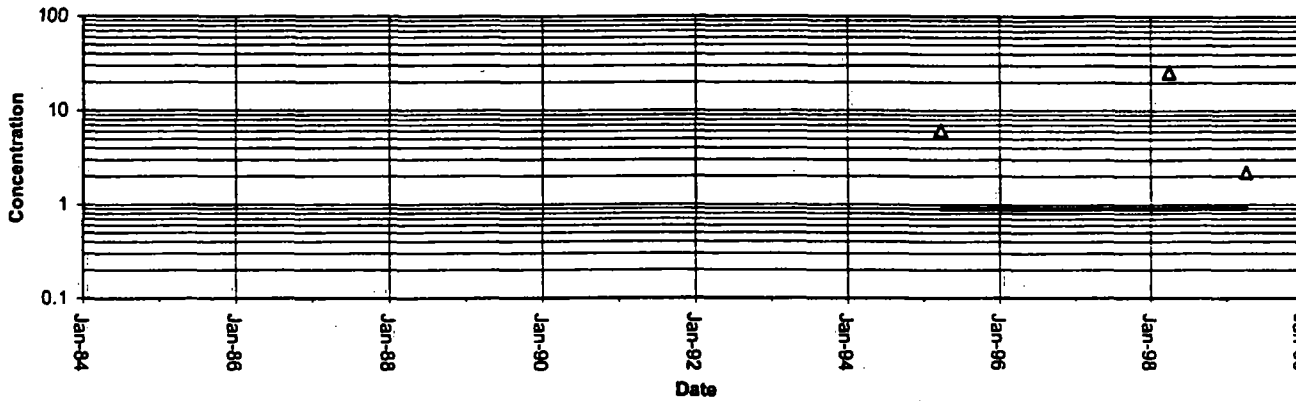
G36



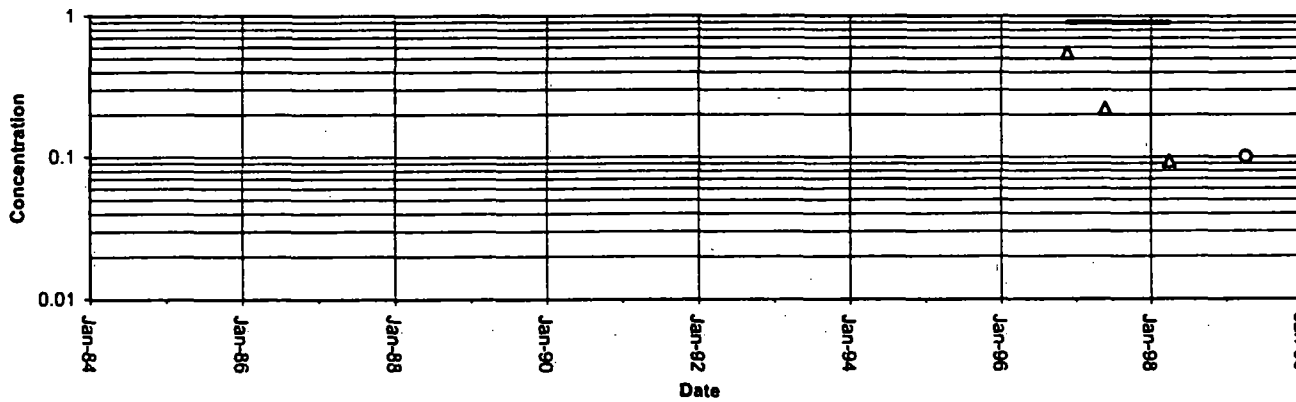
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

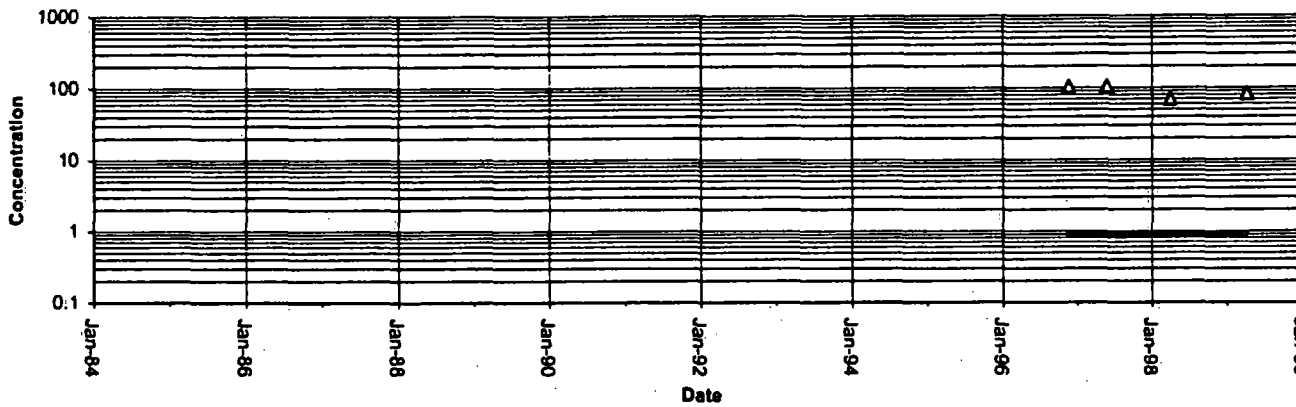
G37D



G37S



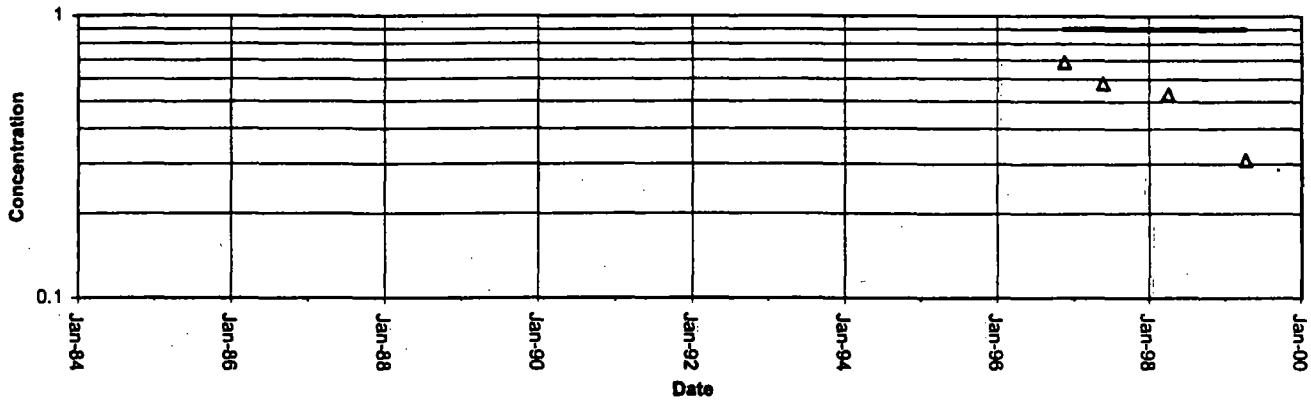
G38



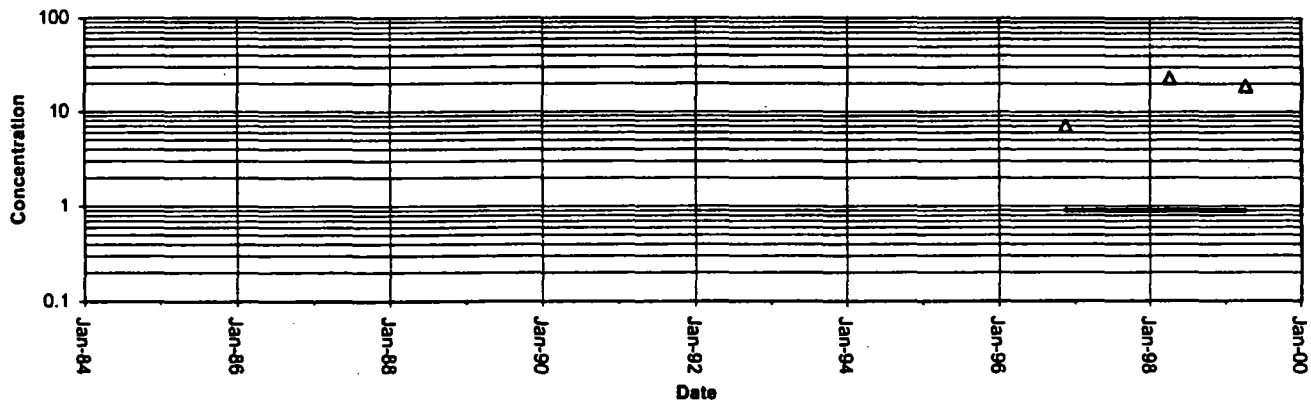
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

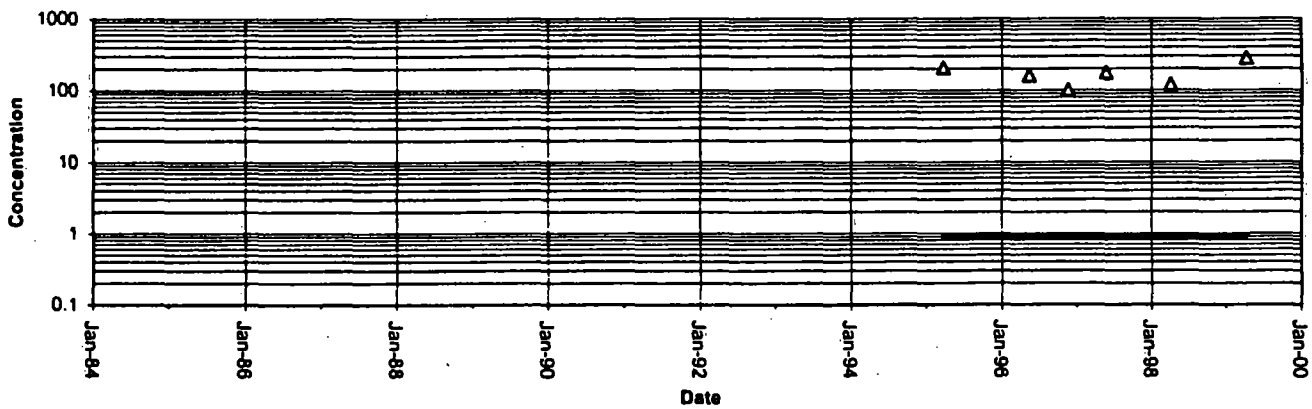
G39



G40



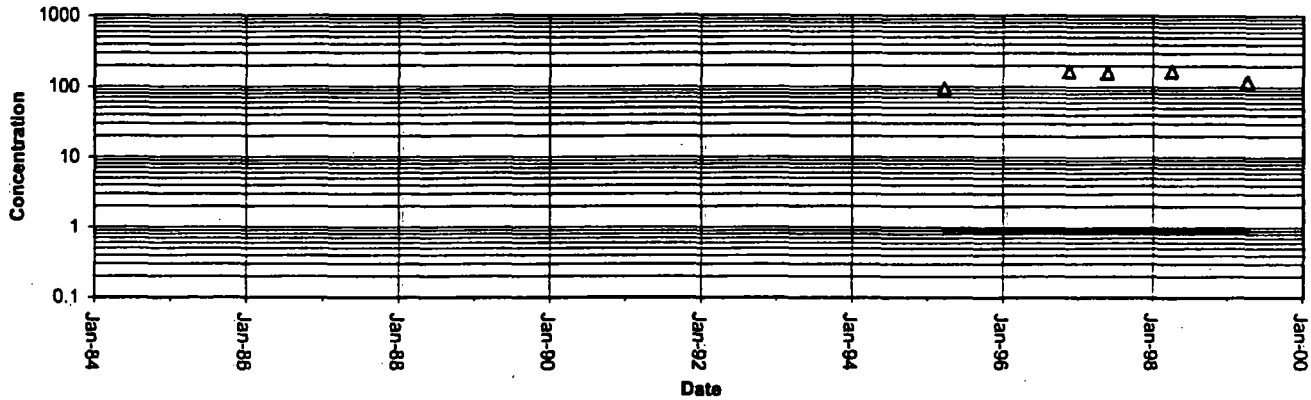
MW106



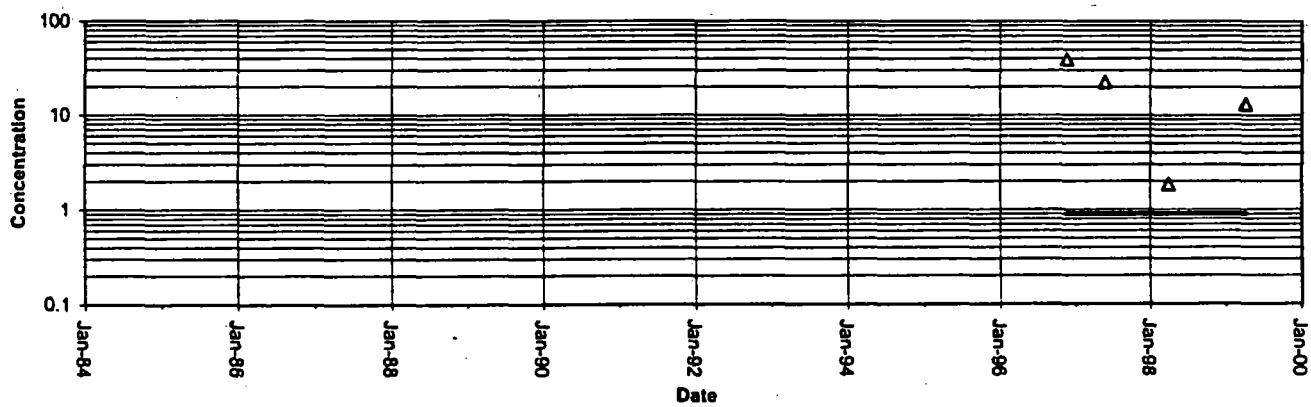
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

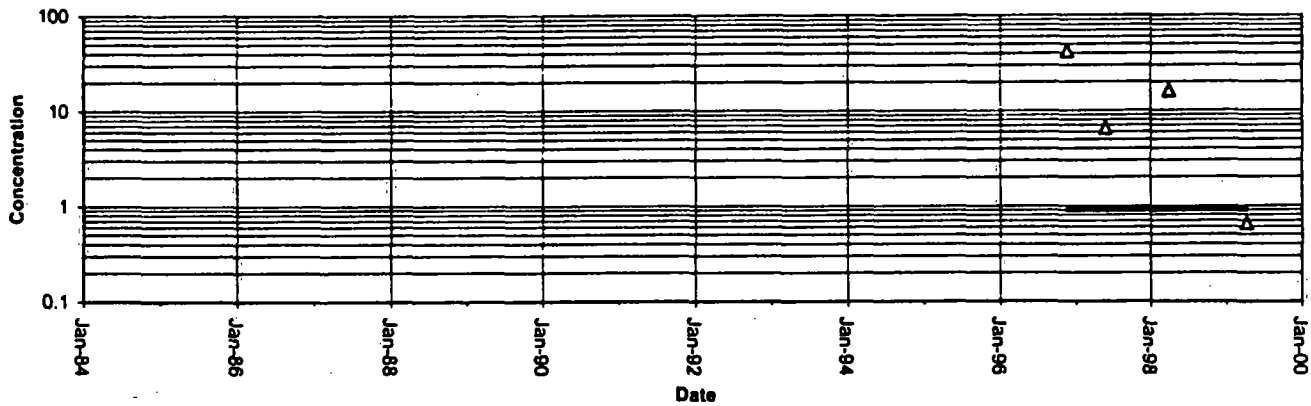
P1



P3R



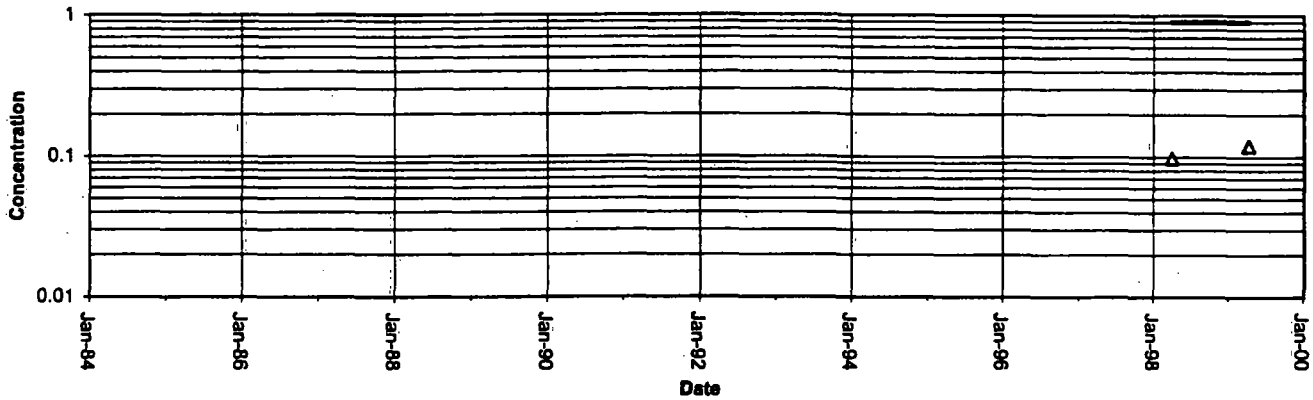
P4R



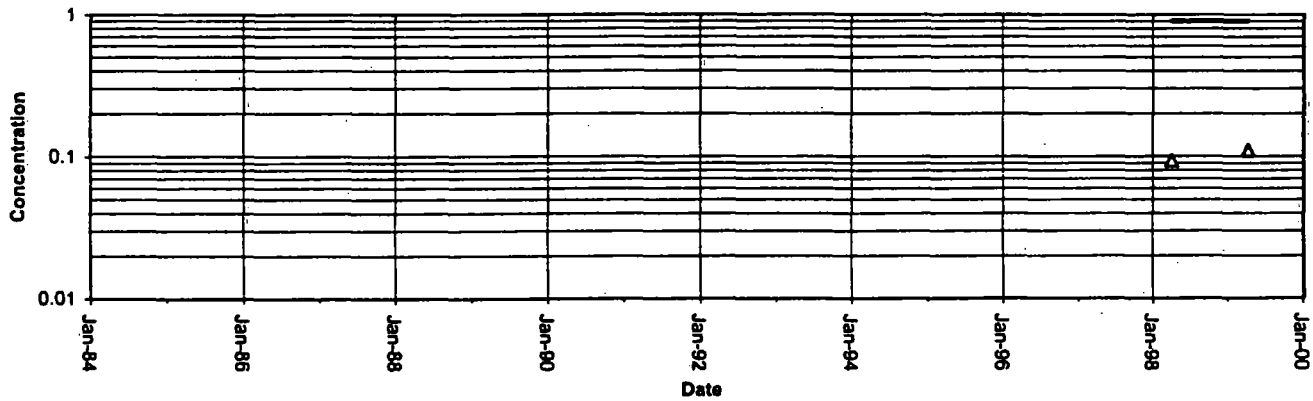
Ammonia, Nitrogen (mg/L)

AGQS Δ Concentration O NonDetect

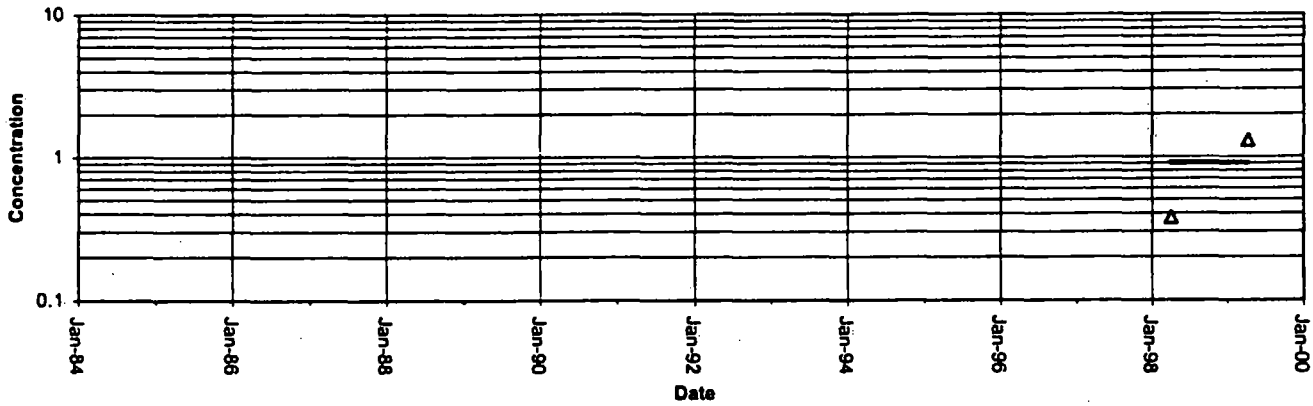
SG1



SG3



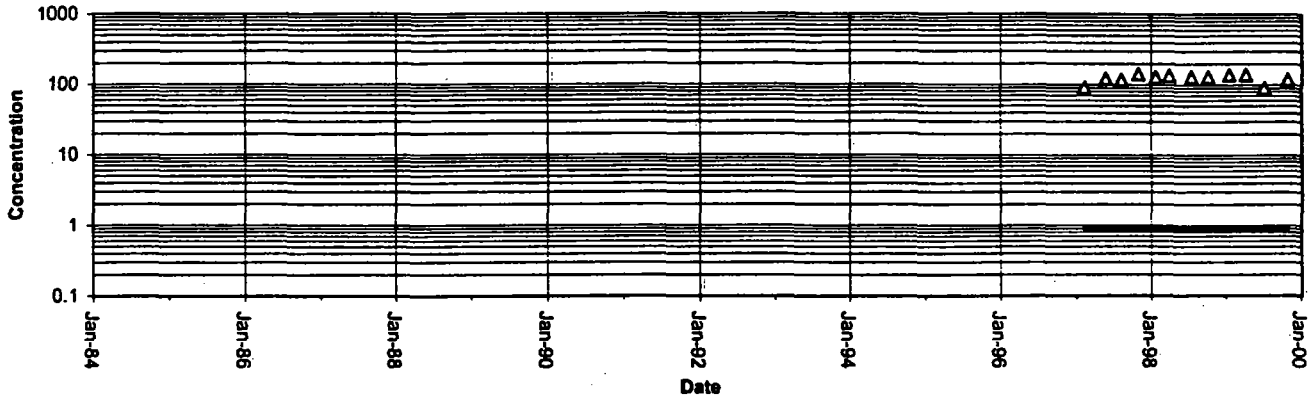
SG4



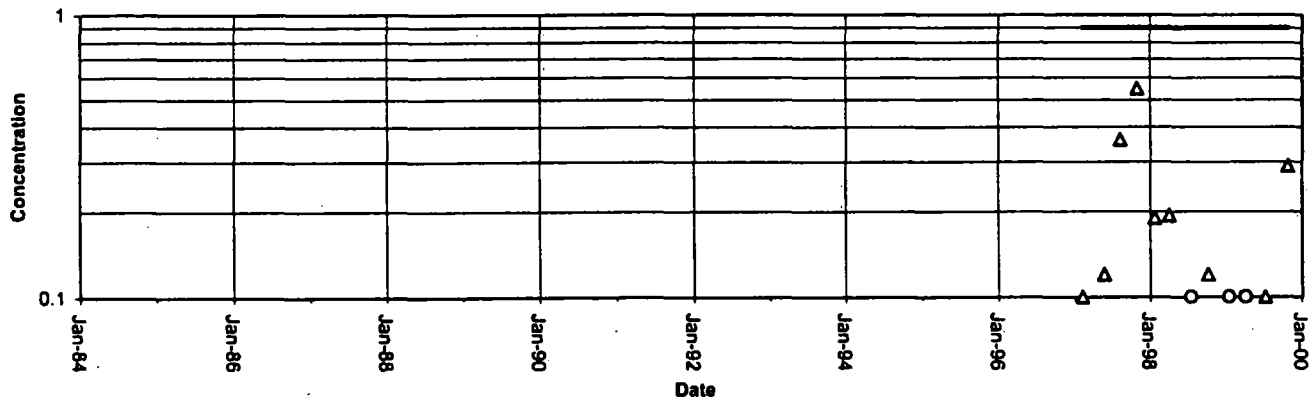
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

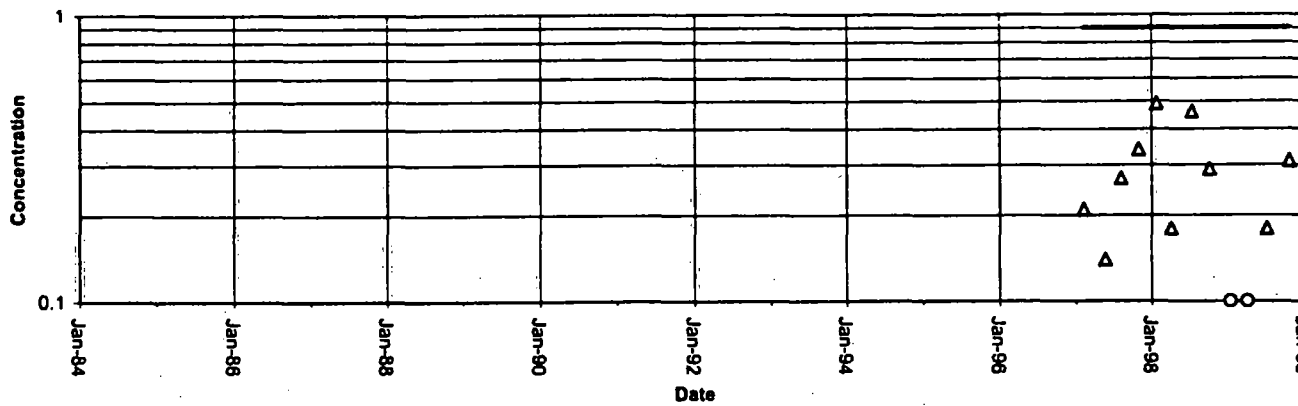
B15R



G109



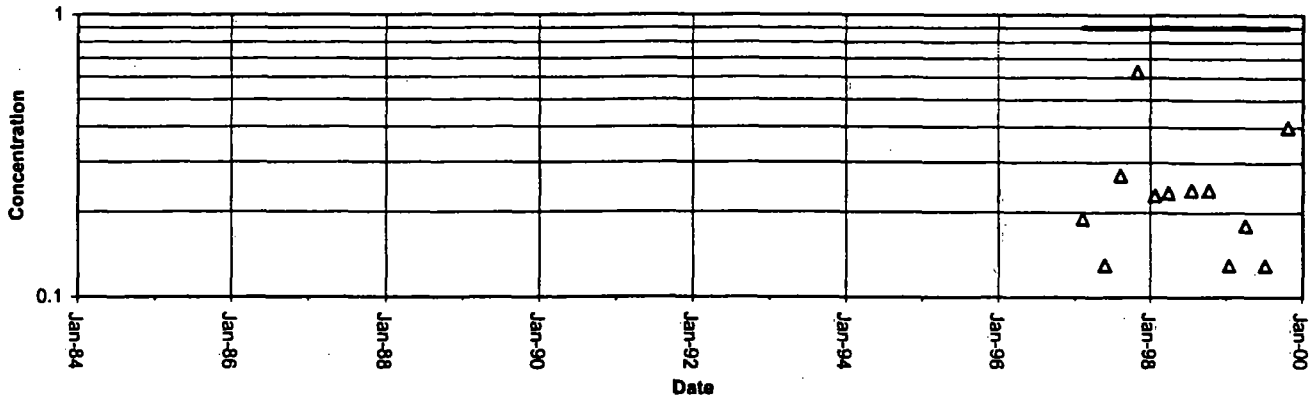
G109A



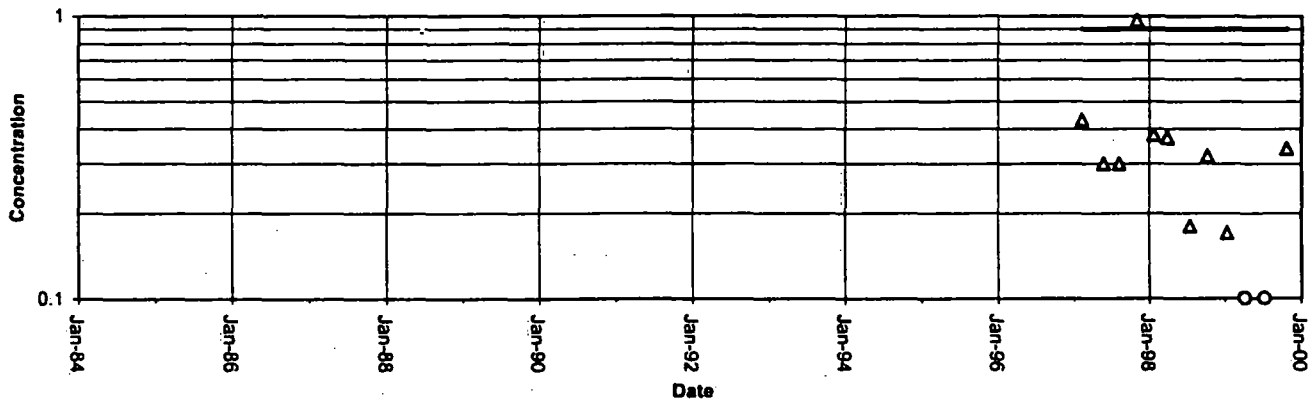
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

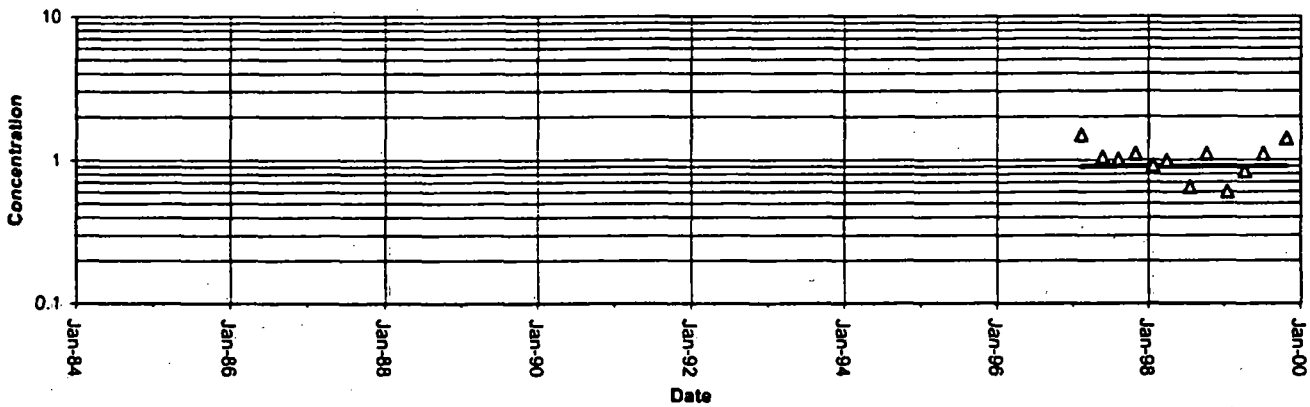
G113



G113A



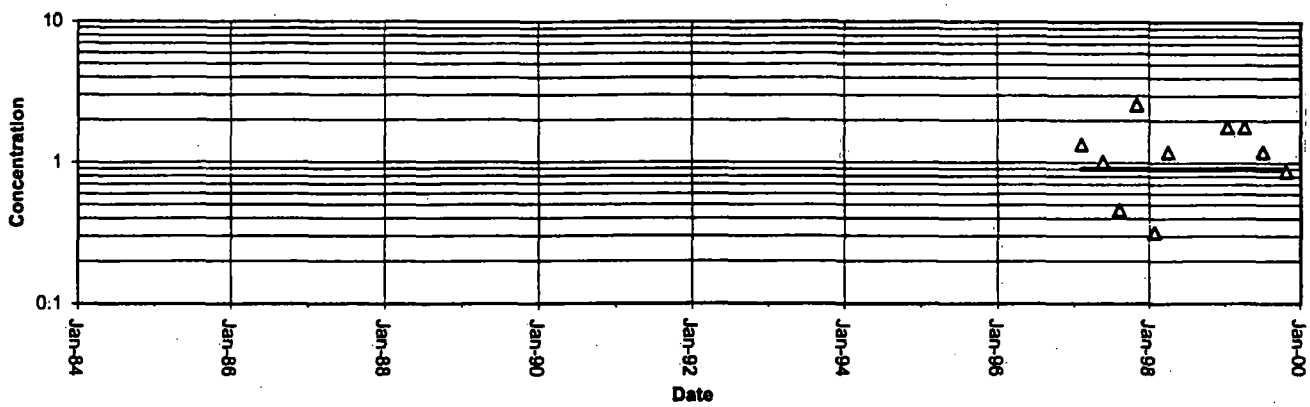
G114



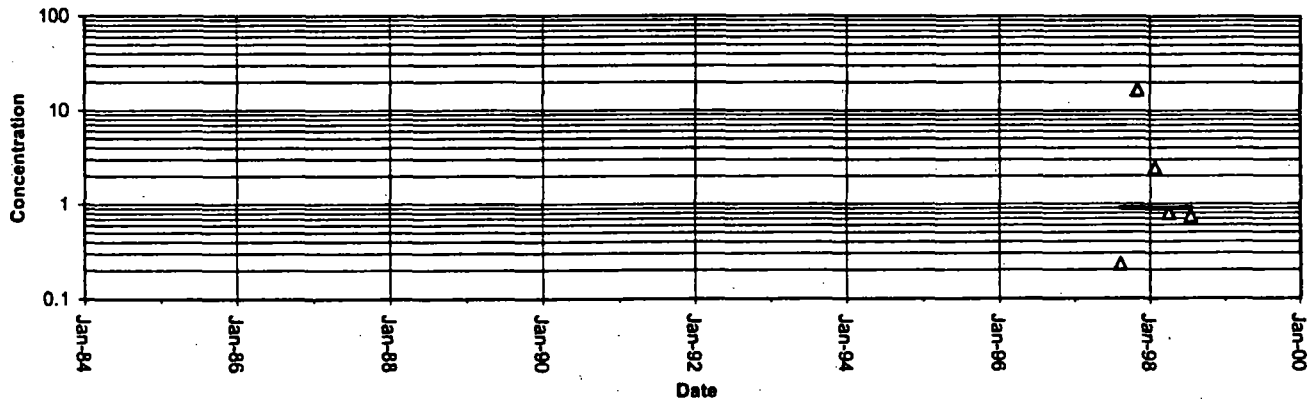
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

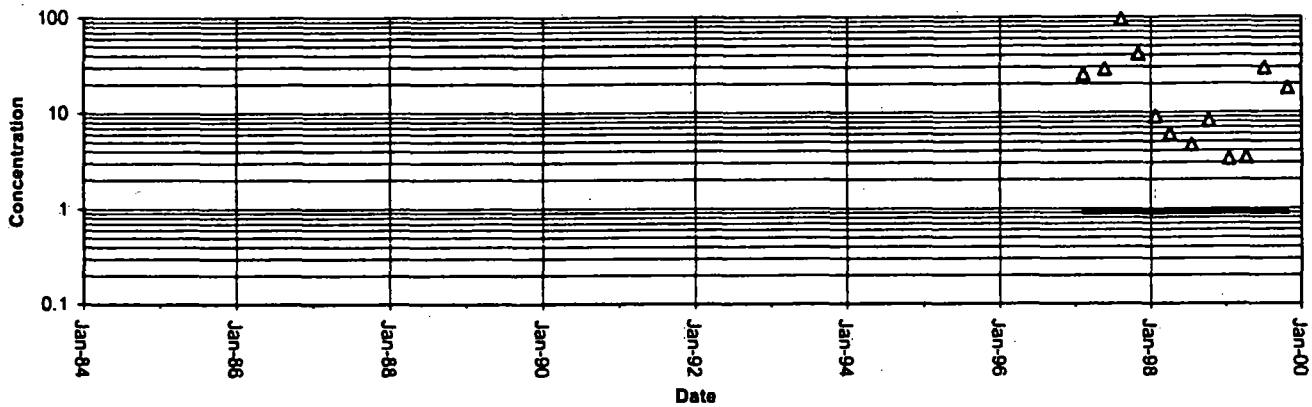
G115



G116



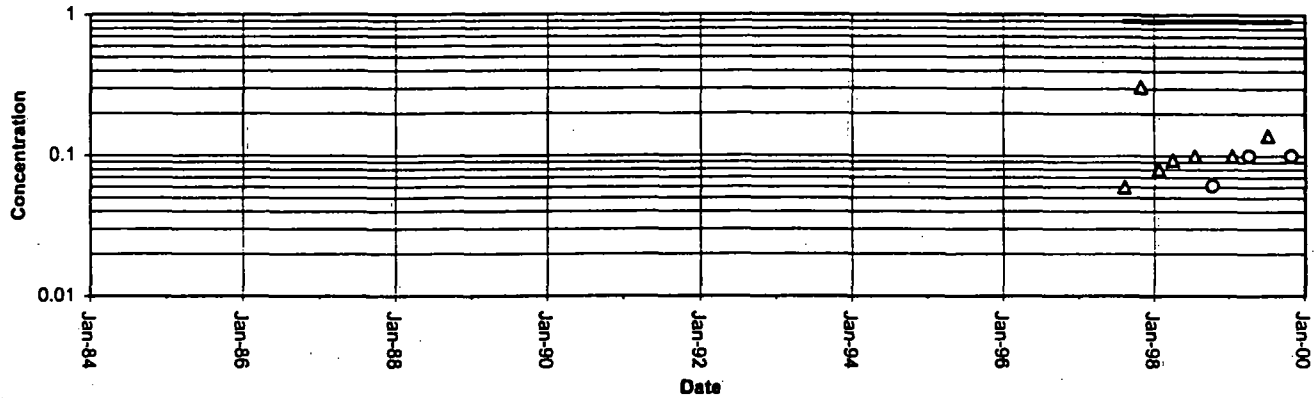
G116A



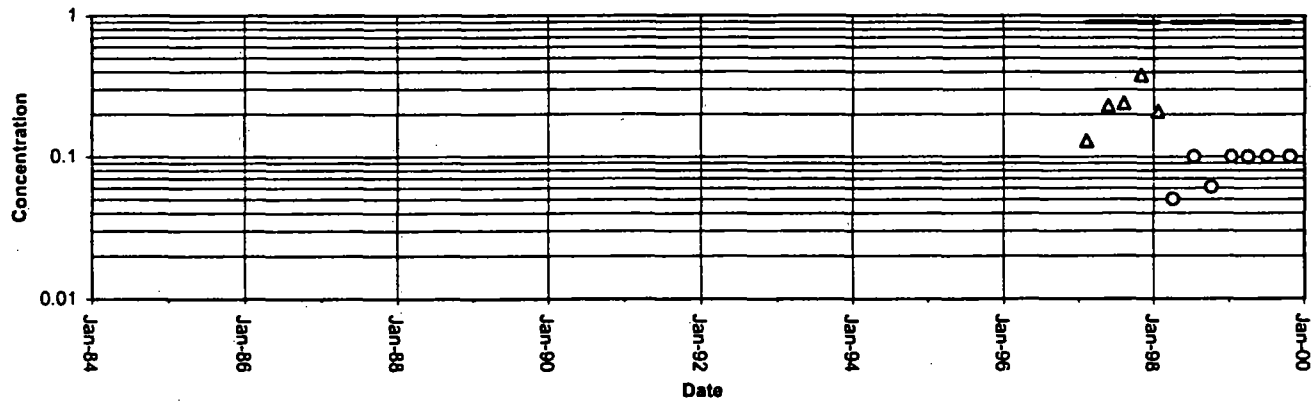
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

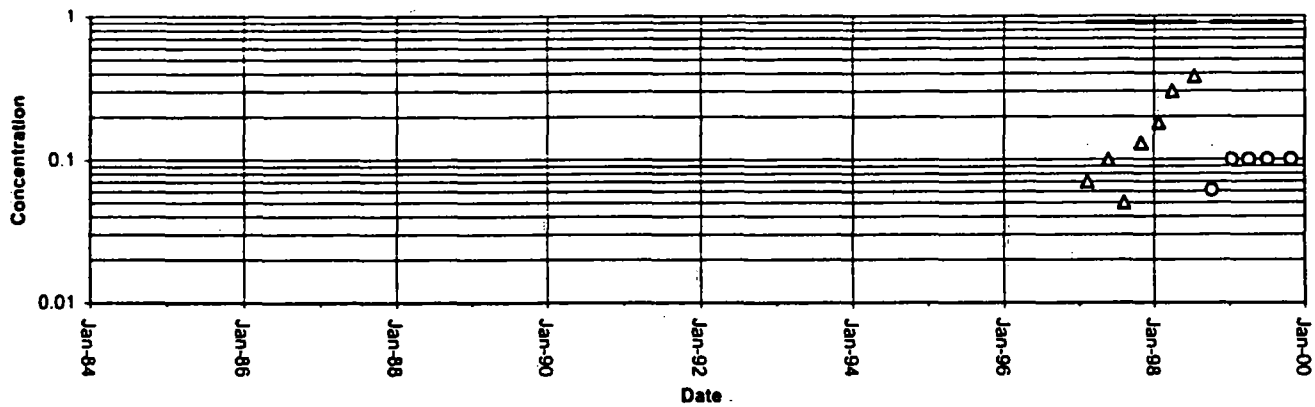
G116D



G117



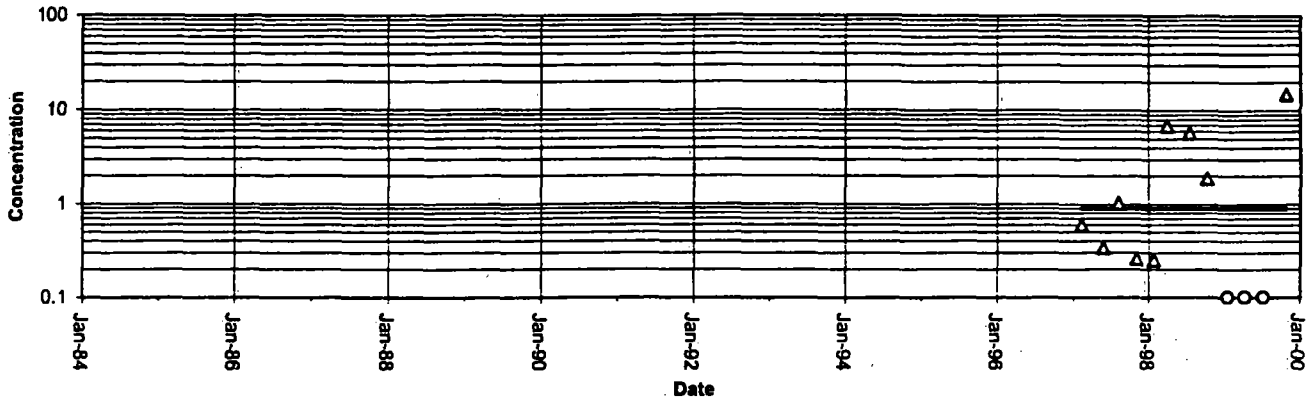
G118A



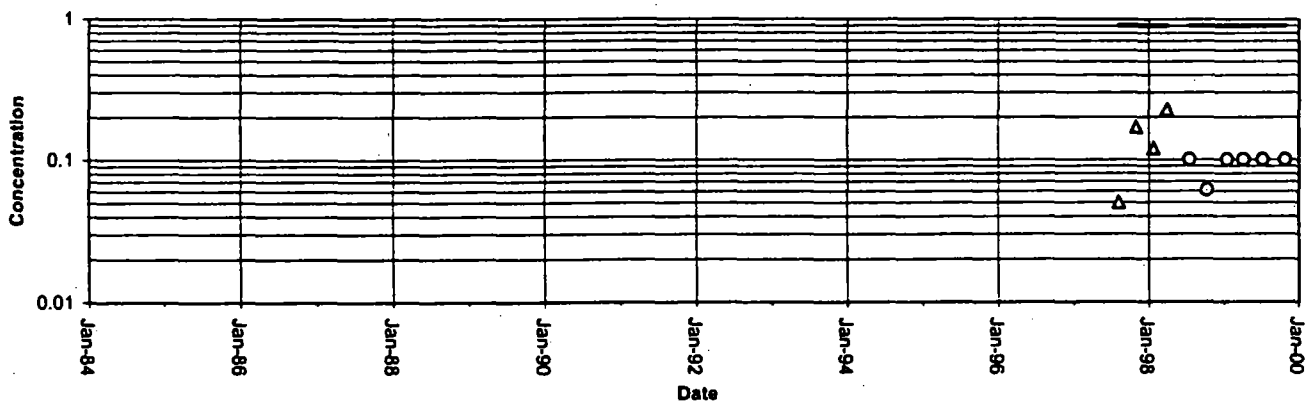
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

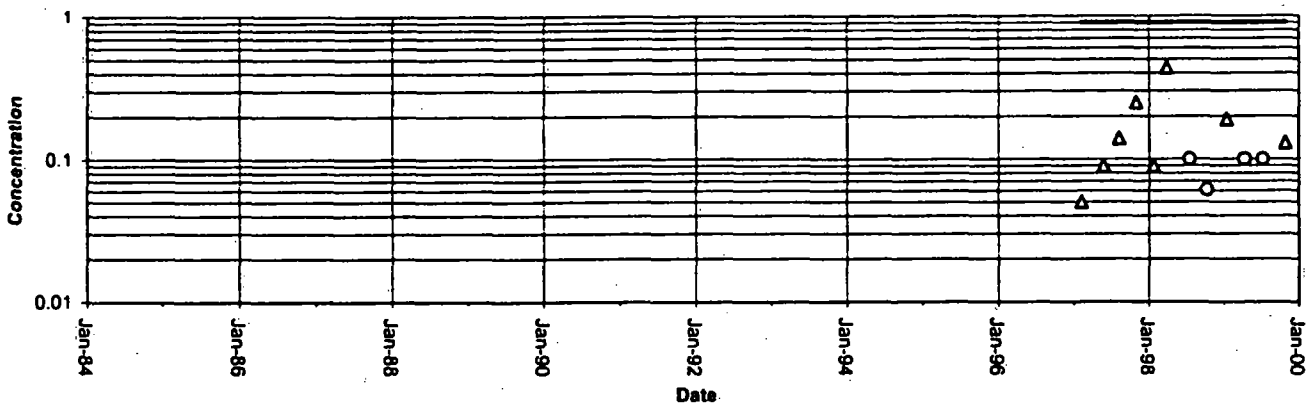
G118R



G119



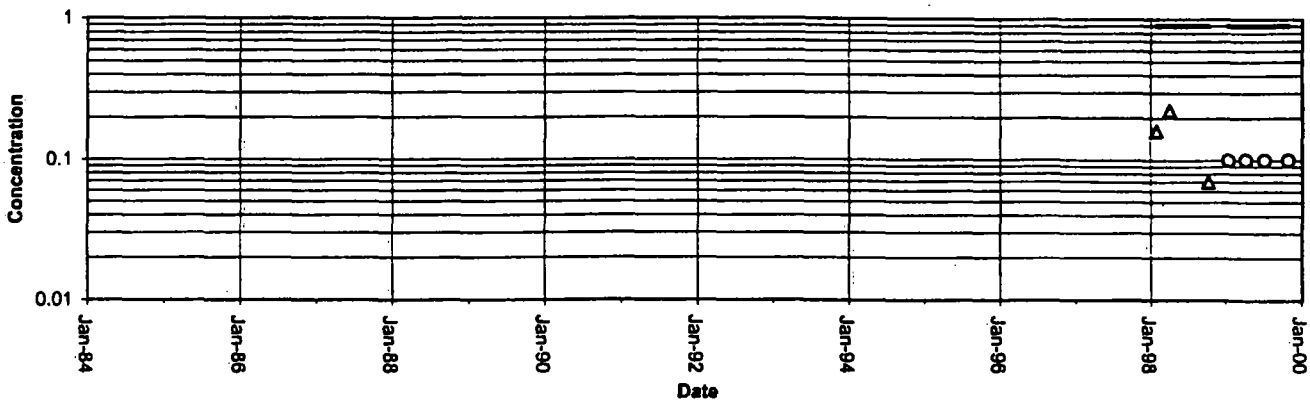
G120B



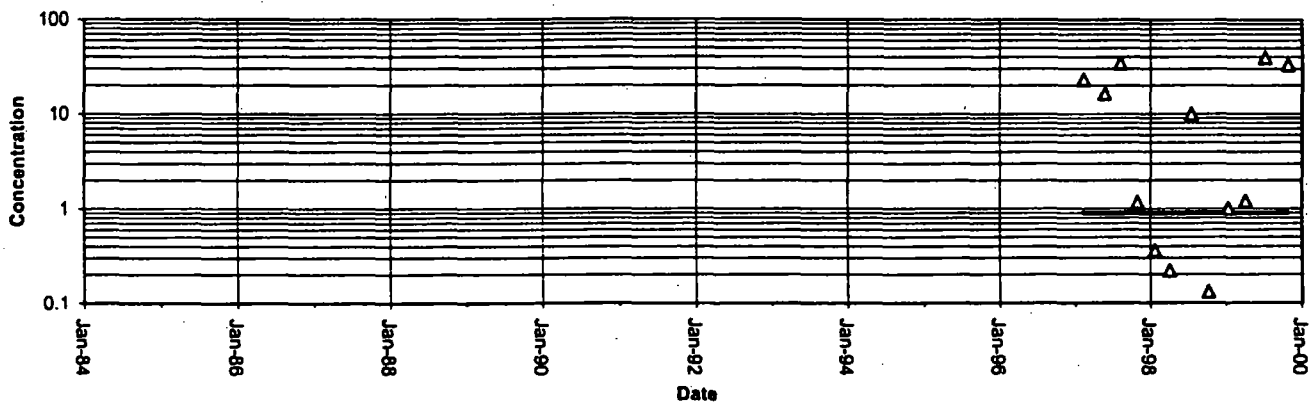
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

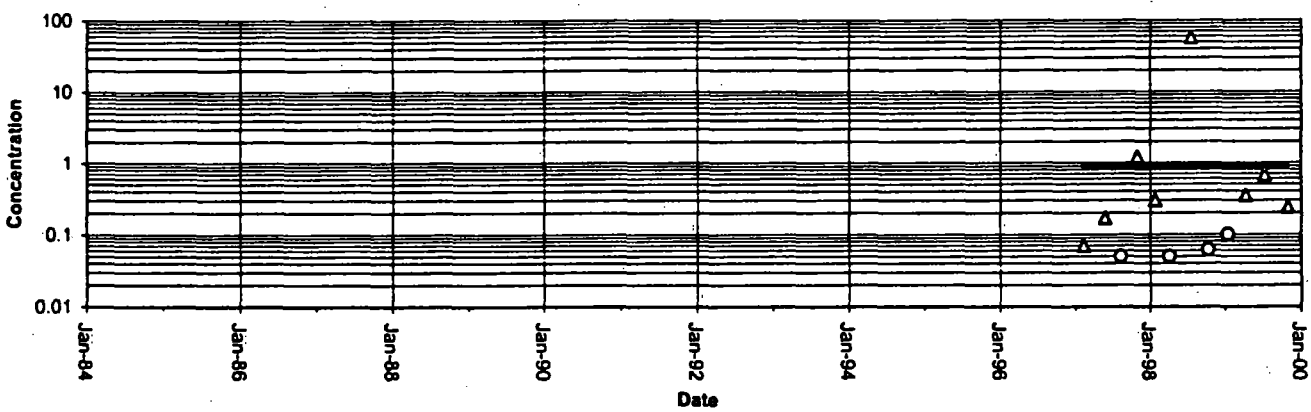
G130



G132



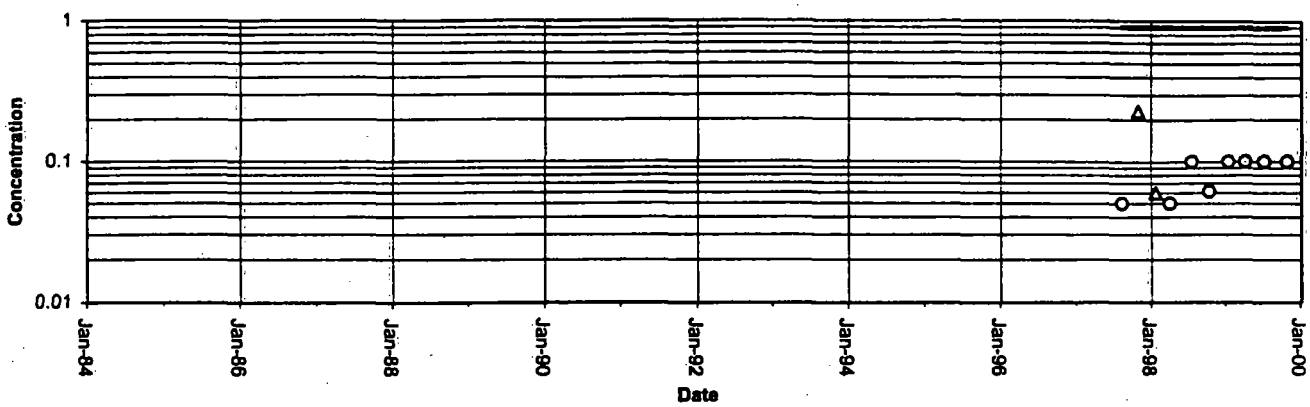
G33D



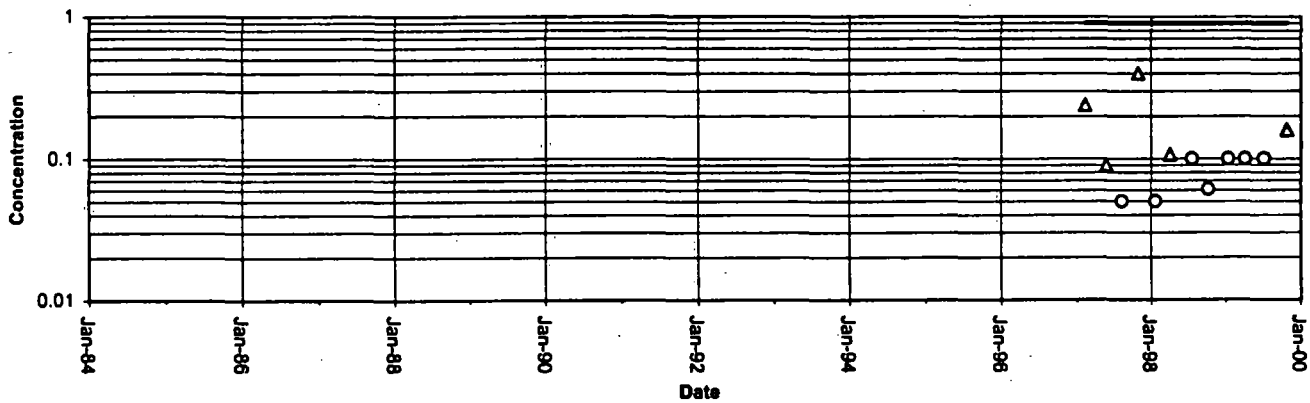
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

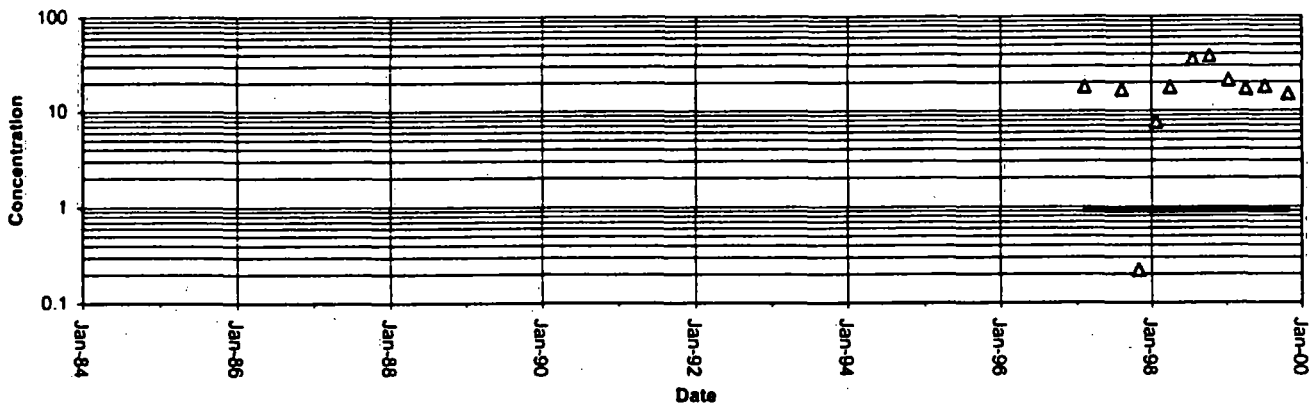
G33S



G34D



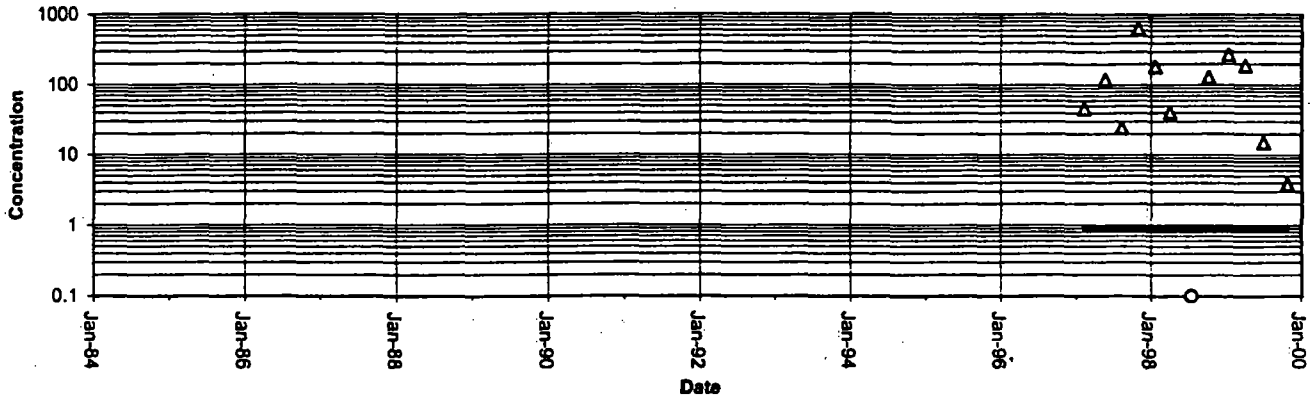
G34S



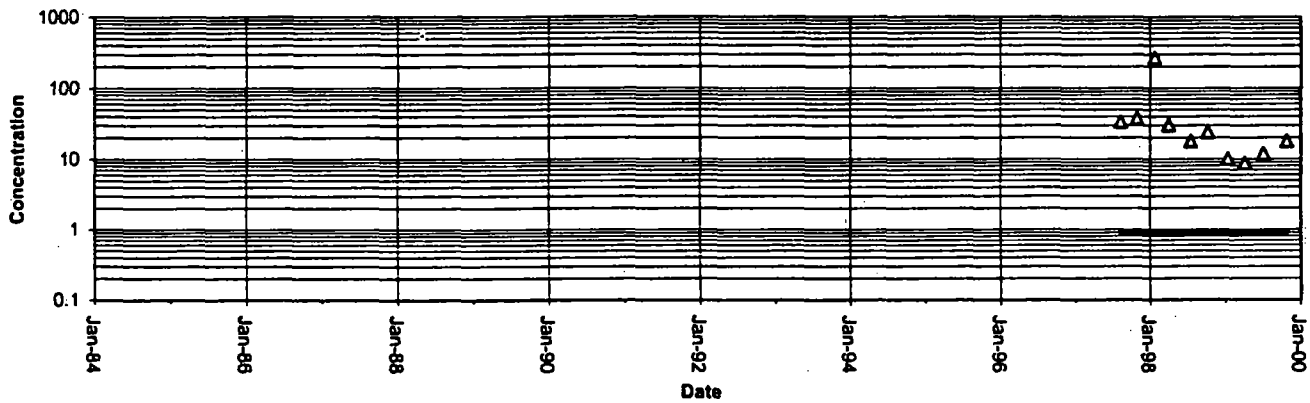
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

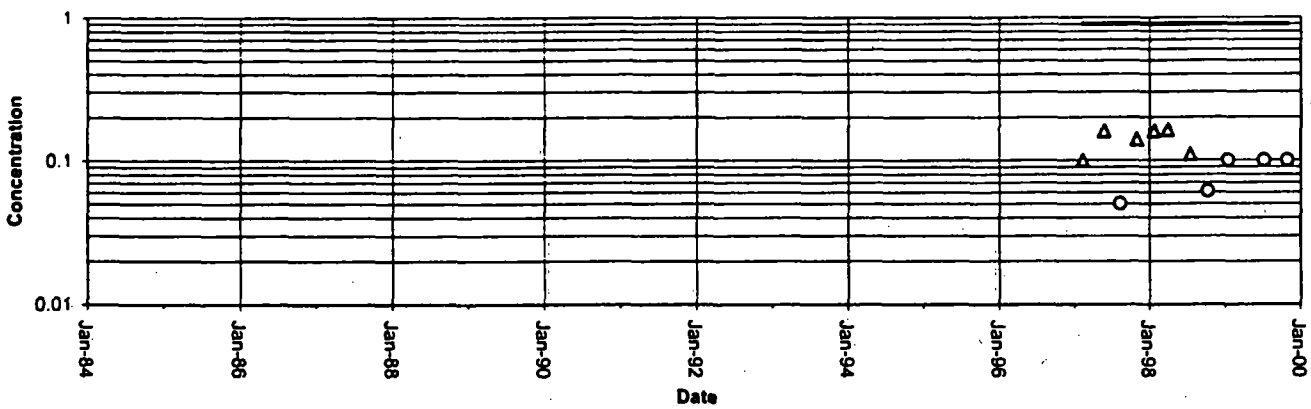
G35D



G35S



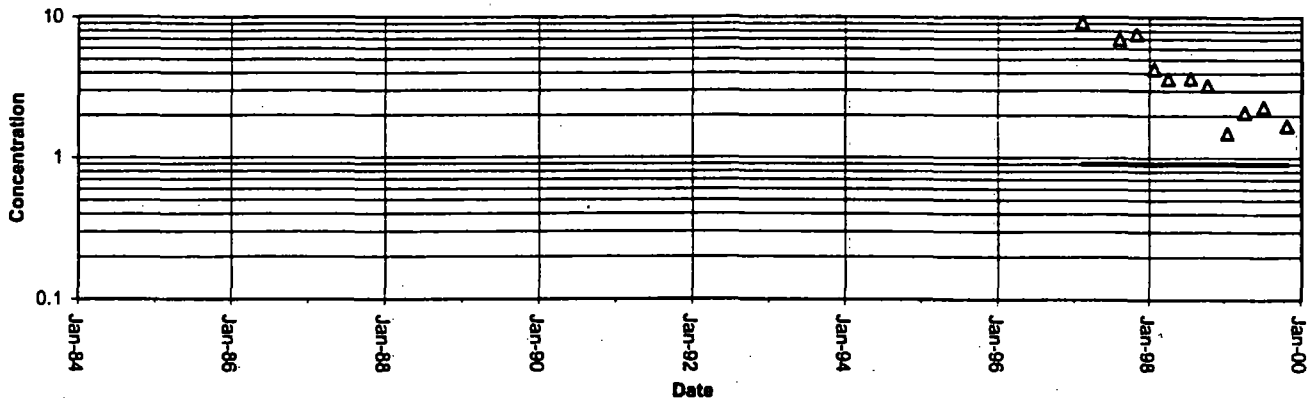
G36



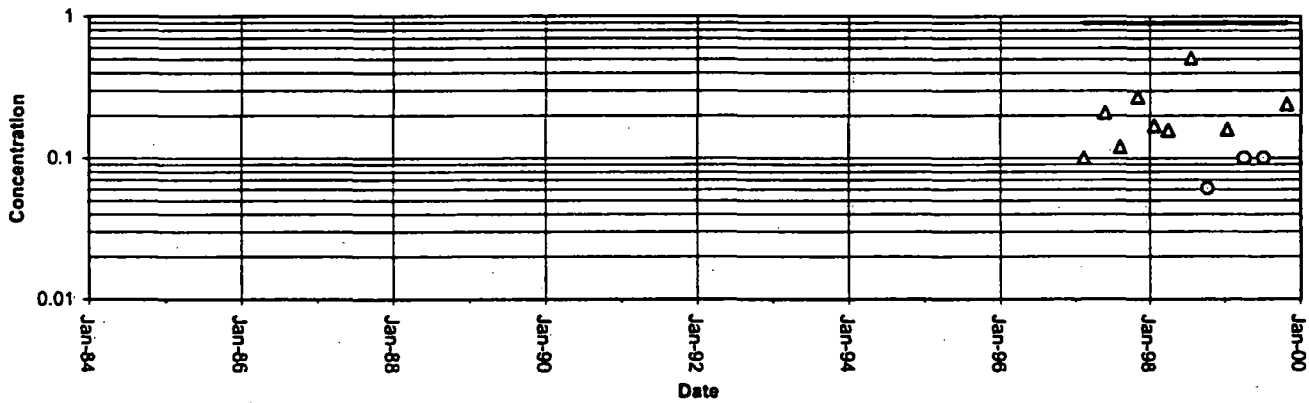
Ammonia, Nitrogen (dis) (mg/L)

AGQS Concentration NonDetect

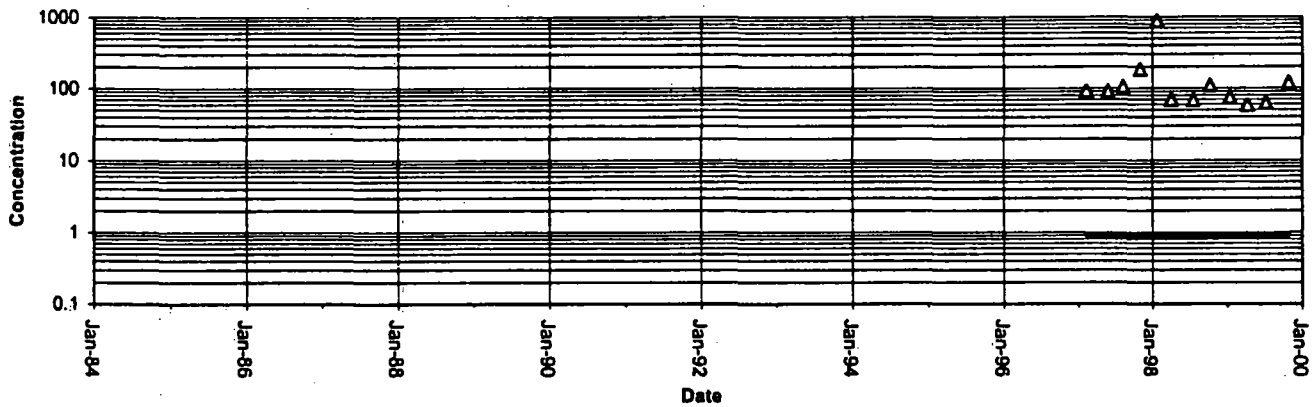
G37D



G37S



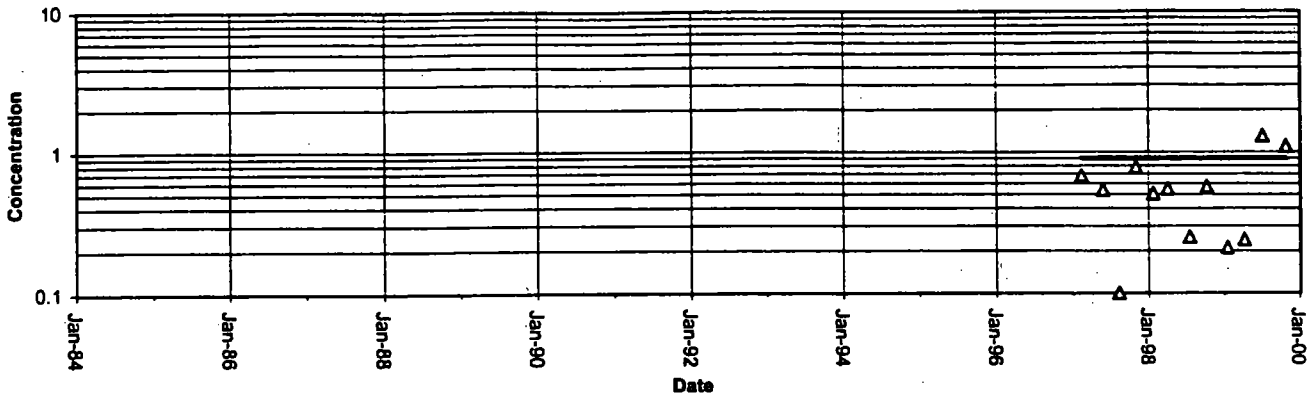
G38



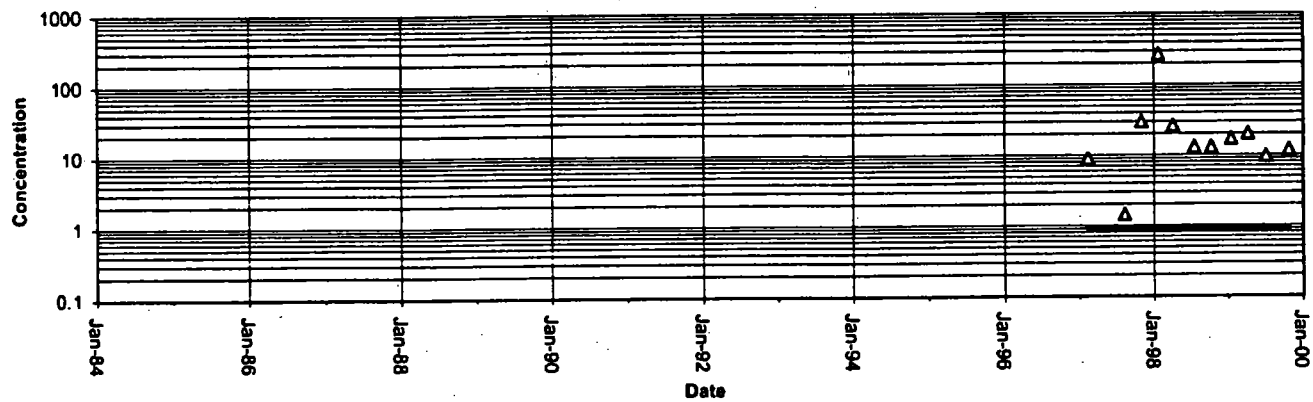
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

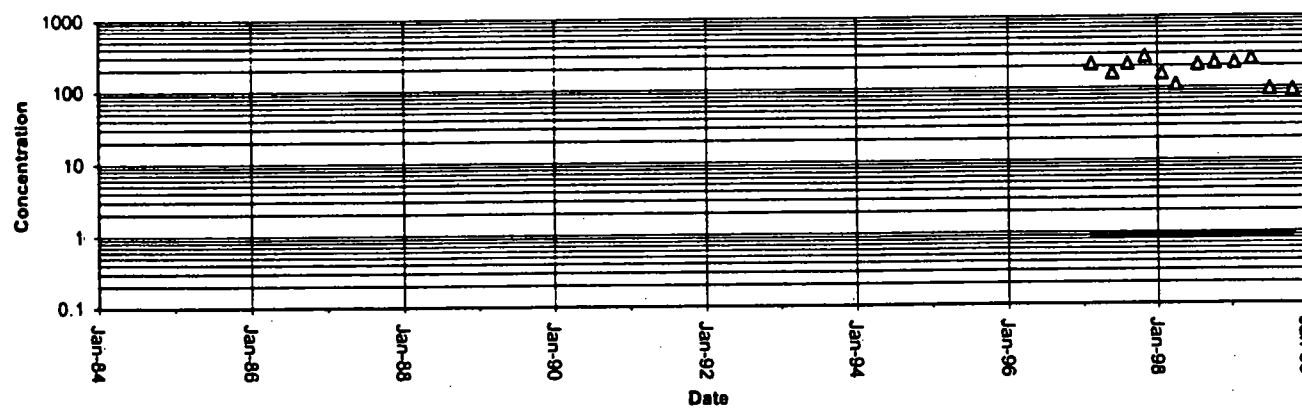
G39



G40



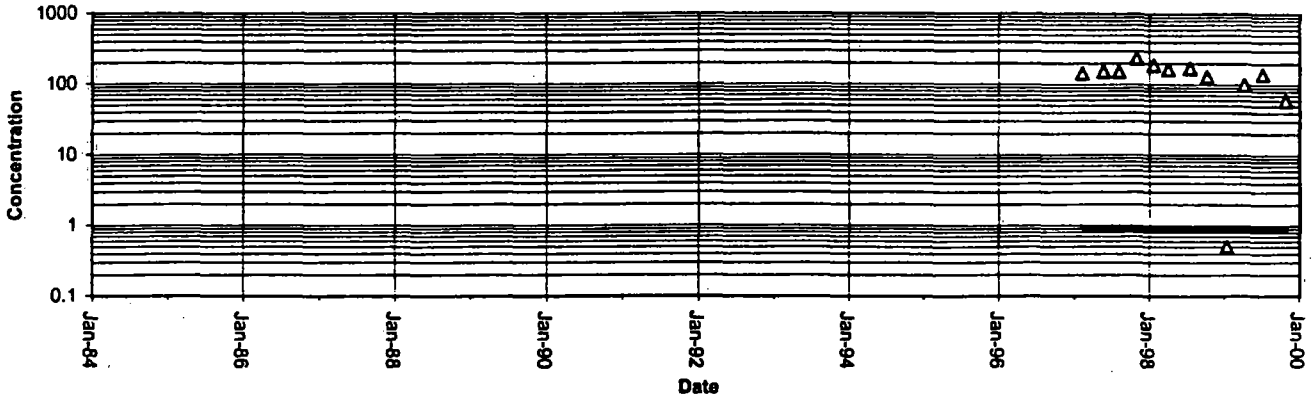
MW106



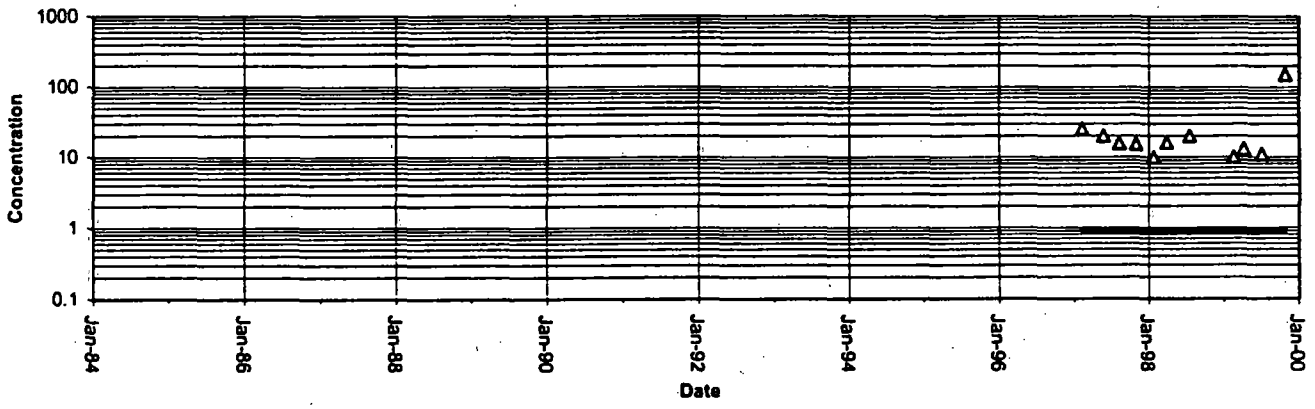
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

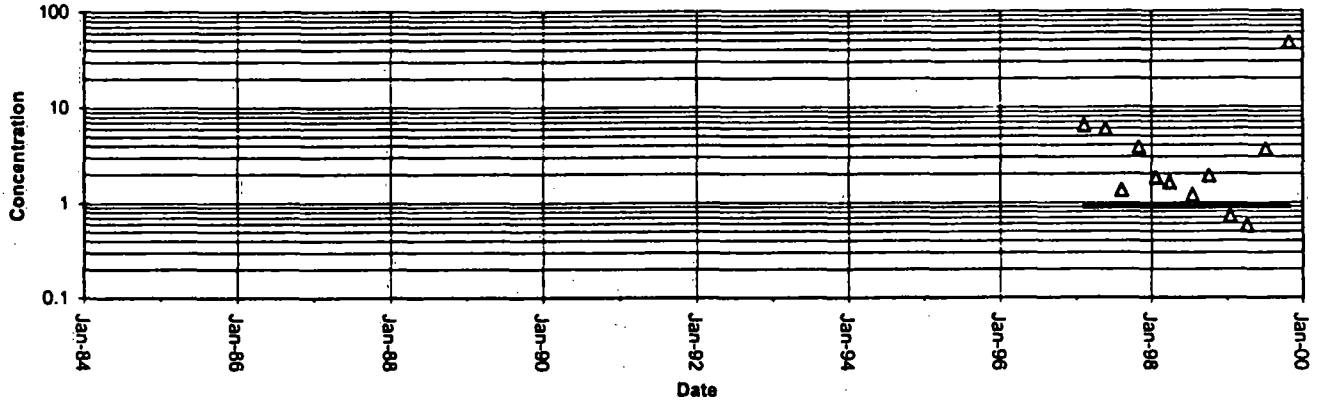
P1



P3R



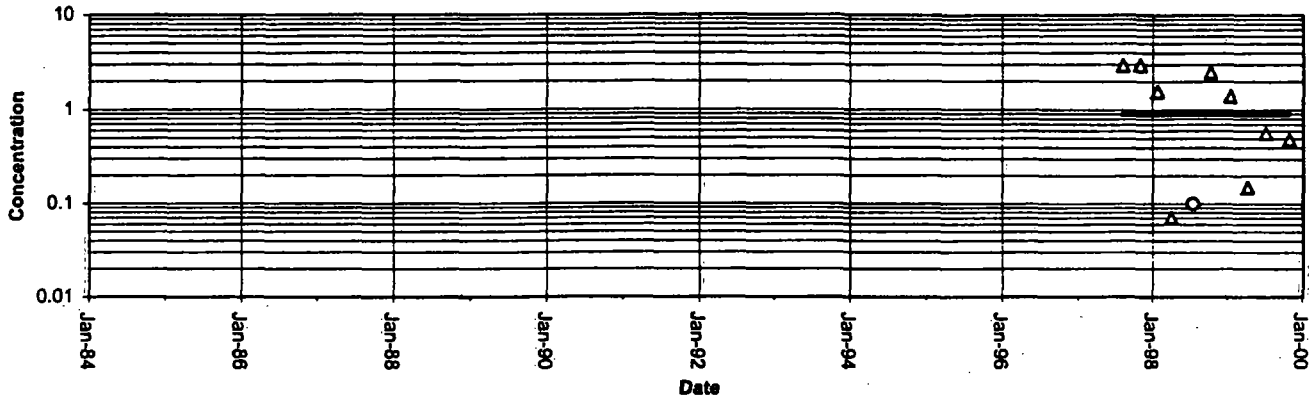
P4R



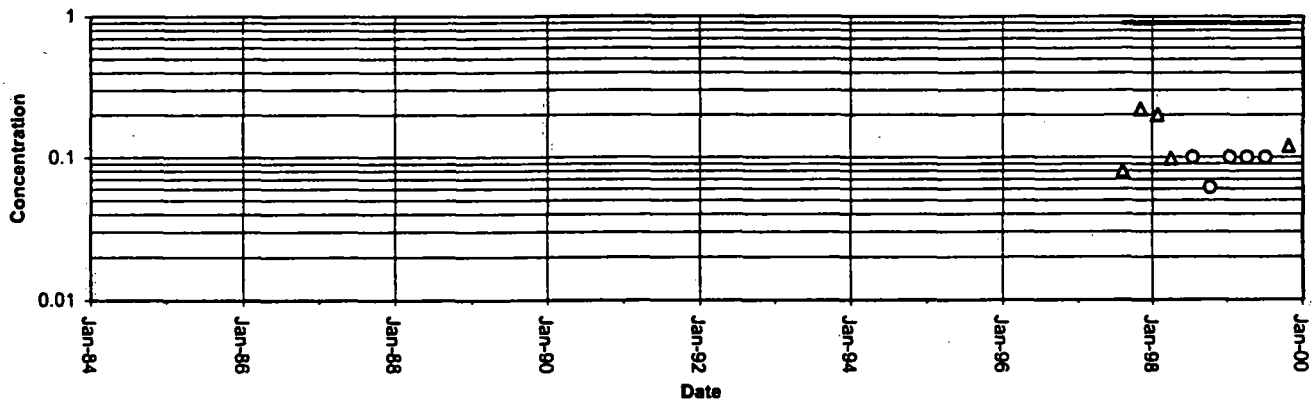
Ammonia, Nitrogen (dis) (mg/L)

AGQS Δ Concentration O NonDetect

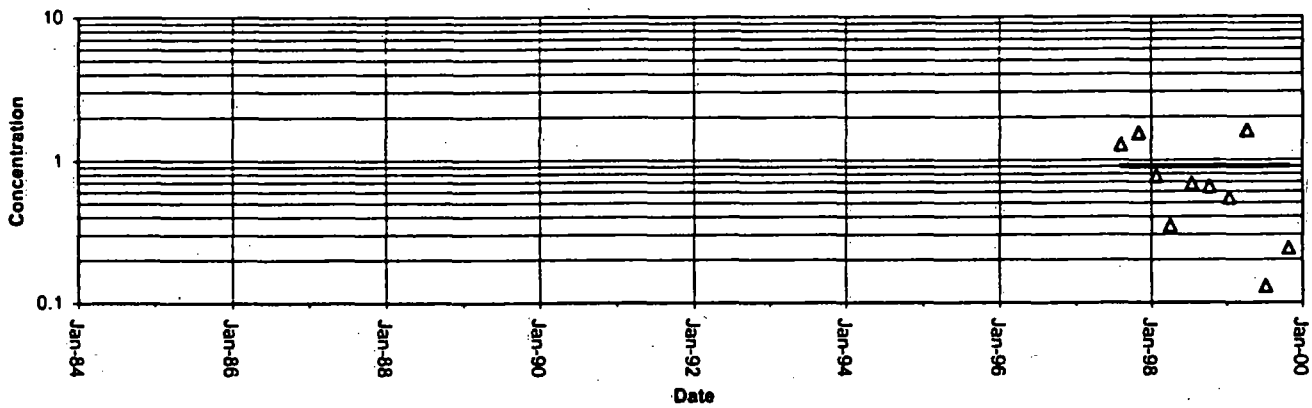
SG1



SG3



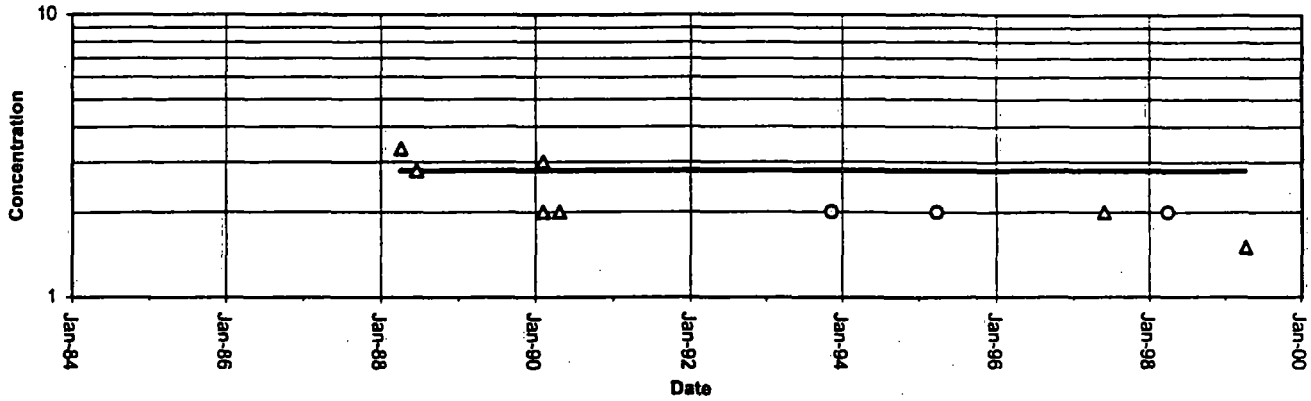
SG4



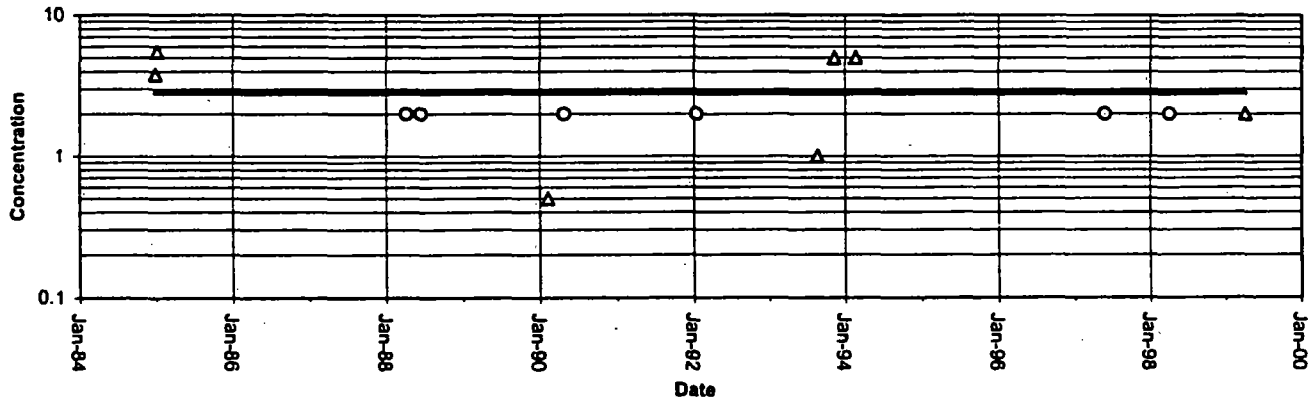
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

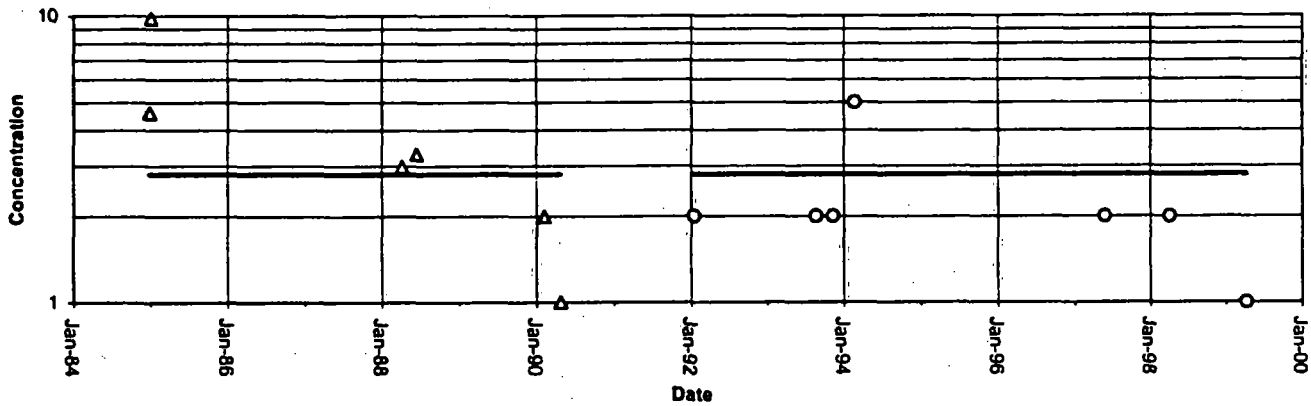
B15R



G109



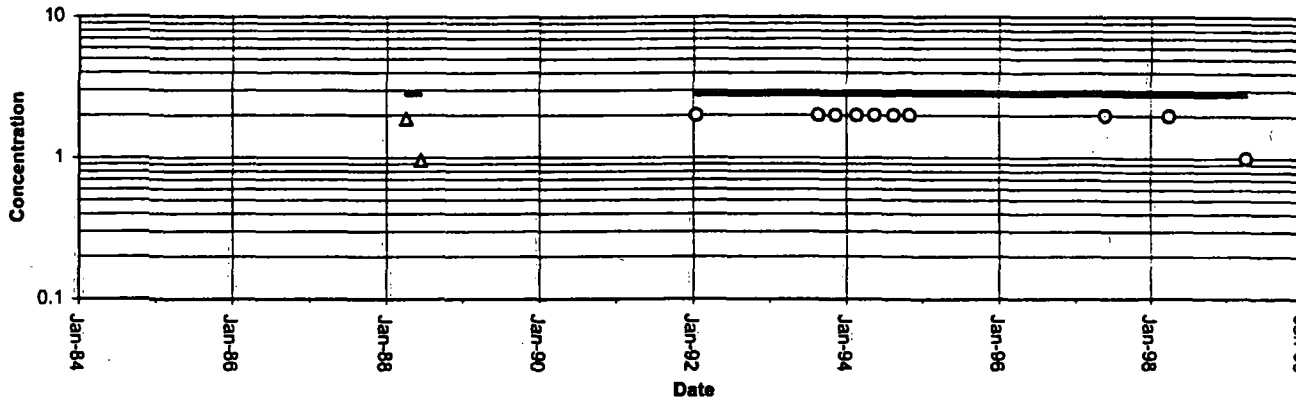
G109A



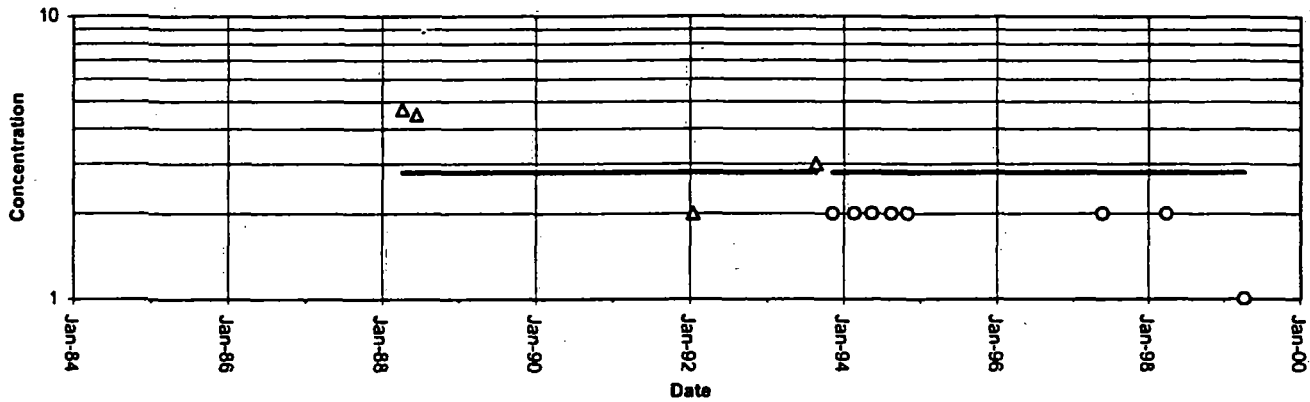
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

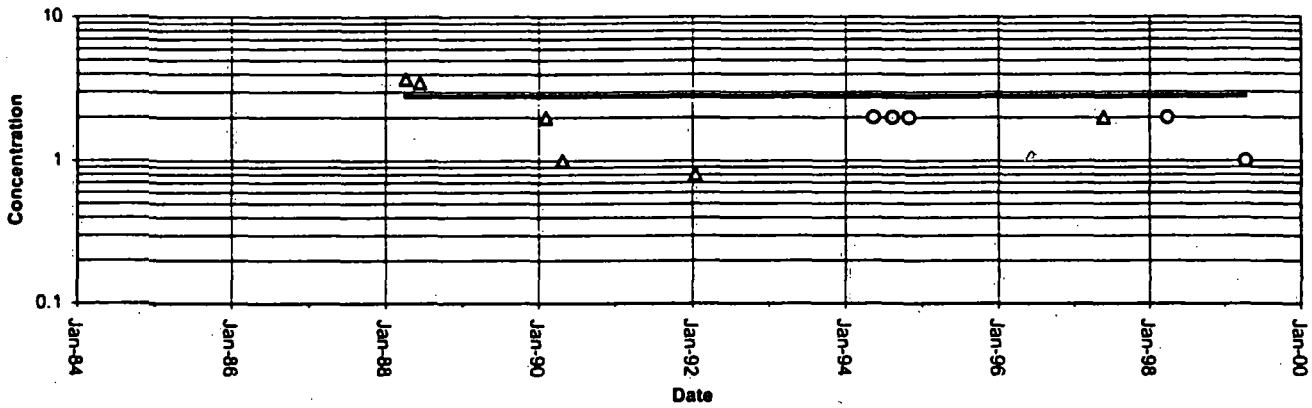
G113



G113A



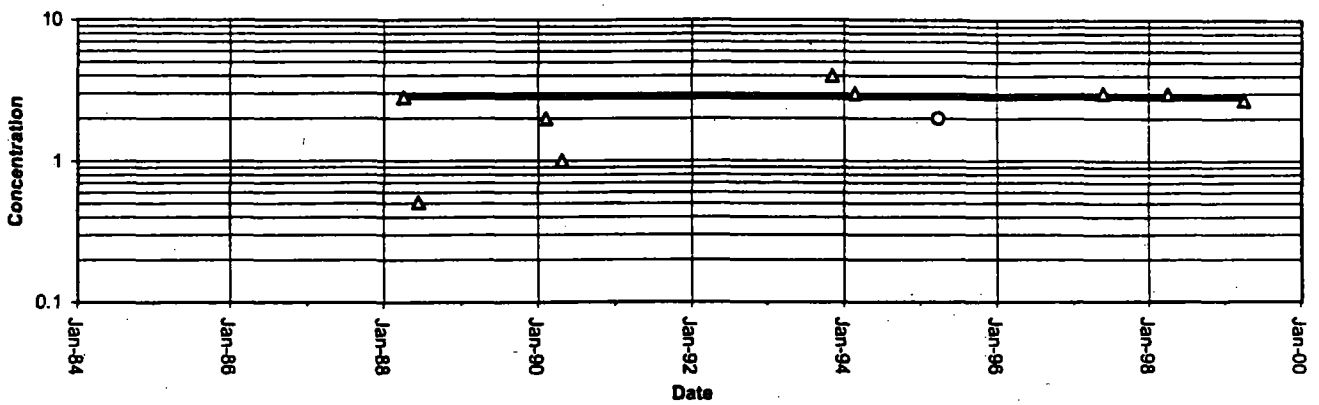
G114



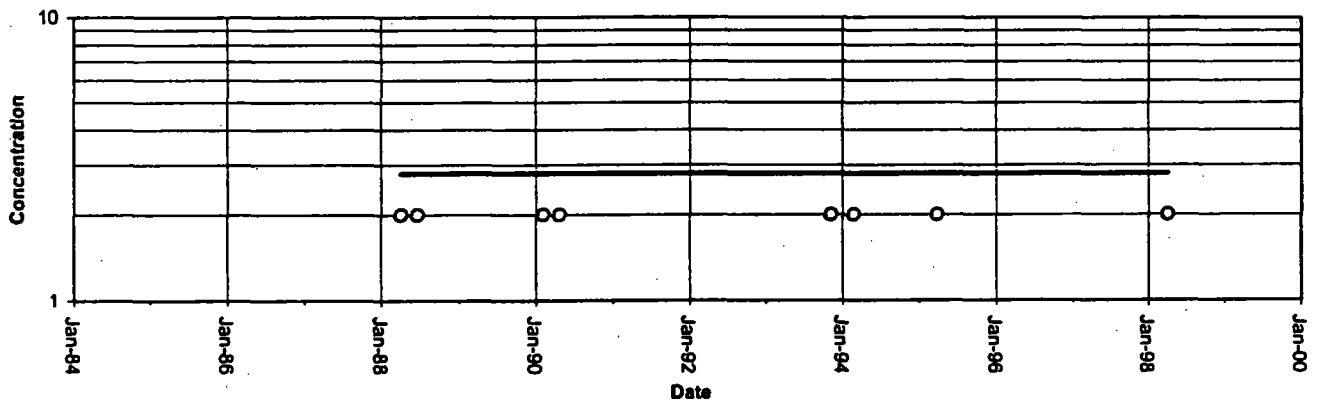
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

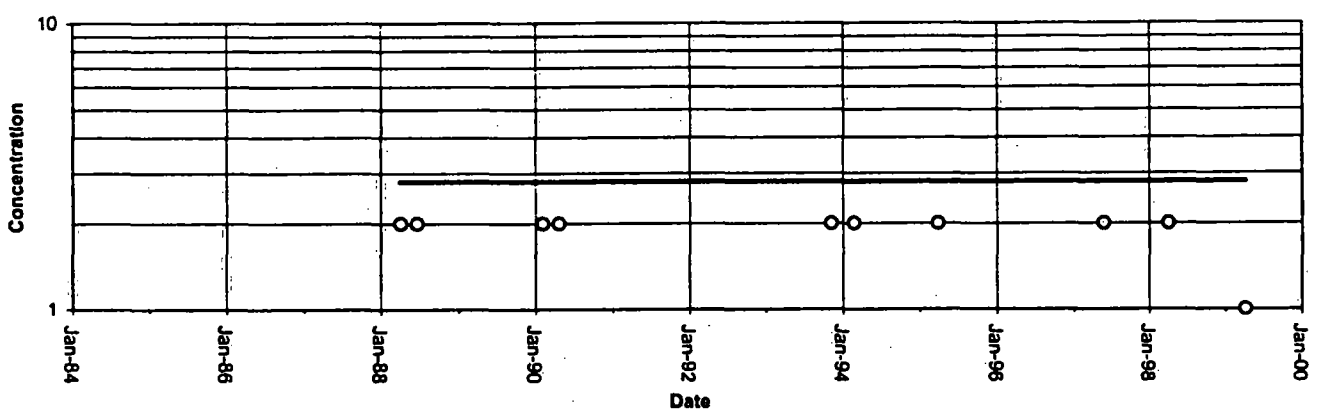
G115



G116



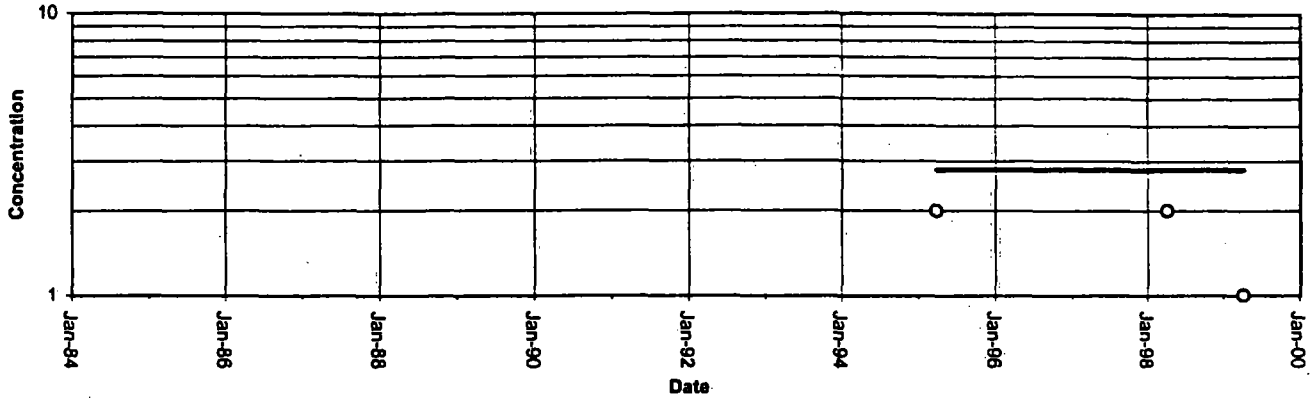
G116A



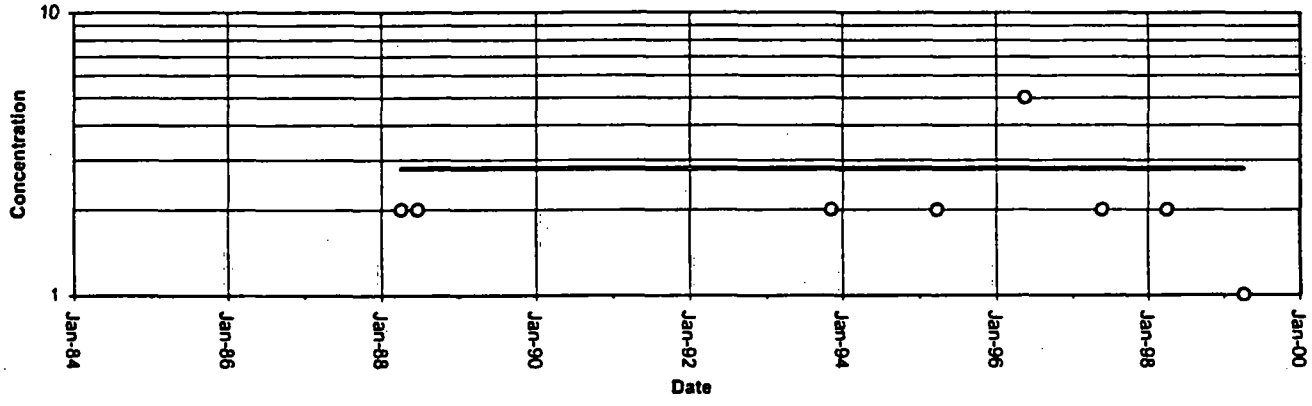
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

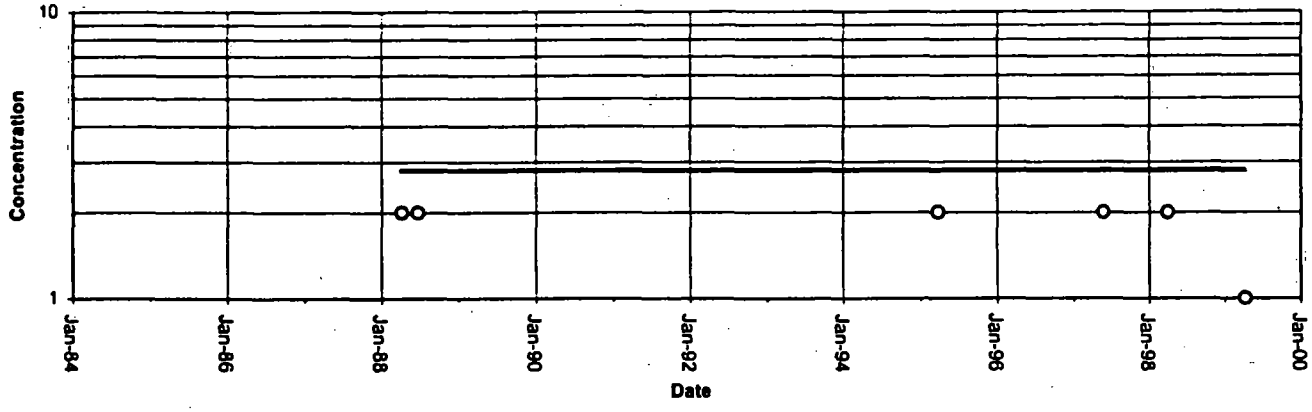
G116D



G117



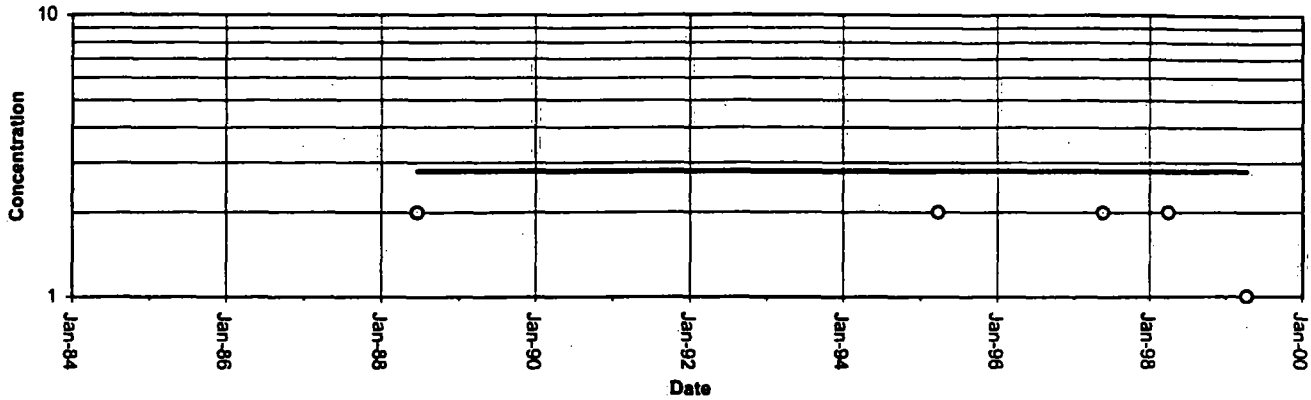
G118A



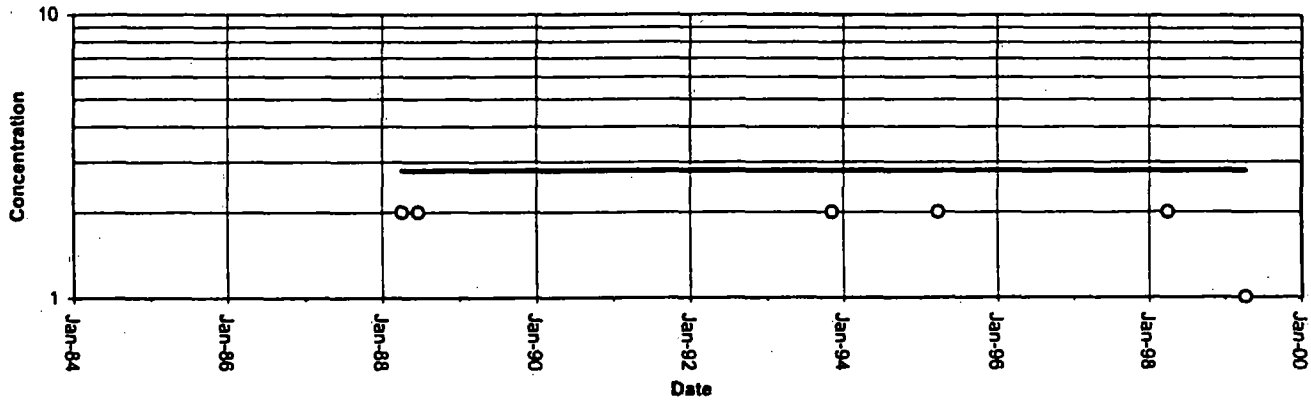
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

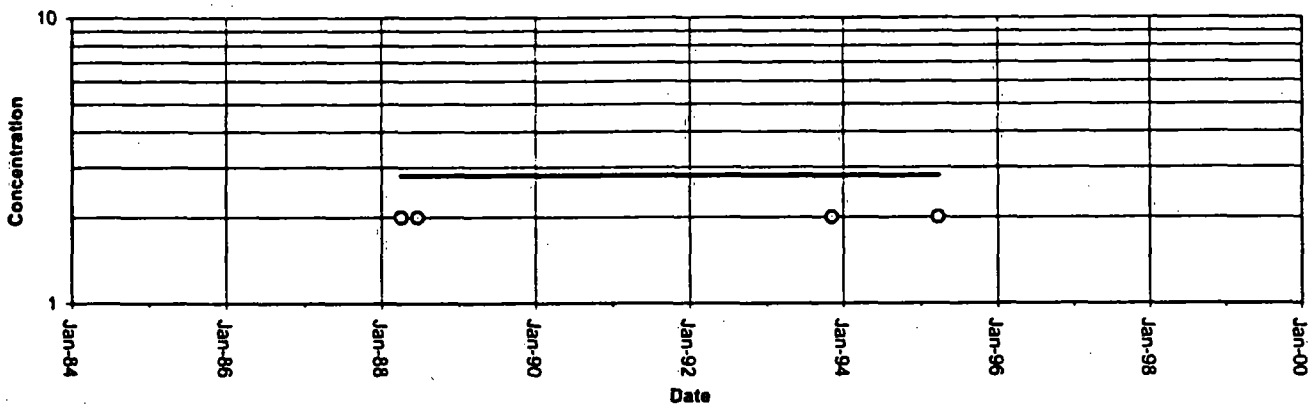
G118R



G119



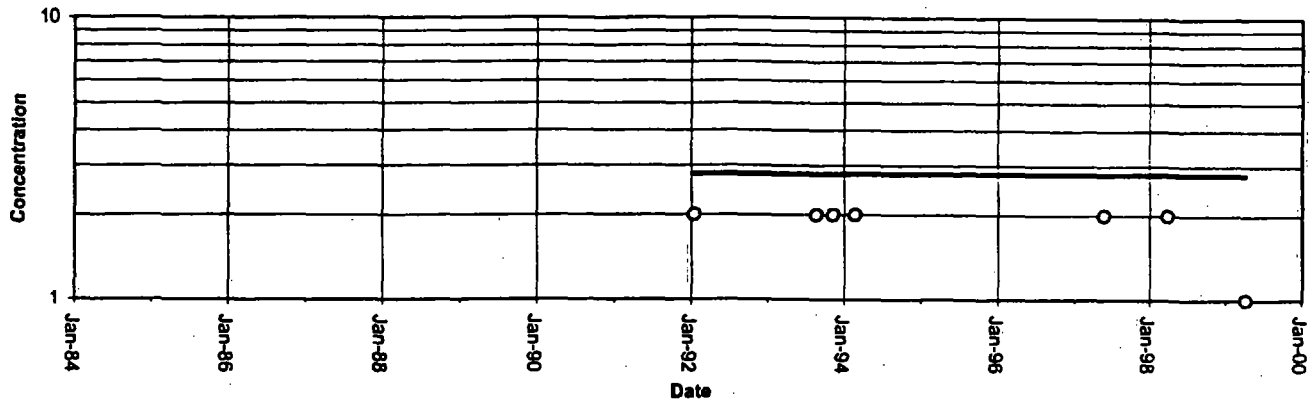
G119A



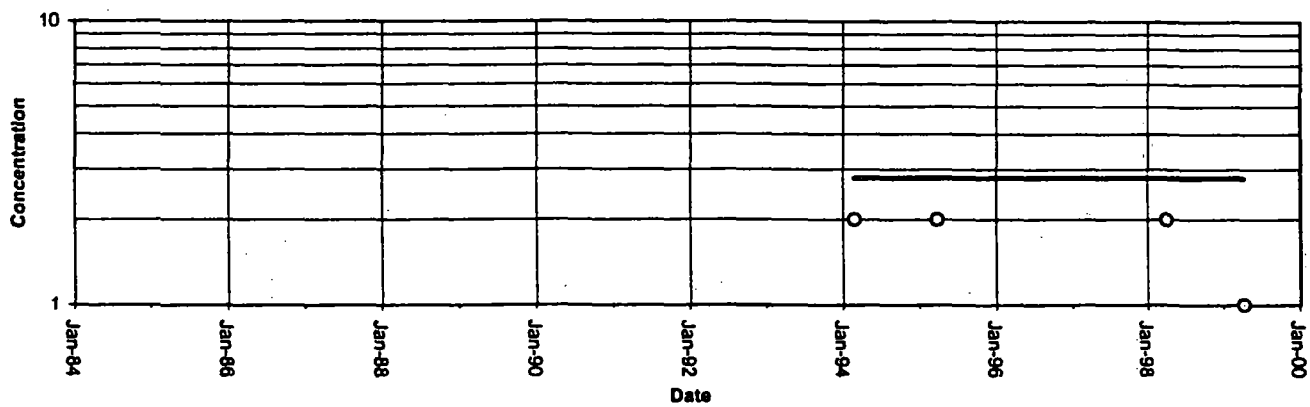
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

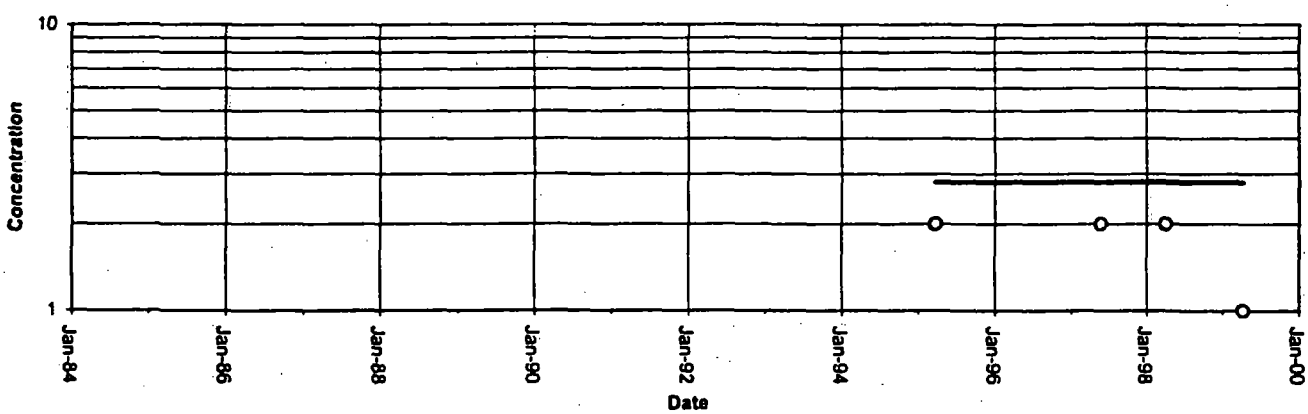
G120B



G130



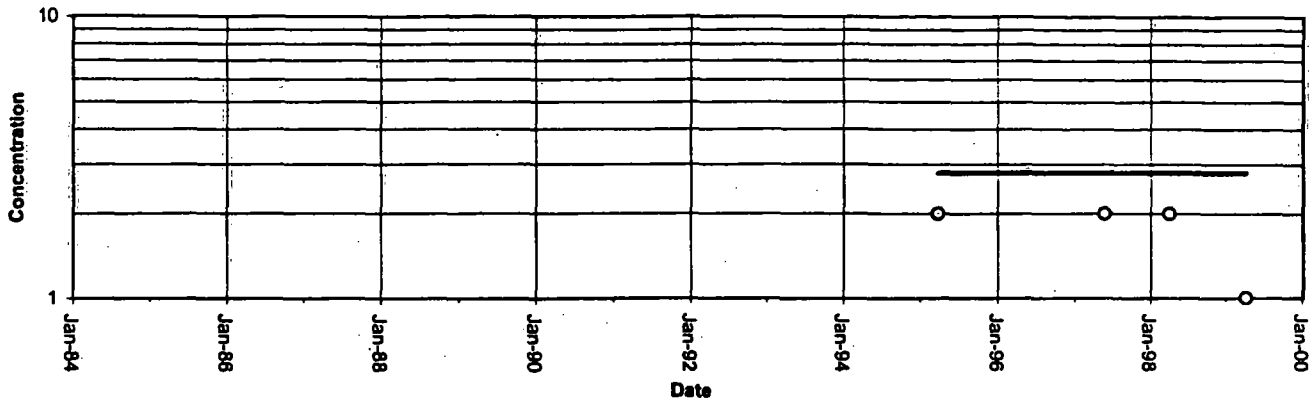
G132



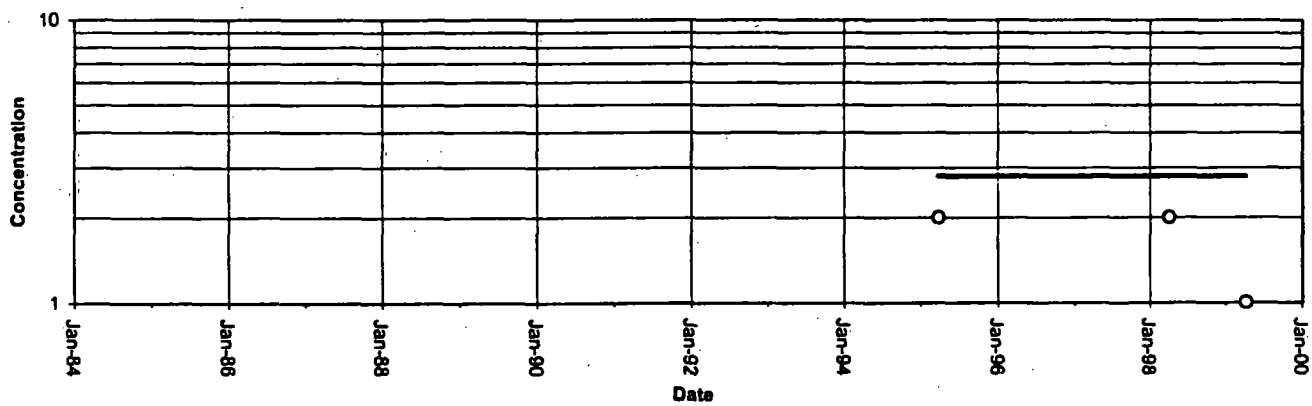
Benzene (ug/L)

AGQS Concentration NonDetect

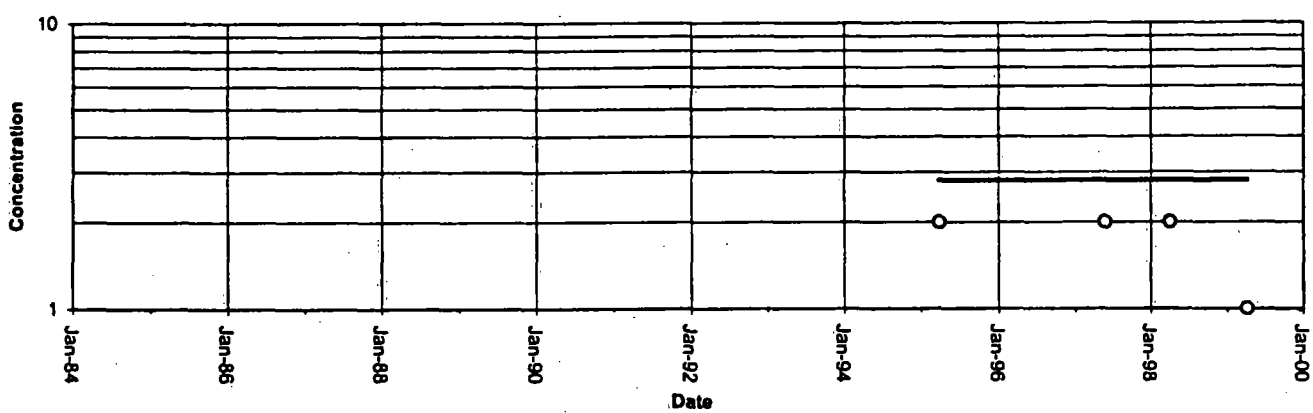
G33D



G33S



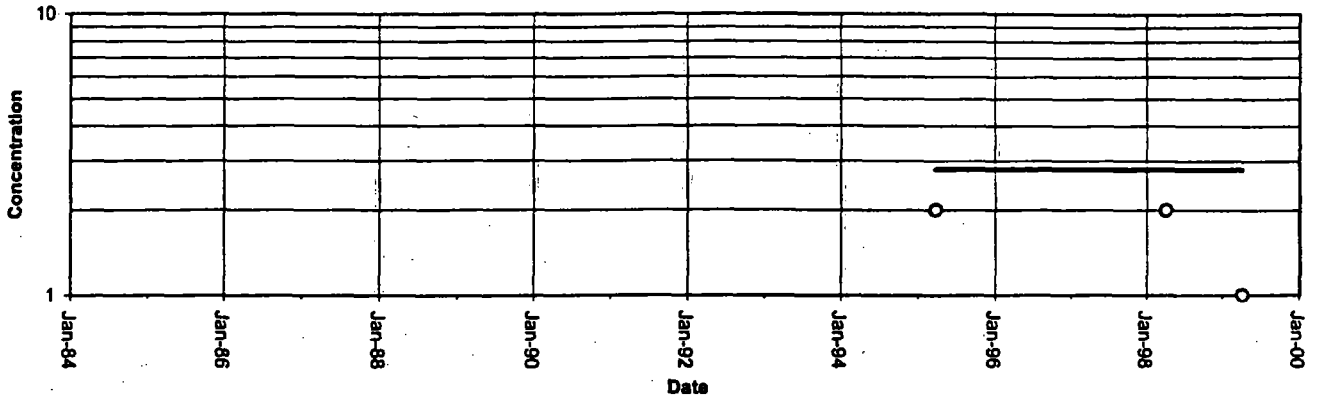
G34D



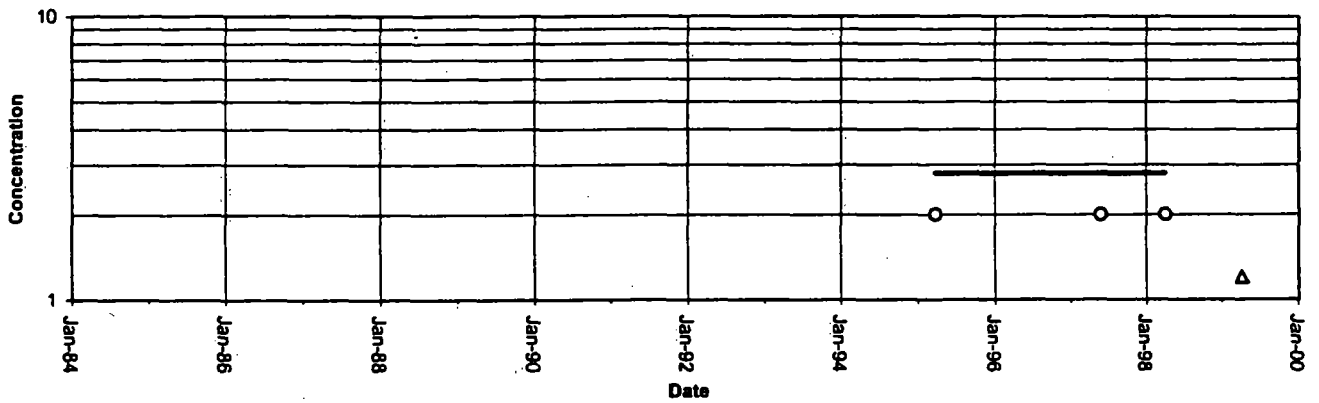
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

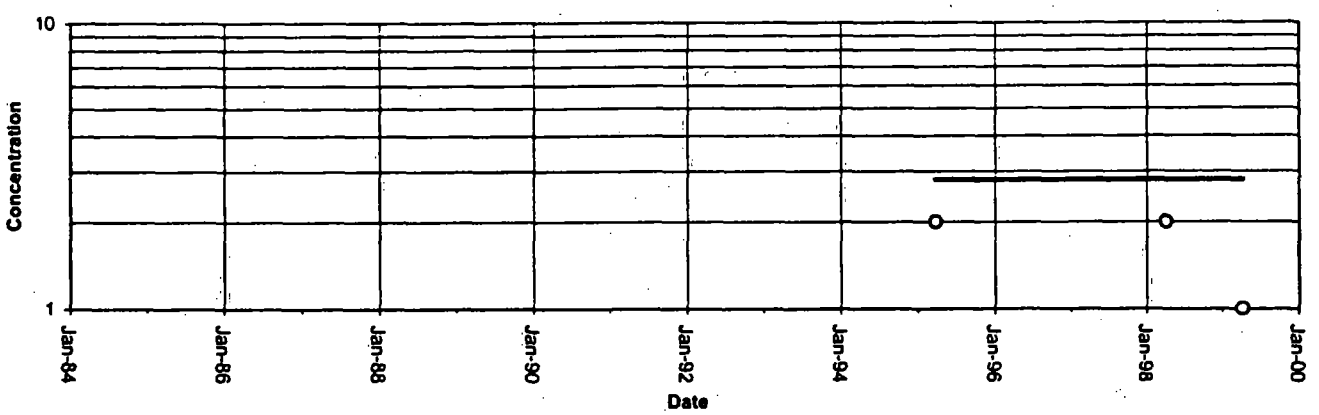
G34S



G35D



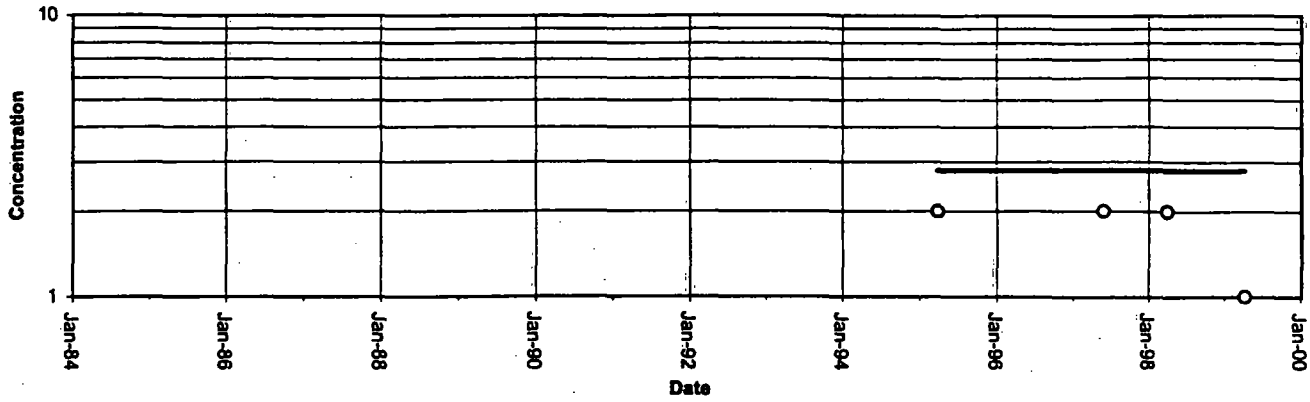
G35S



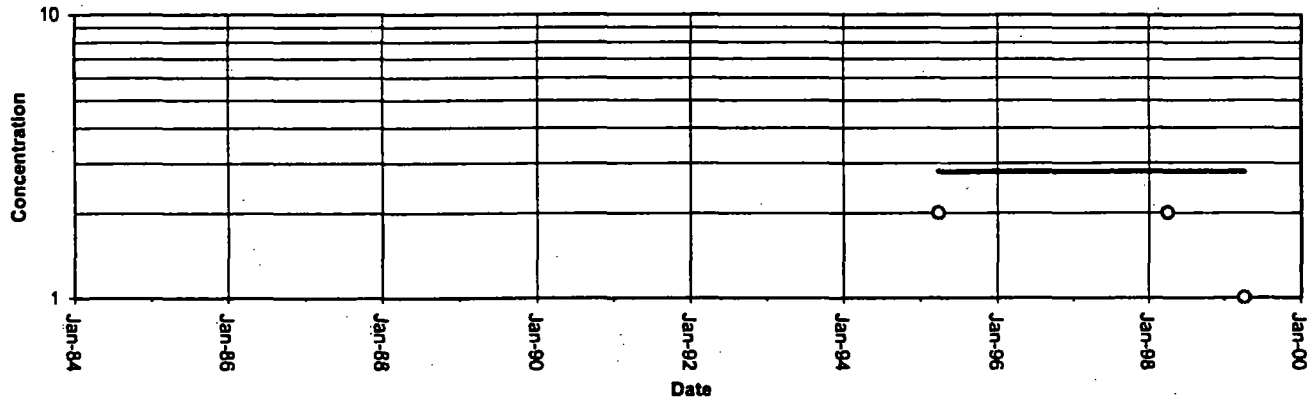
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

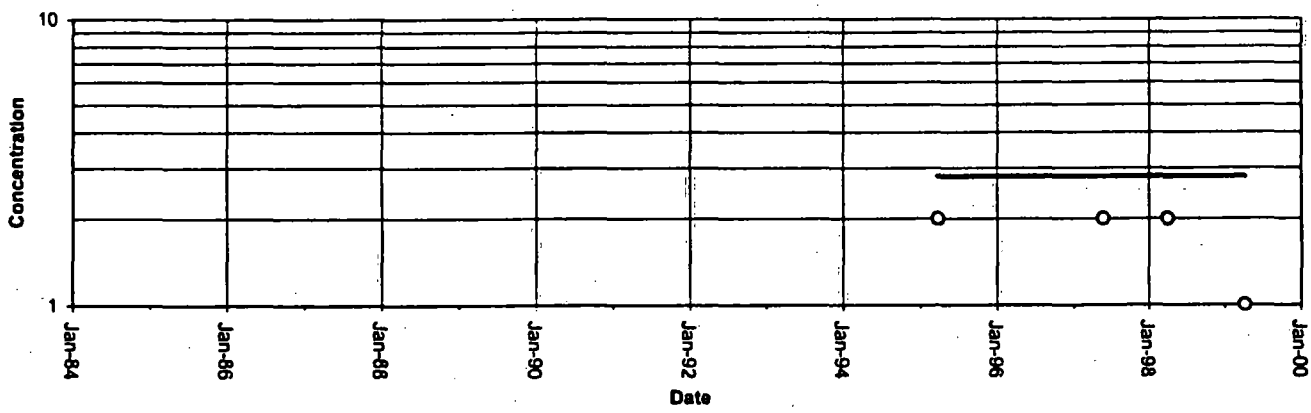
G36



G37D



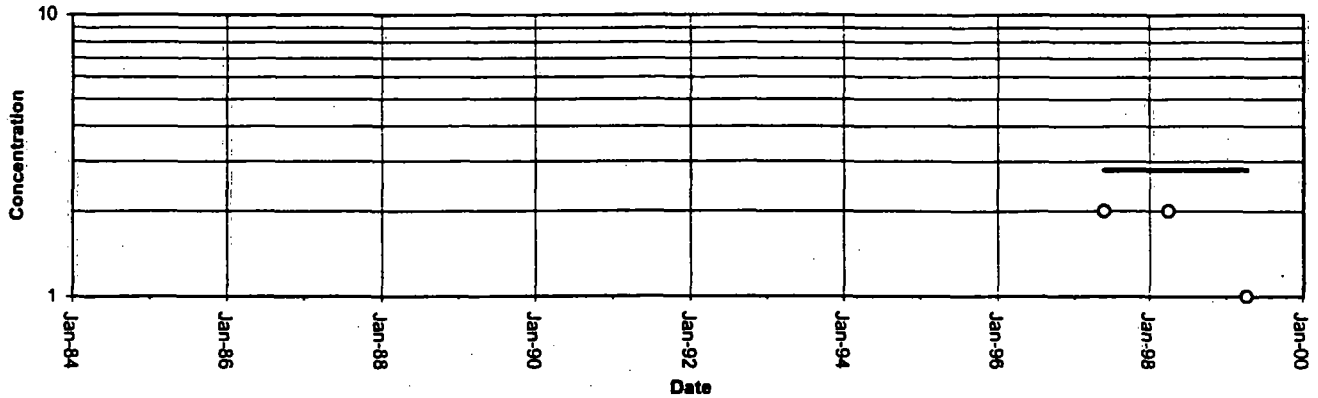
G37S



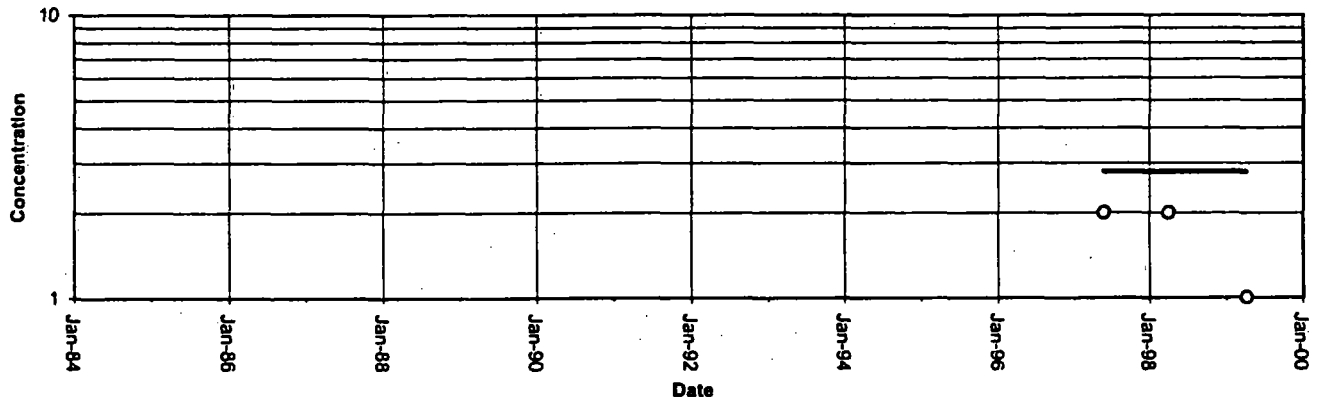
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

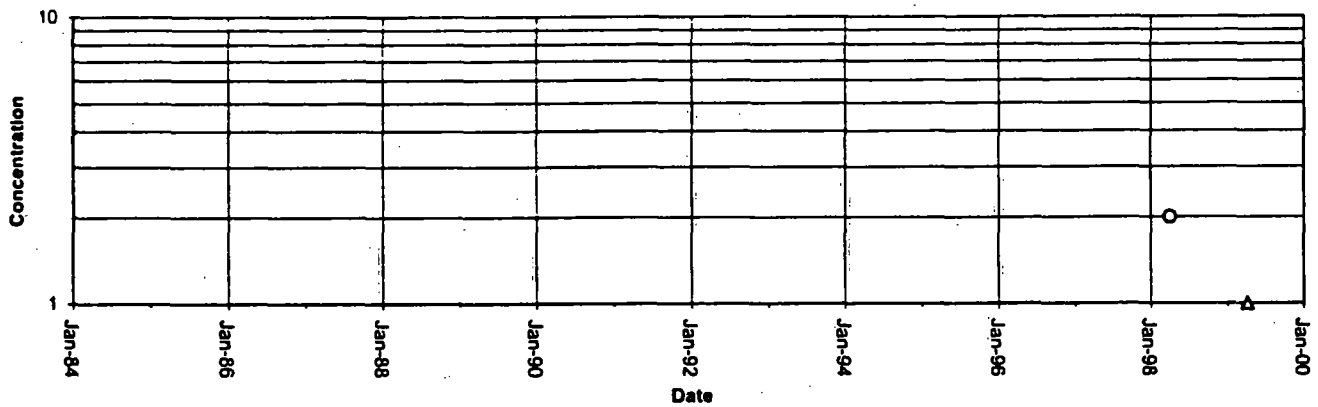
G38



G39



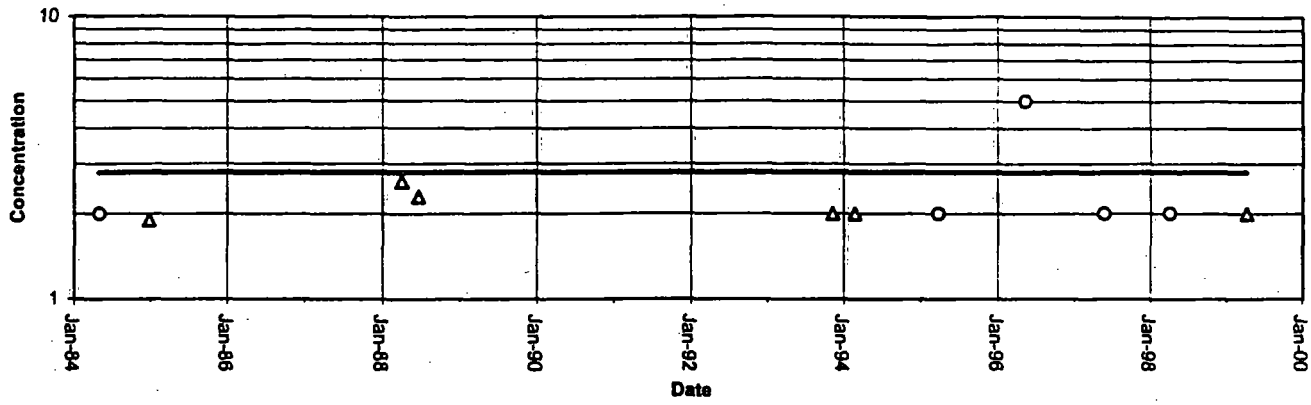
G40



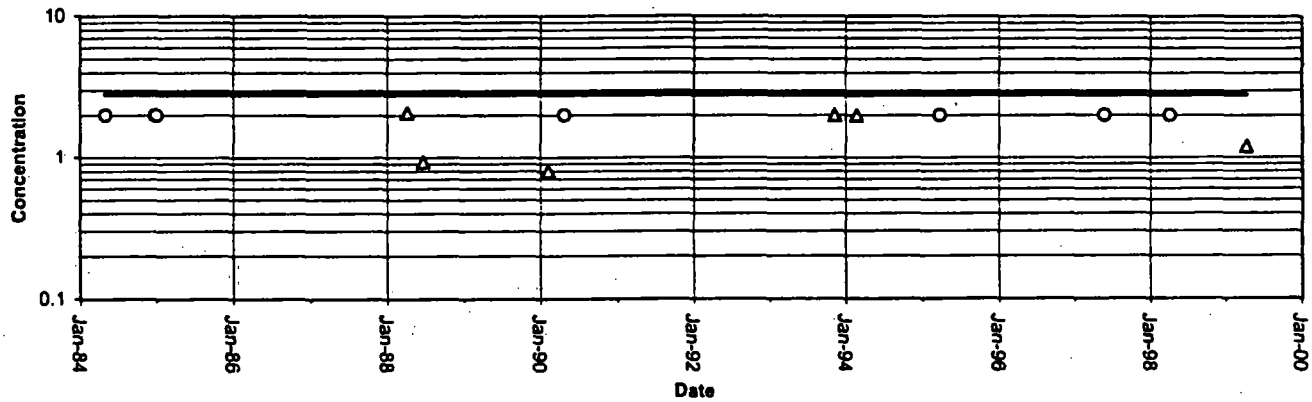
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

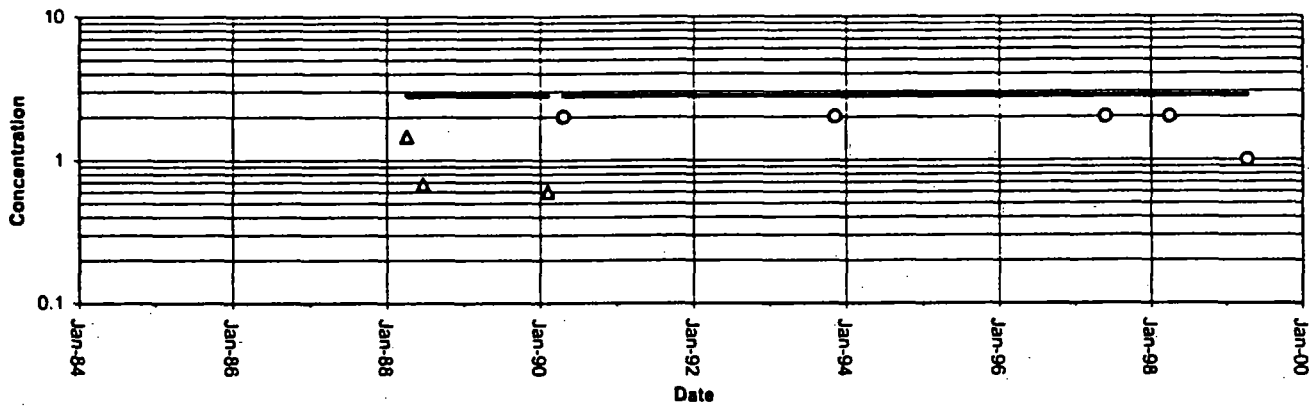
MW106



P1



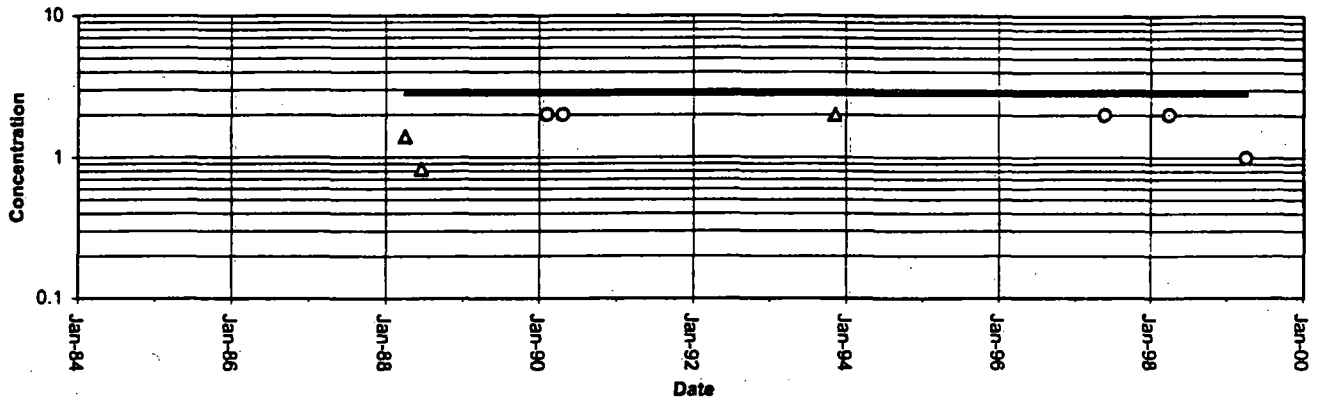
P3R



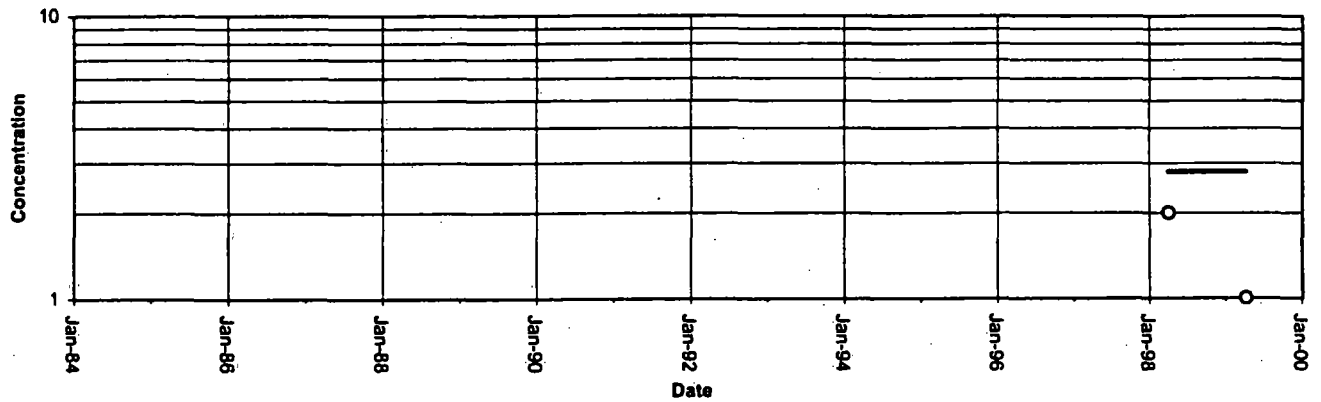
Benzene (ug/L)

AGQS Δ Concentration O NonDetect

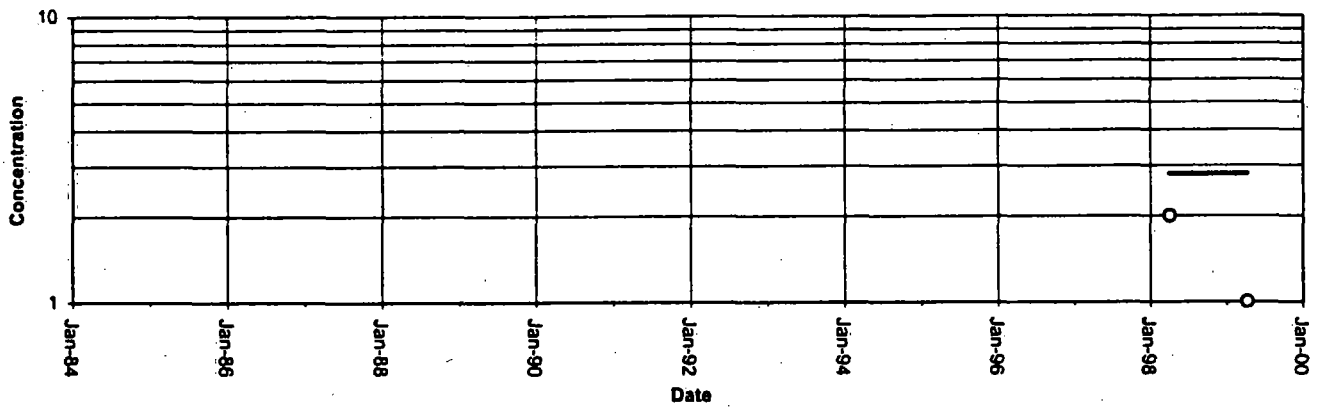
P4R



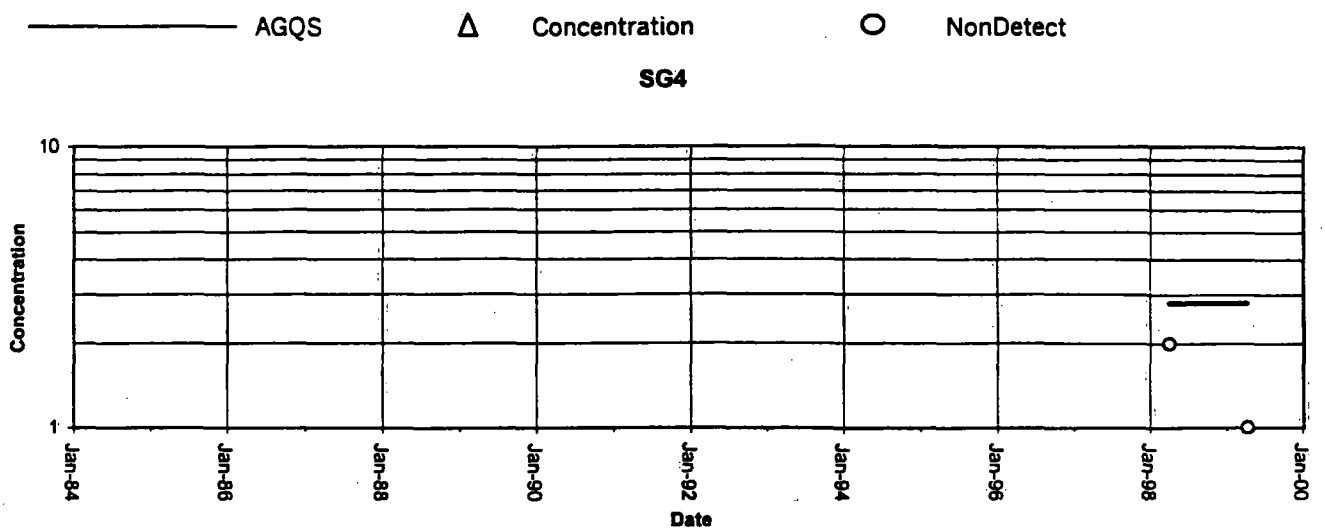
SG1



SG3



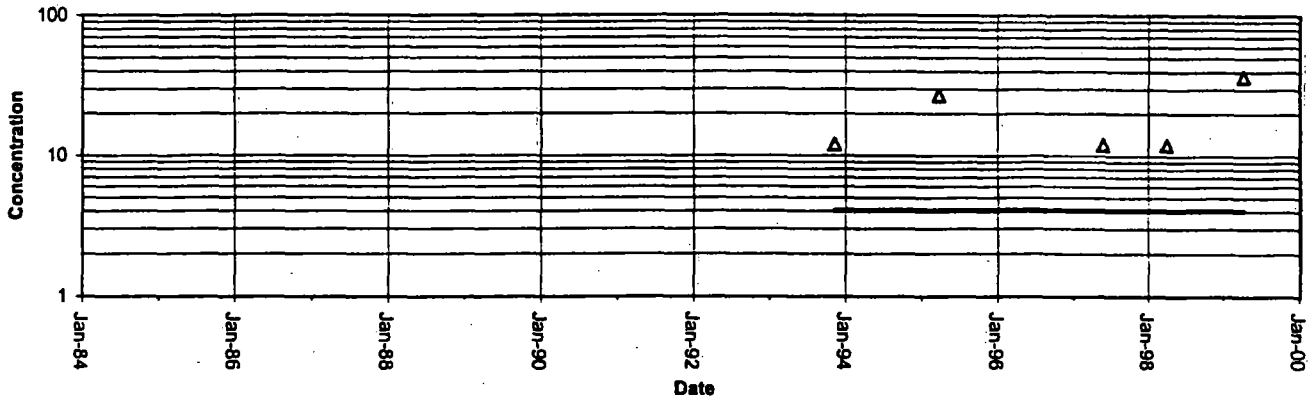
Benzene (ug/L)


AGQS
Concentration
NonDetect
SG4
10
1
Concentration
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Date

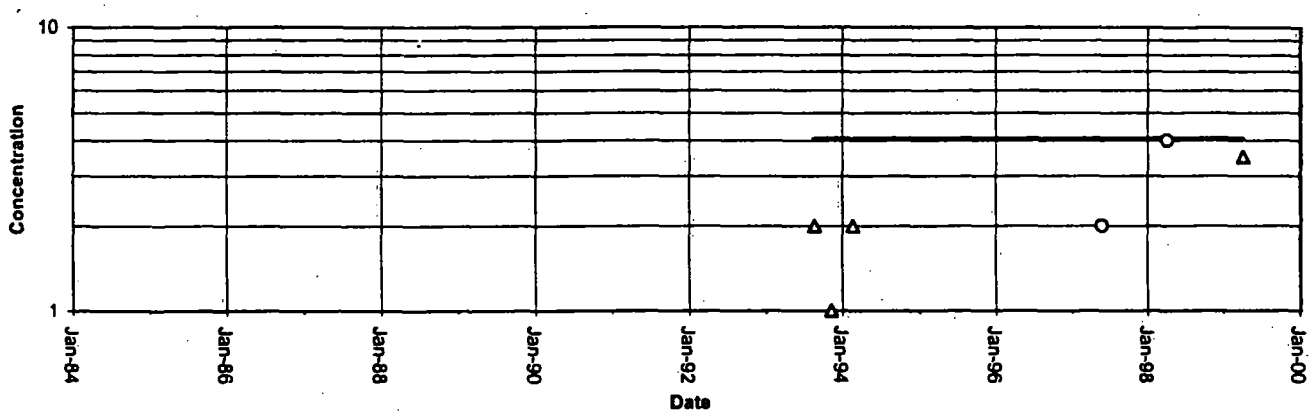
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

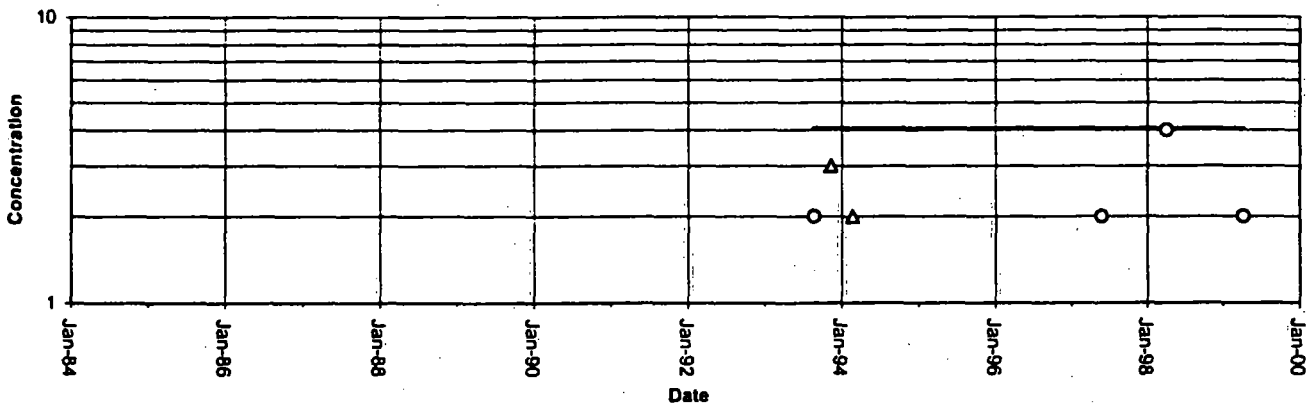
B15R



G109



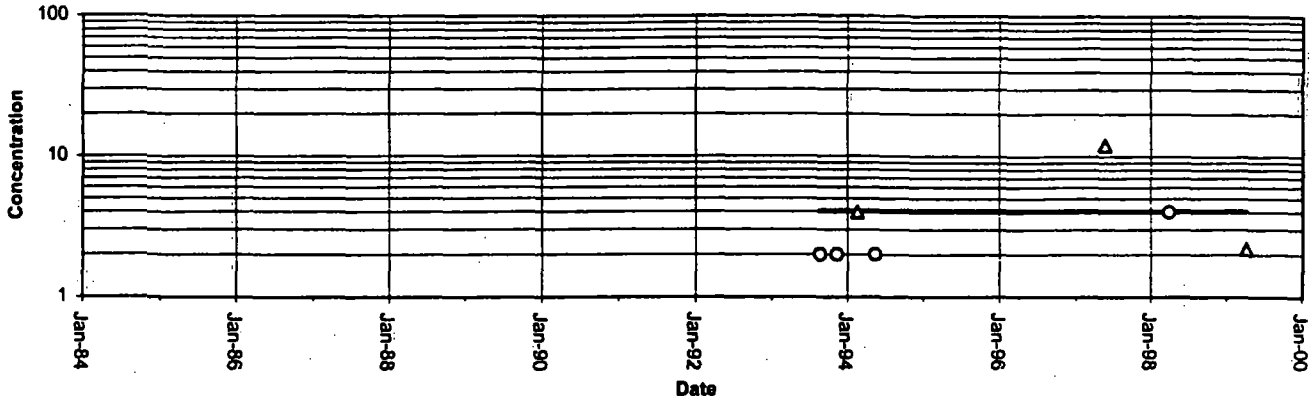
G109A



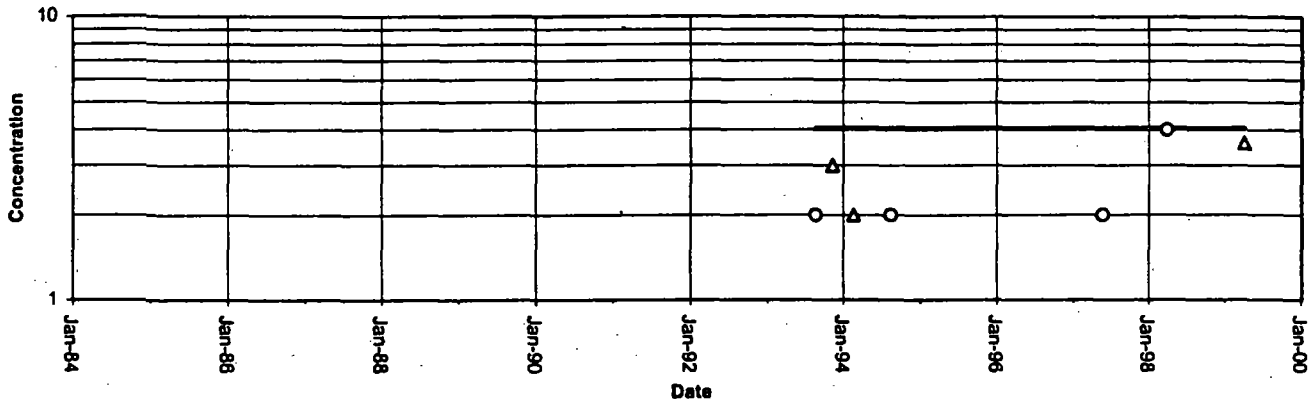
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

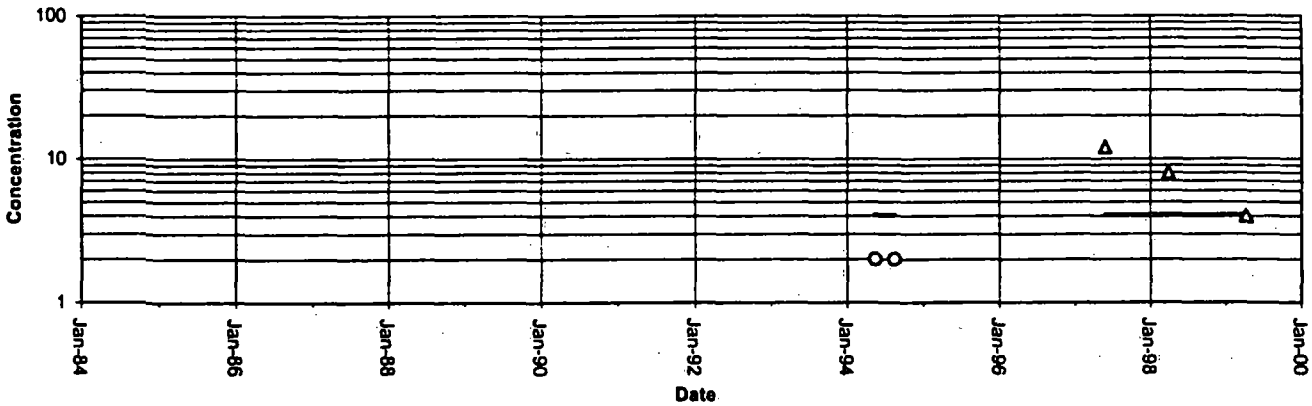
G113



G113A



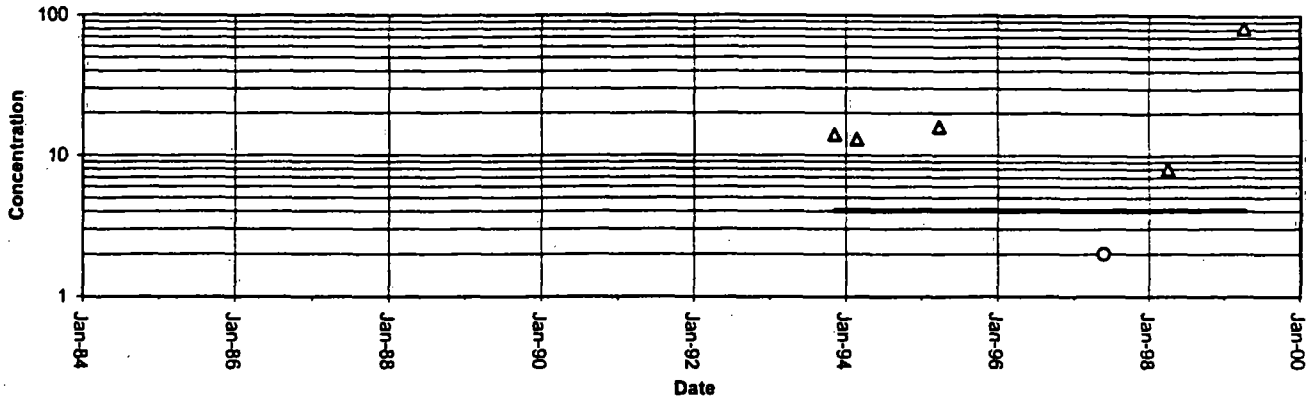
G114



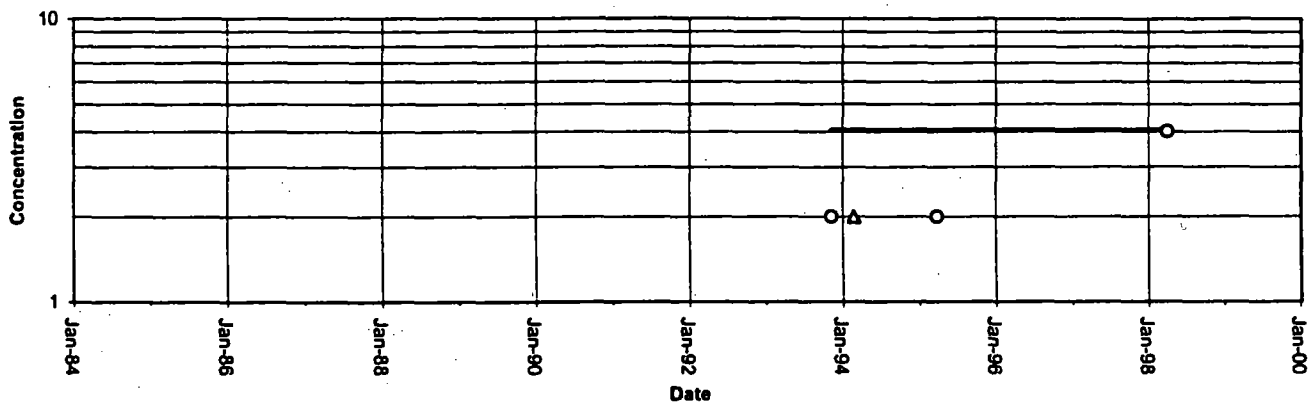
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

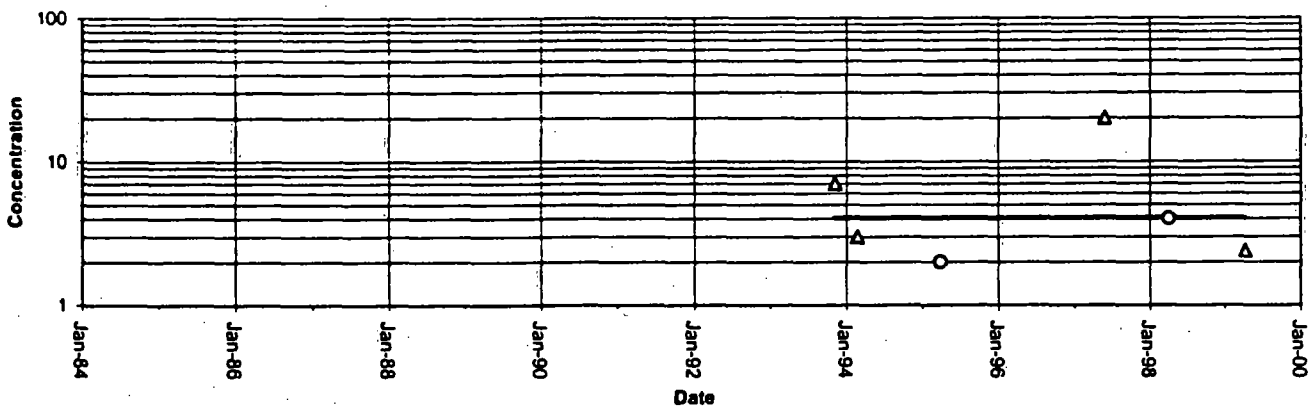
G115



G116



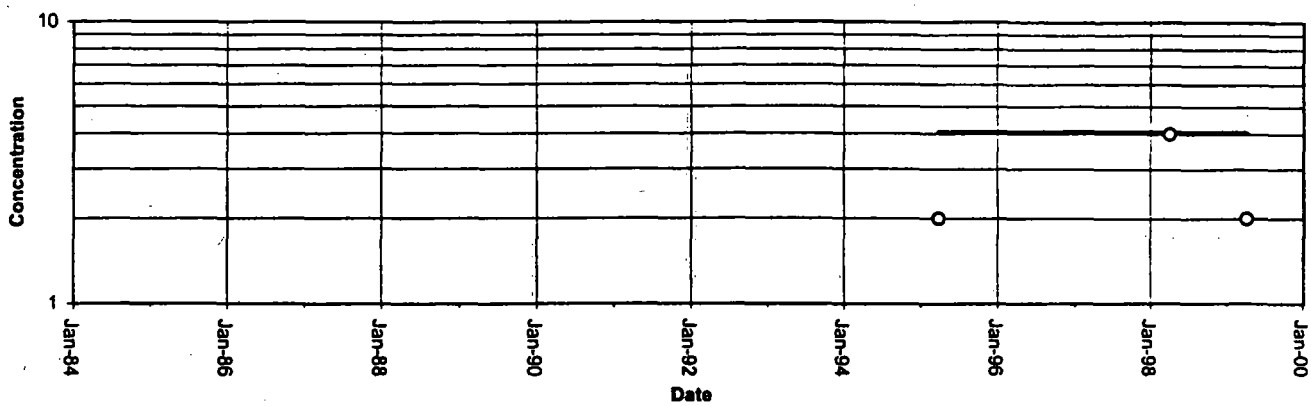
G116A



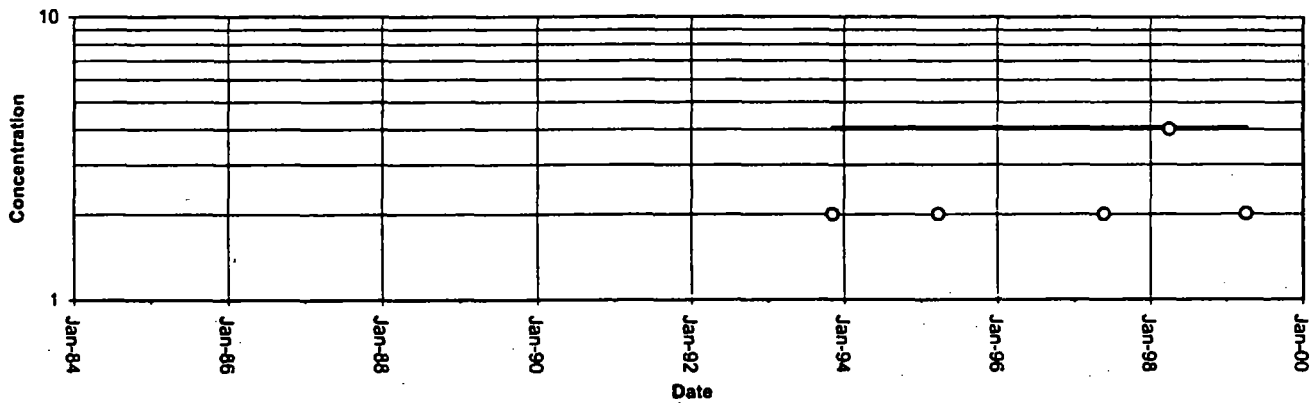
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

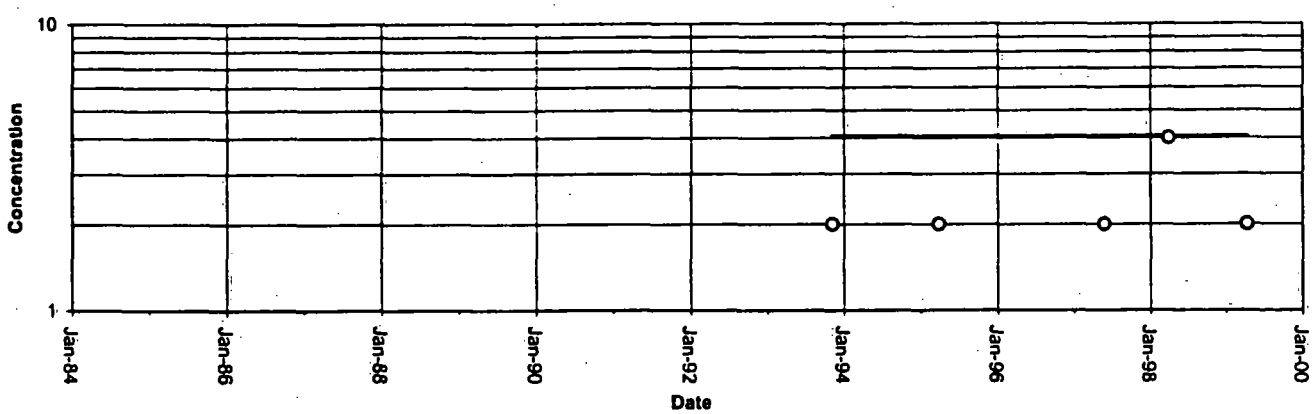
G116D



G117



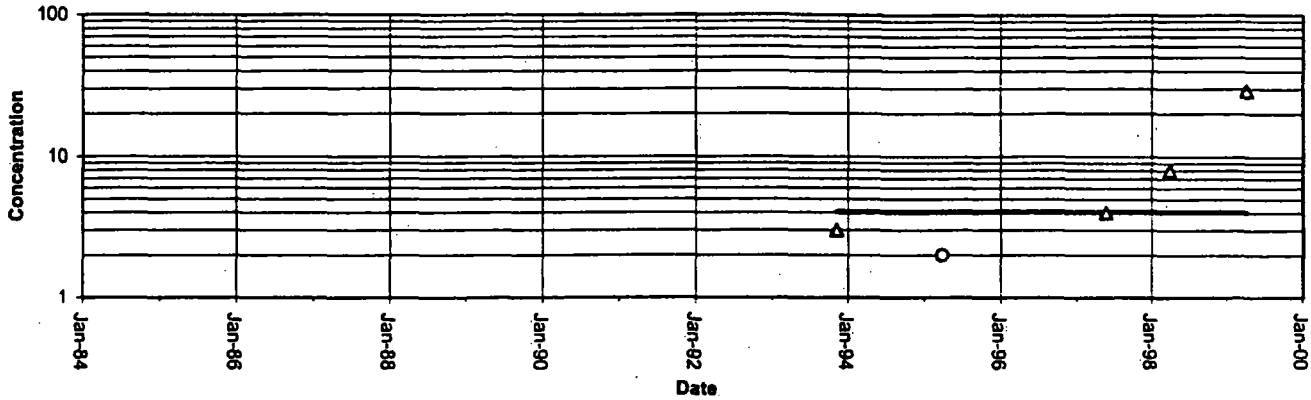
G118A



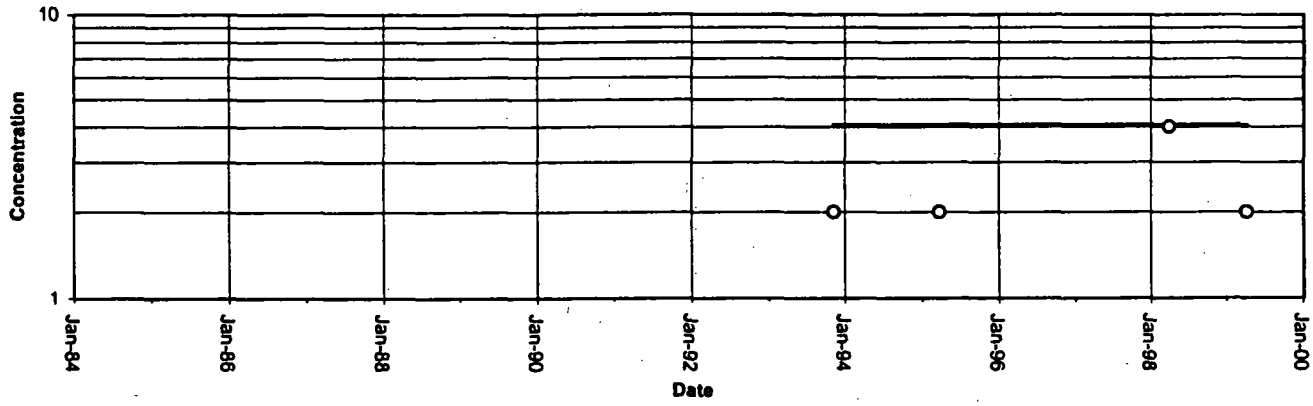
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

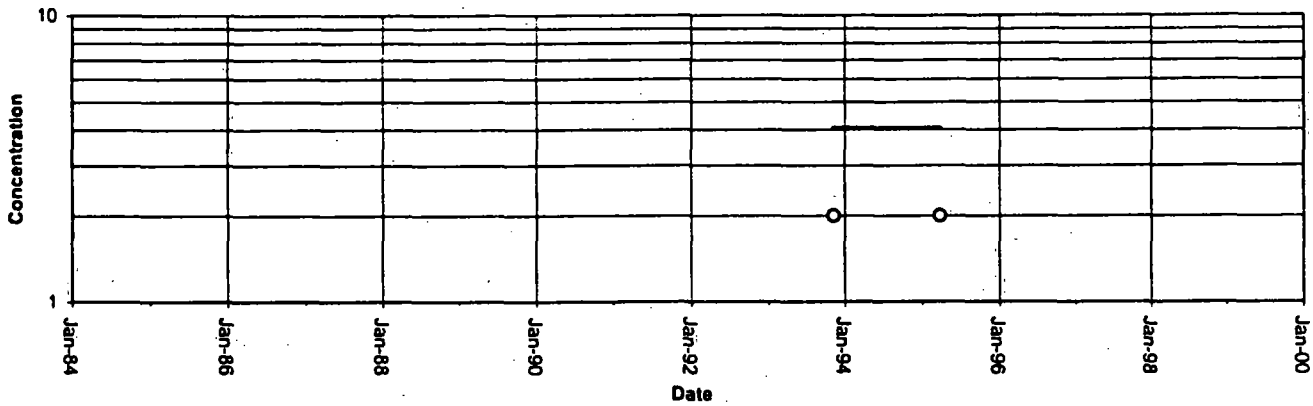
G118R



G119



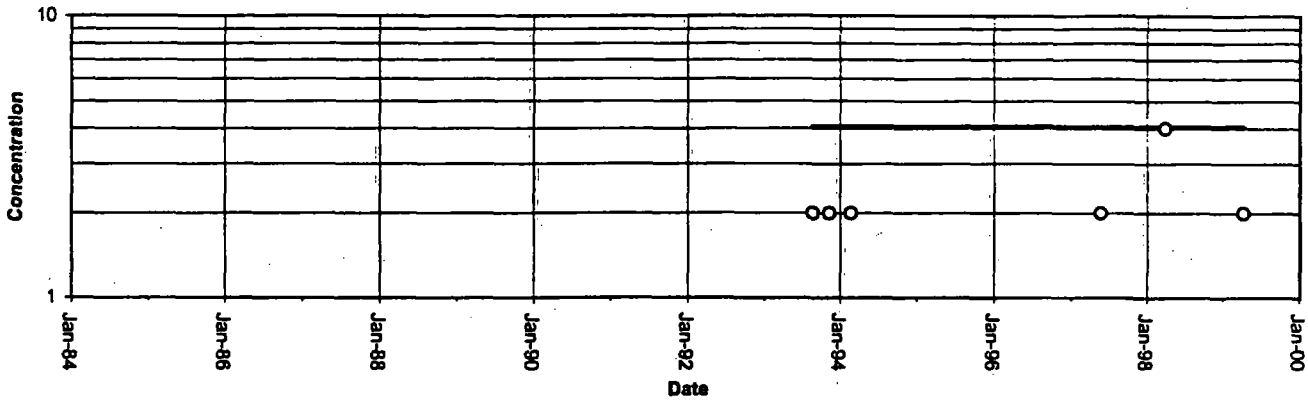
G119A



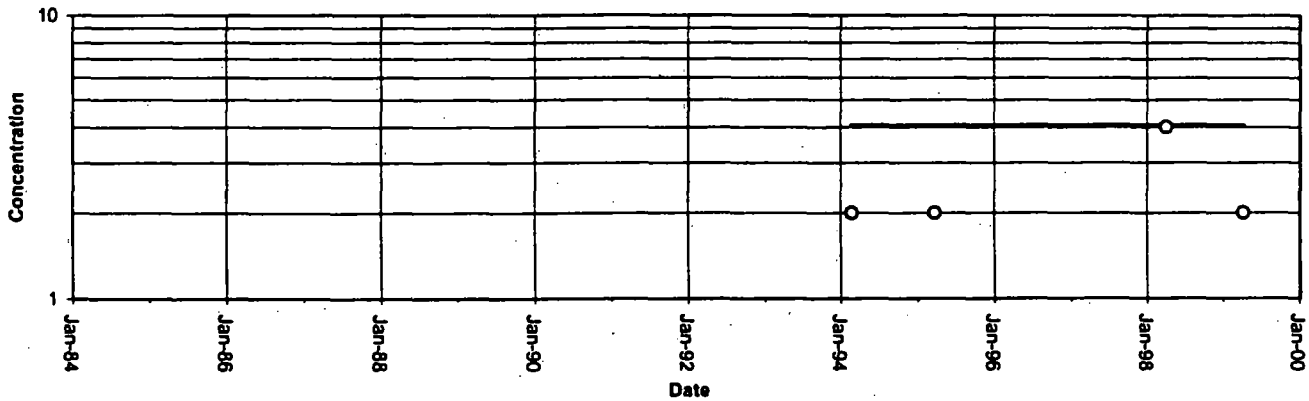
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

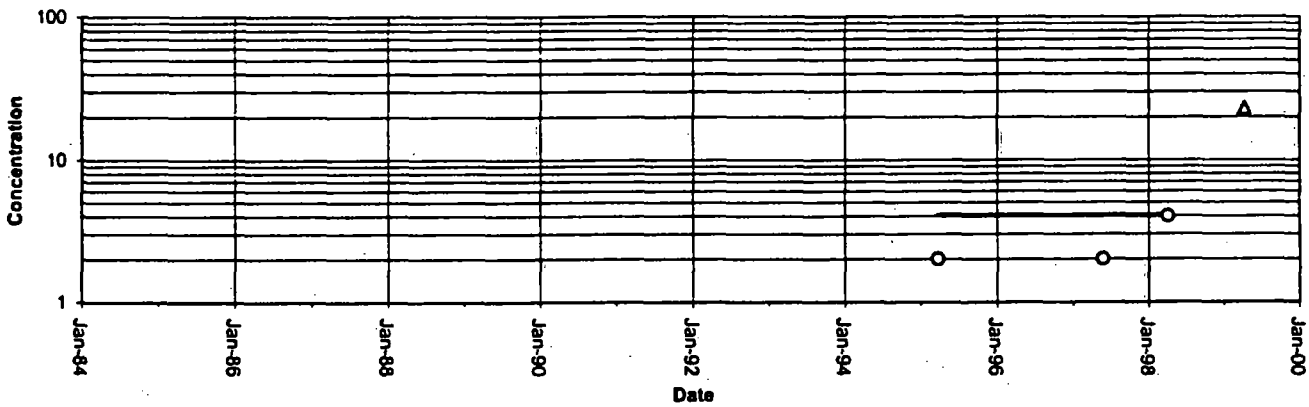
G120B



G130



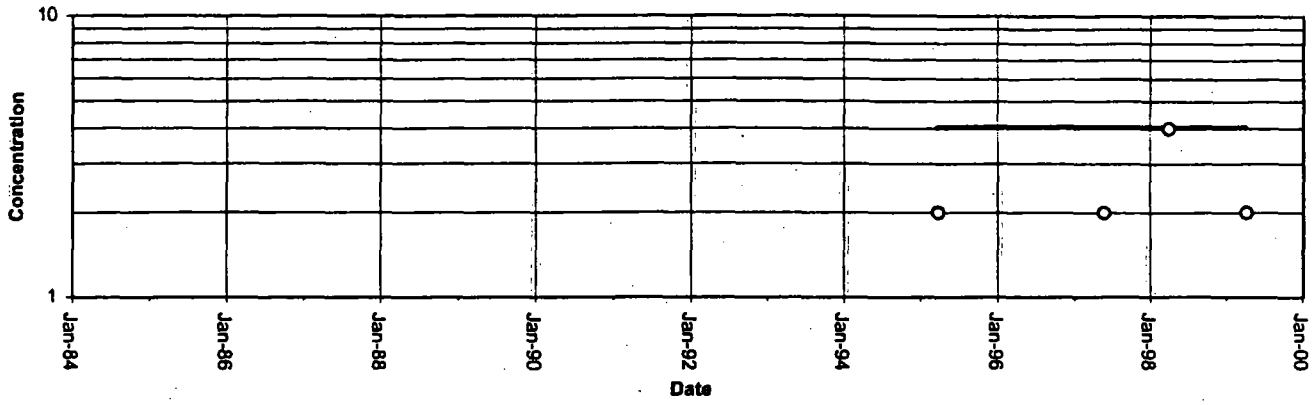
G132



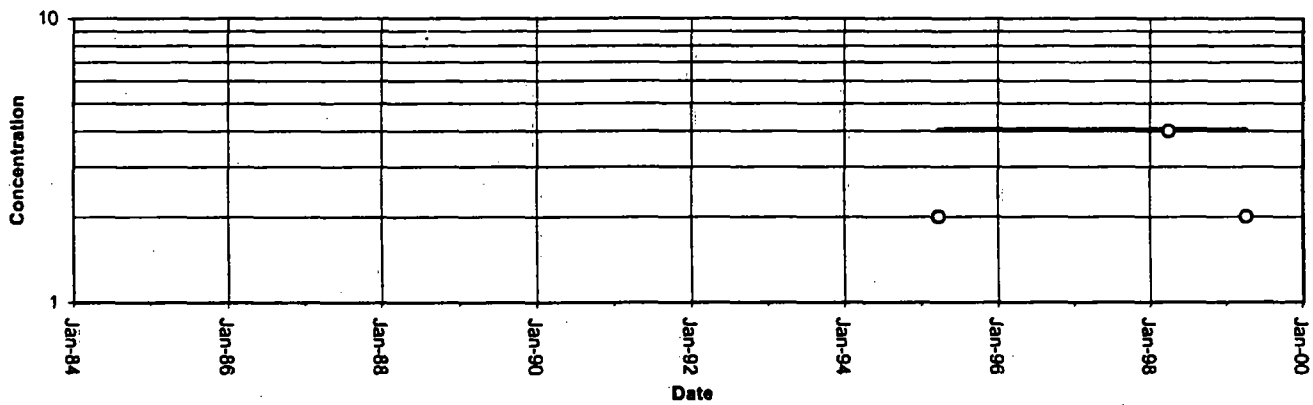
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

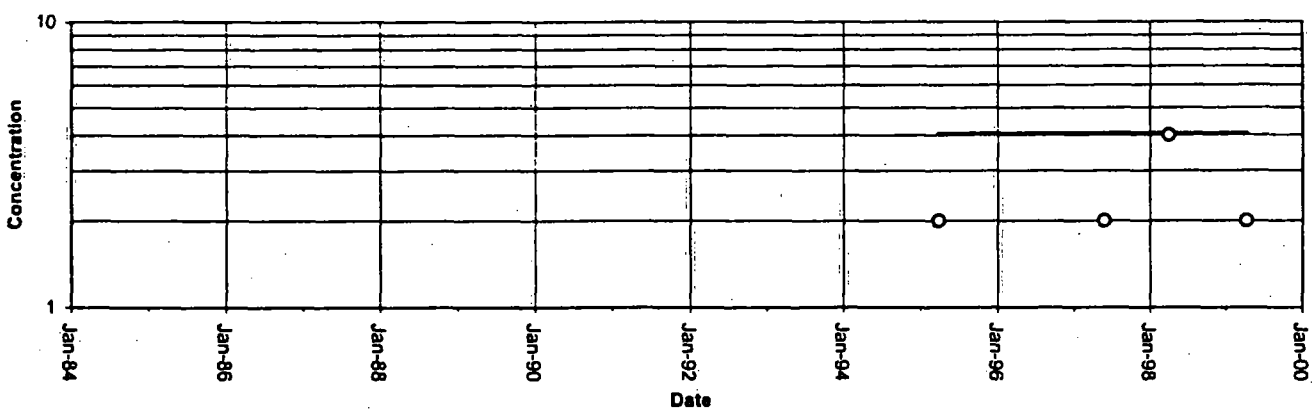
G33D



G33S



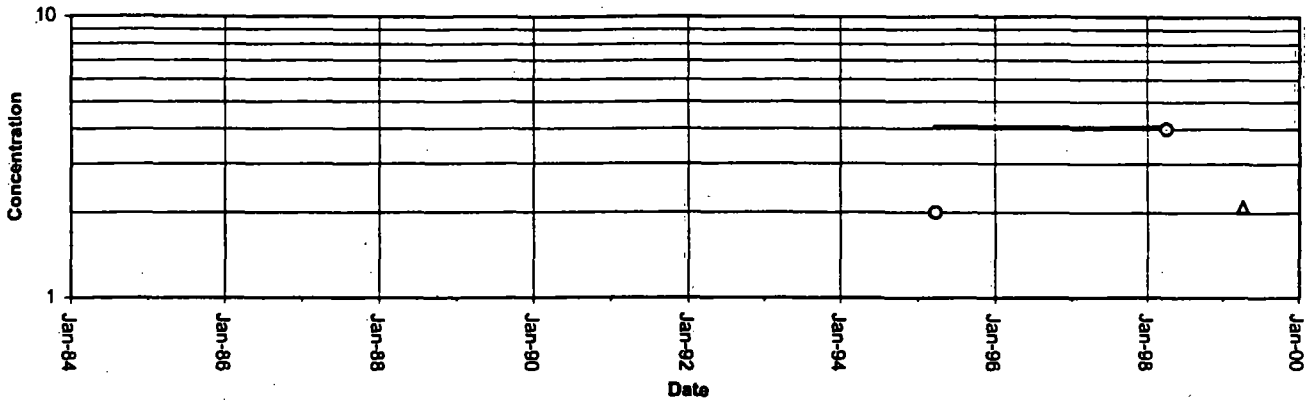
G34D



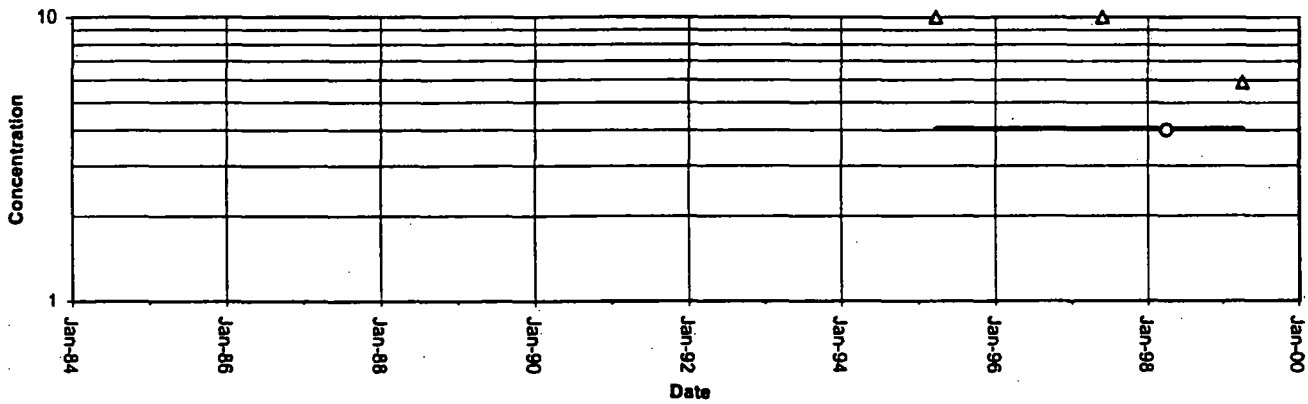
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

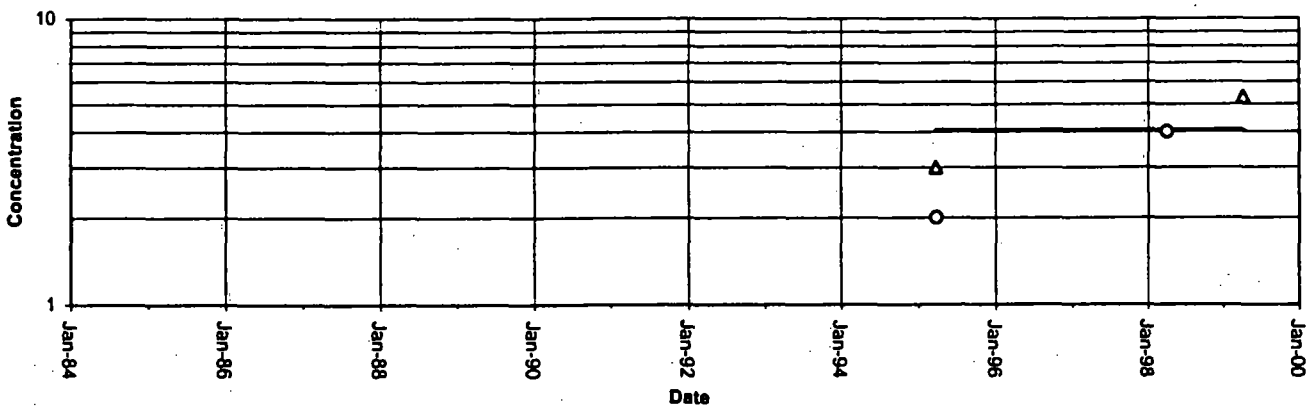
G34S



G35D



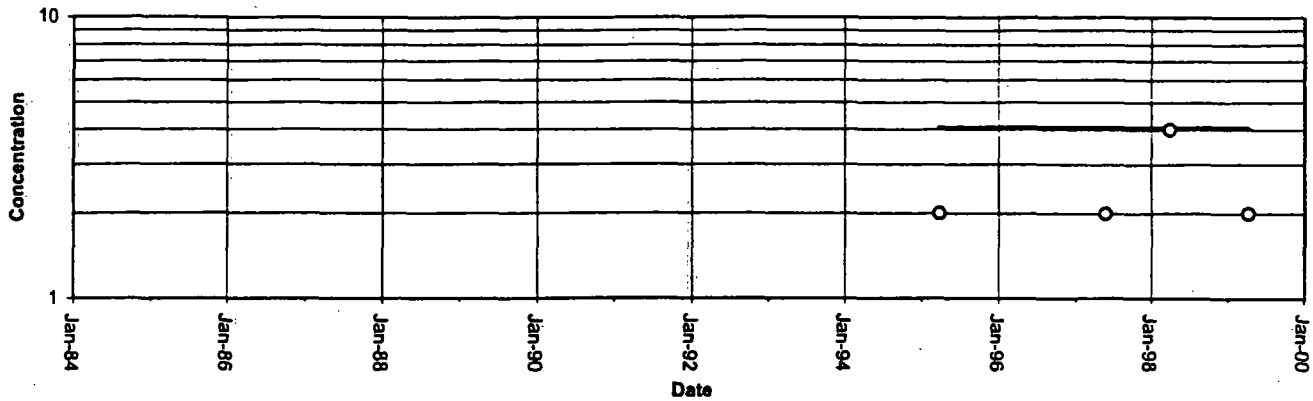
G35S



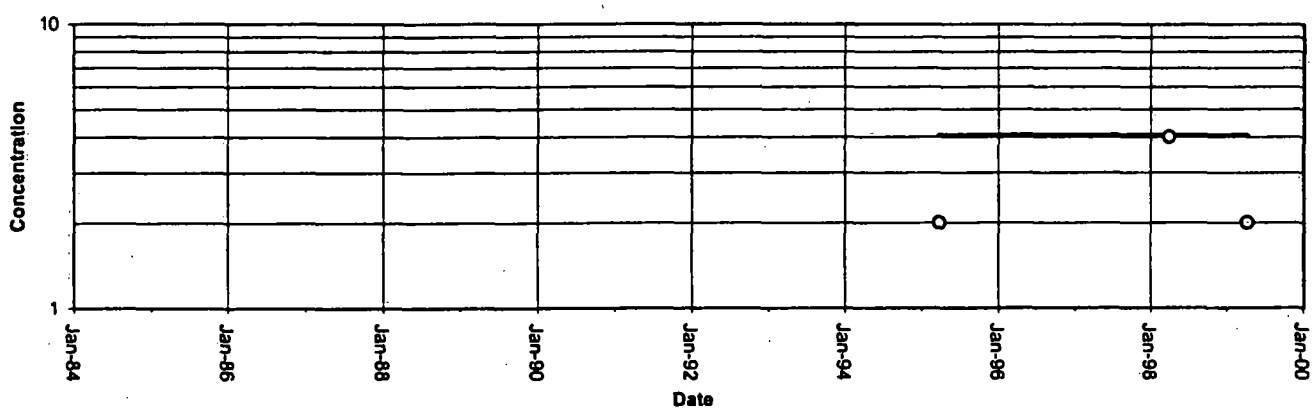
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

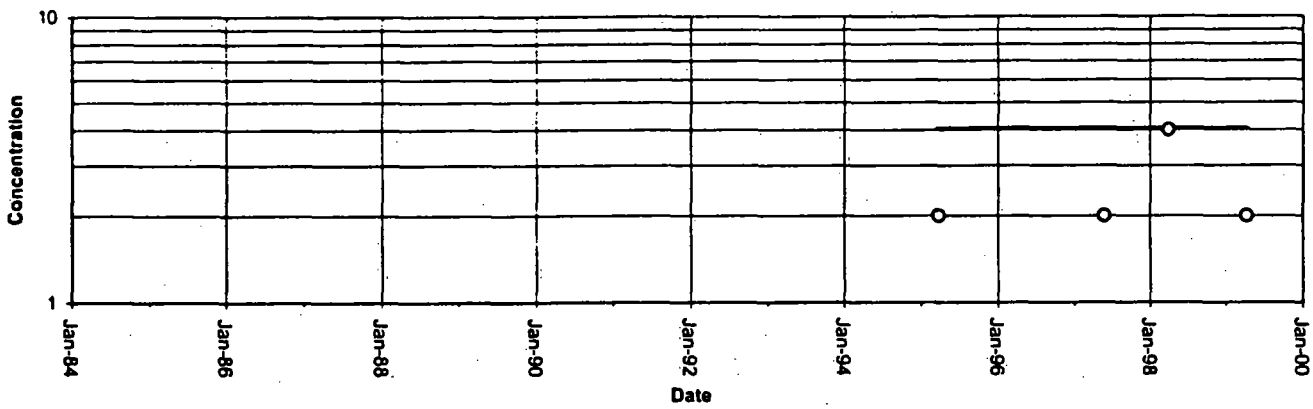
G36



G37D



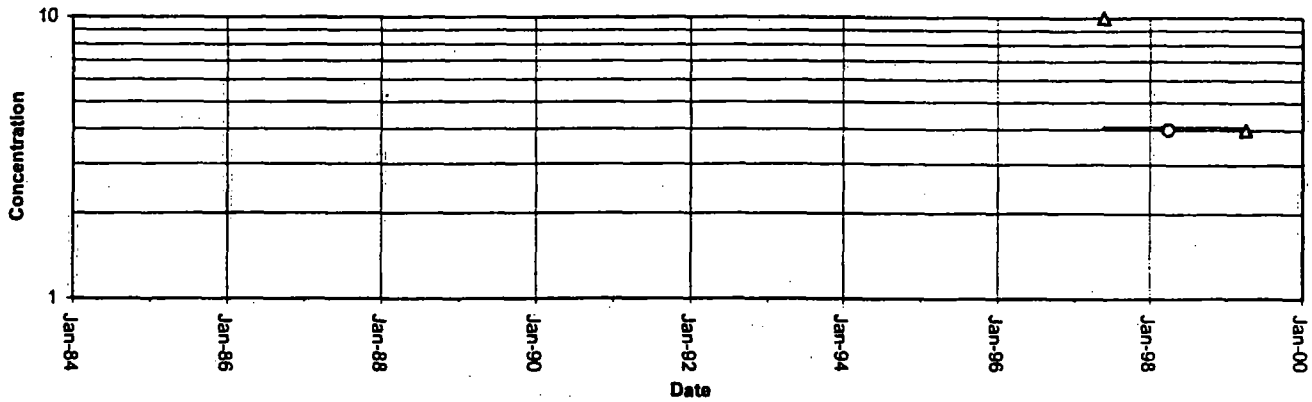
G37S



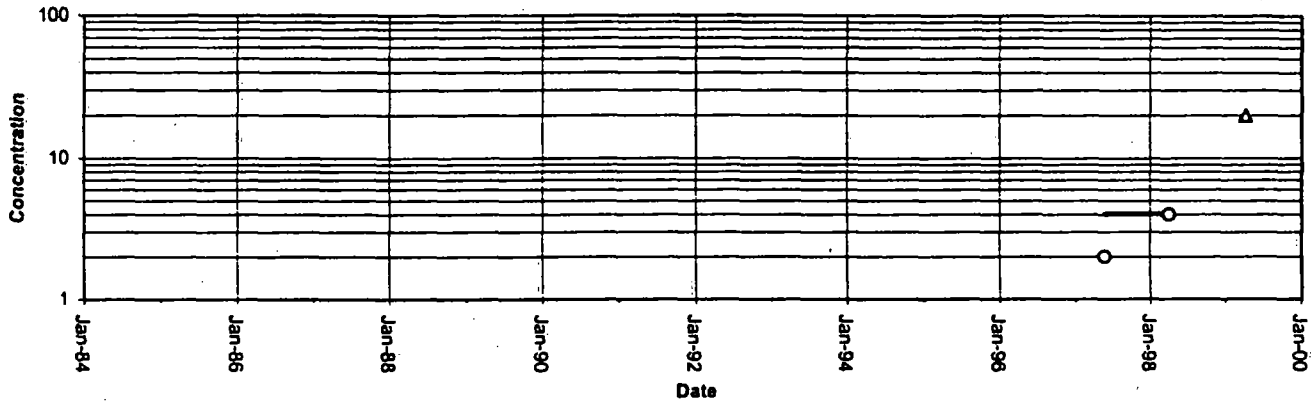
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

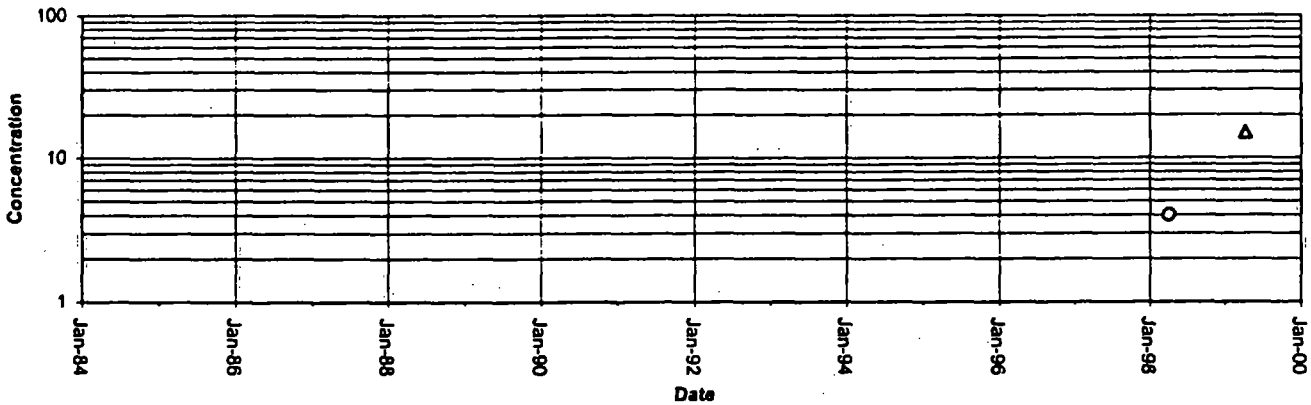
G38



G39



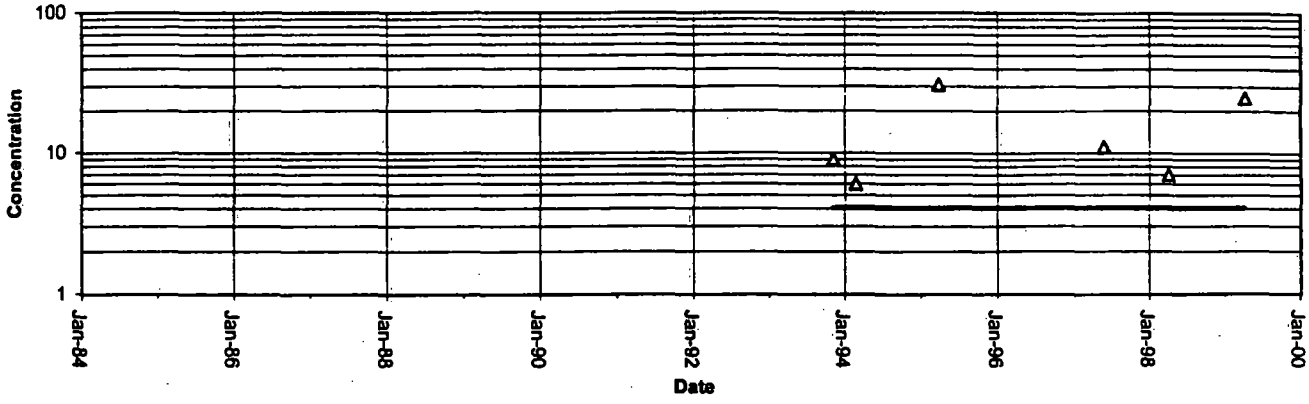
G40



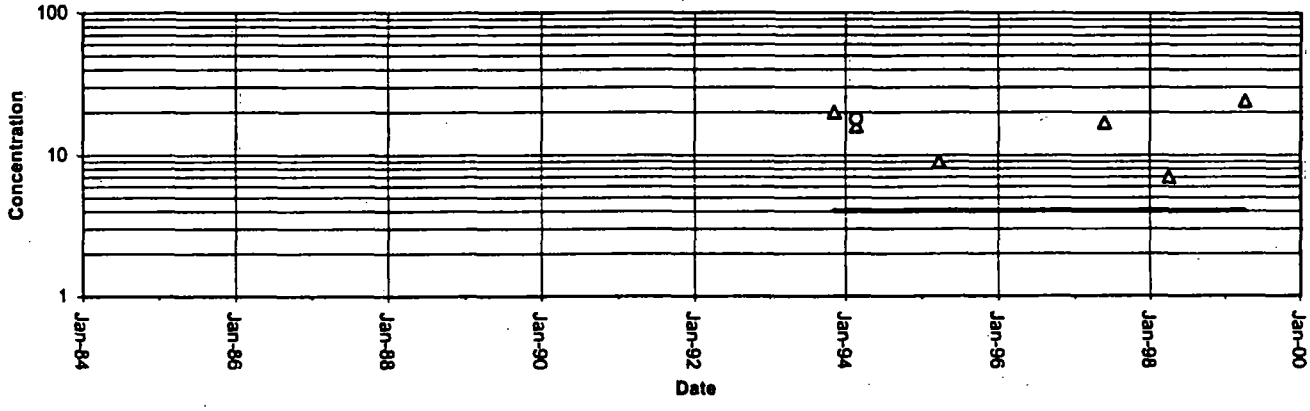
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

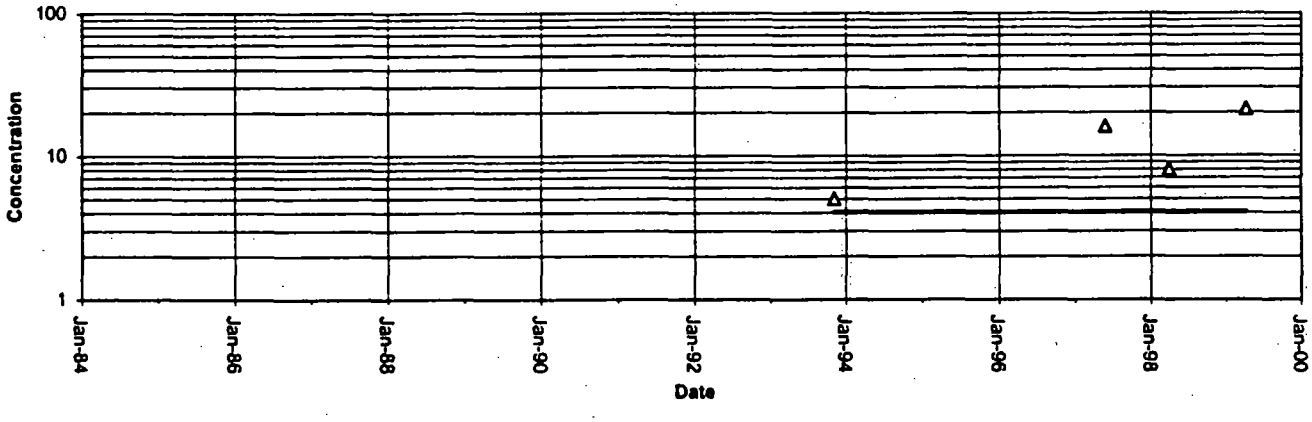
MW106



P1



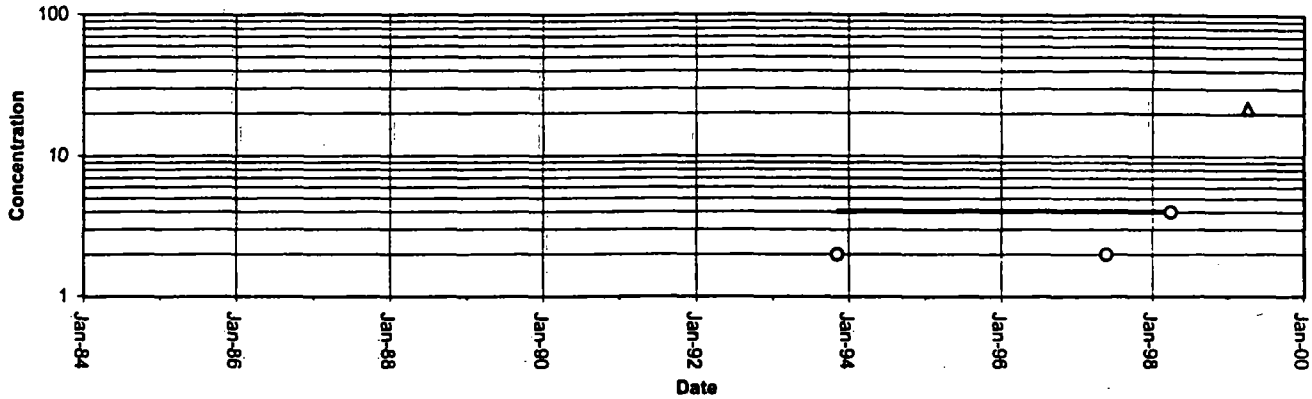
P3R



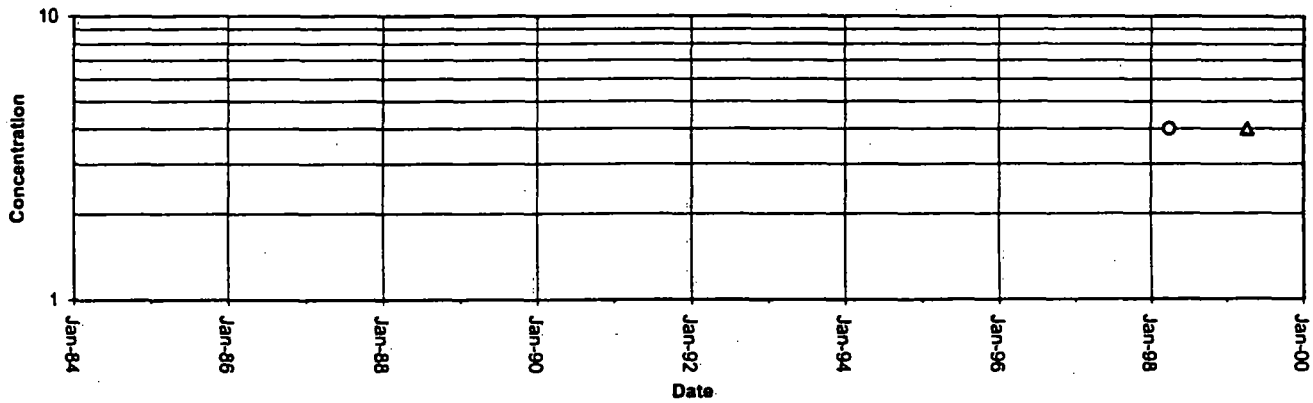
Biological Oxygen Demand (BOD) (mg/L)

AGQS Δ Concentration O NonDetect

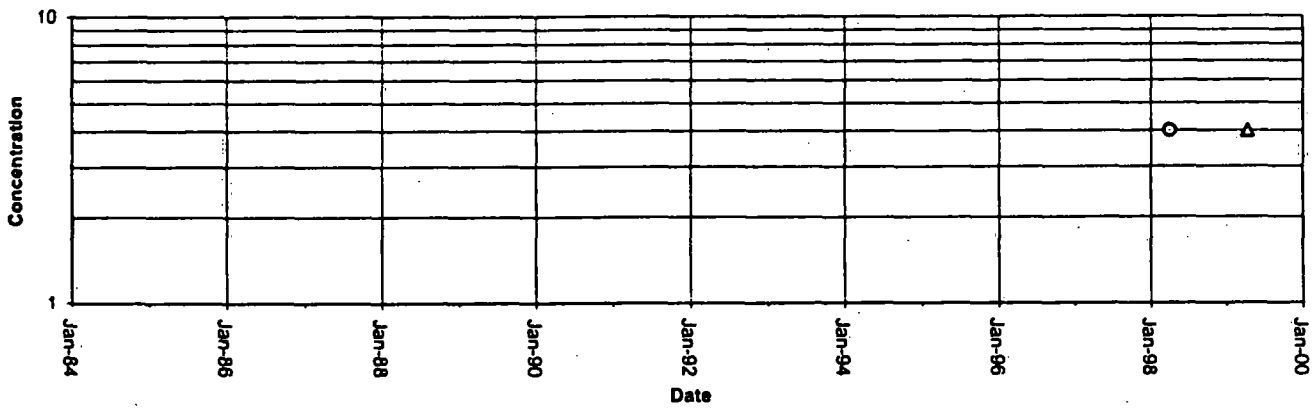
P4R



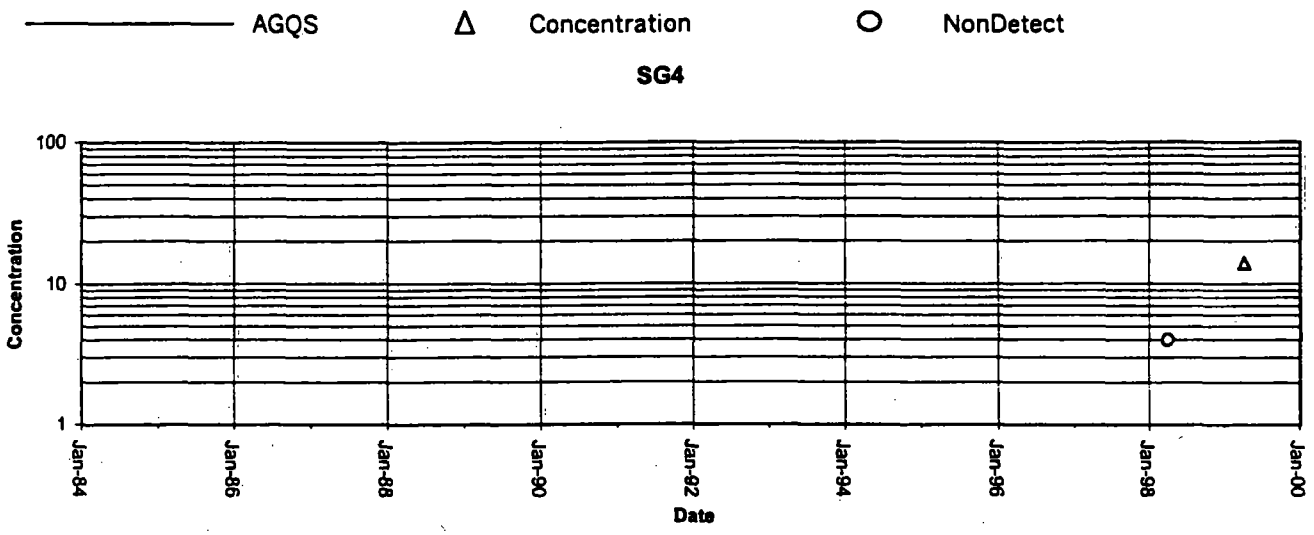
SG1



SG3



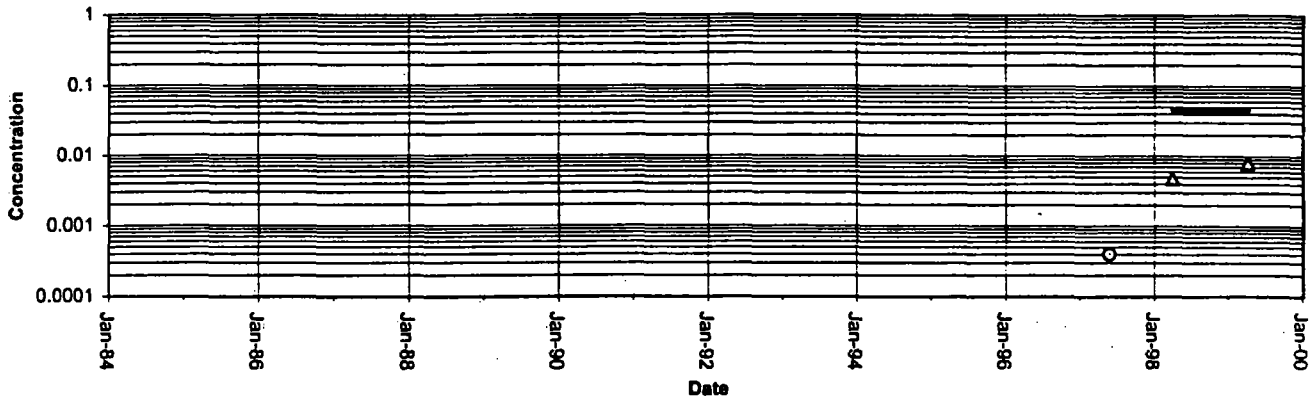
Biological Oxygen Demand (BOD) (mg/L)



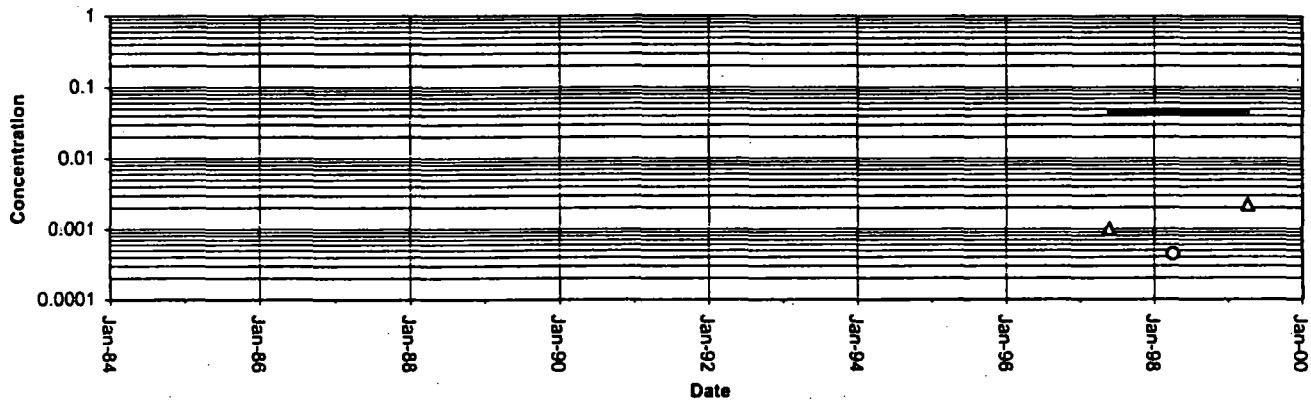
Cadmium (mg/L)

AGQS Concentration NonDetect

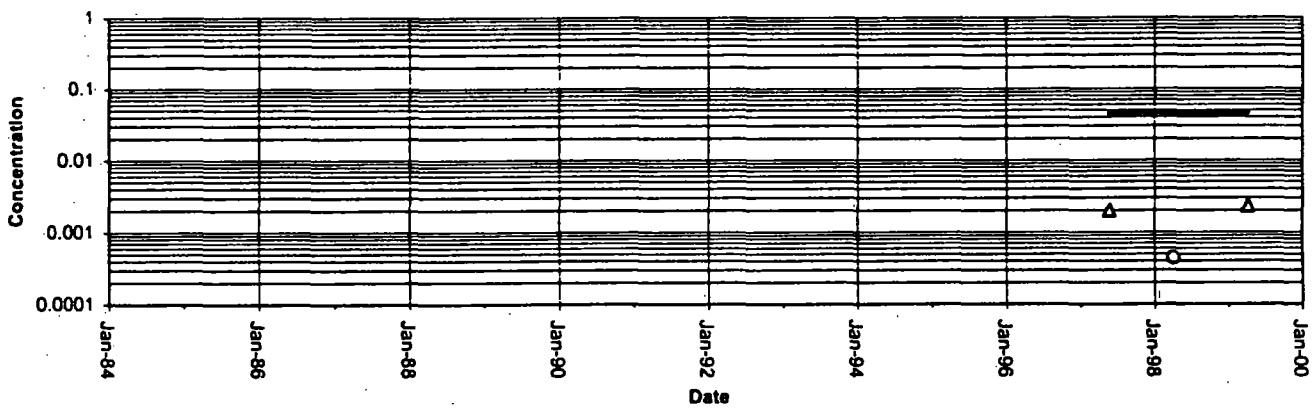
B15R



G109



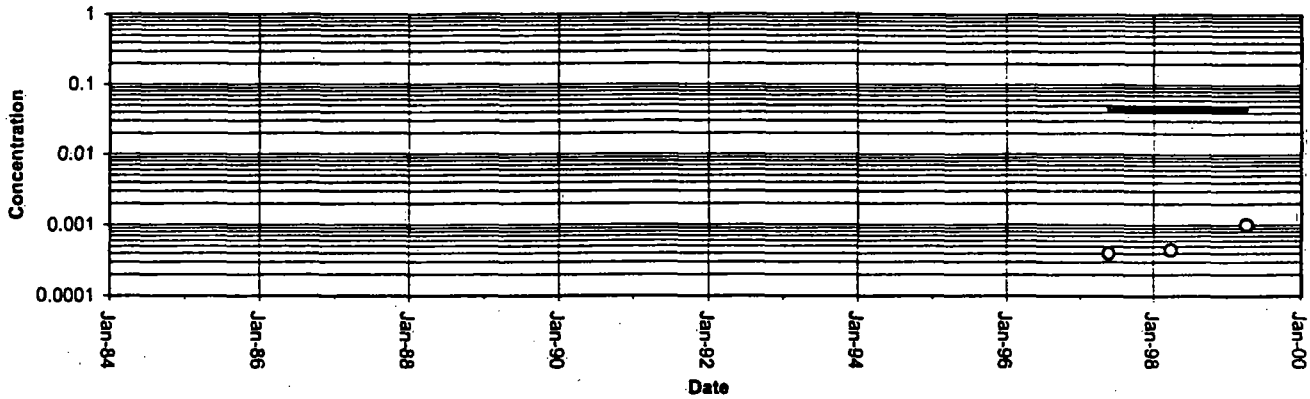
G109A



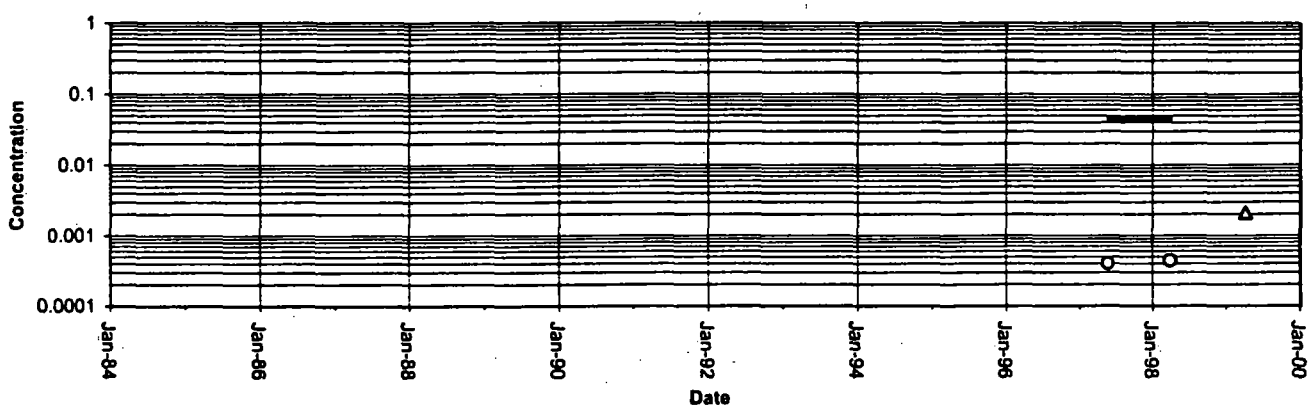
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

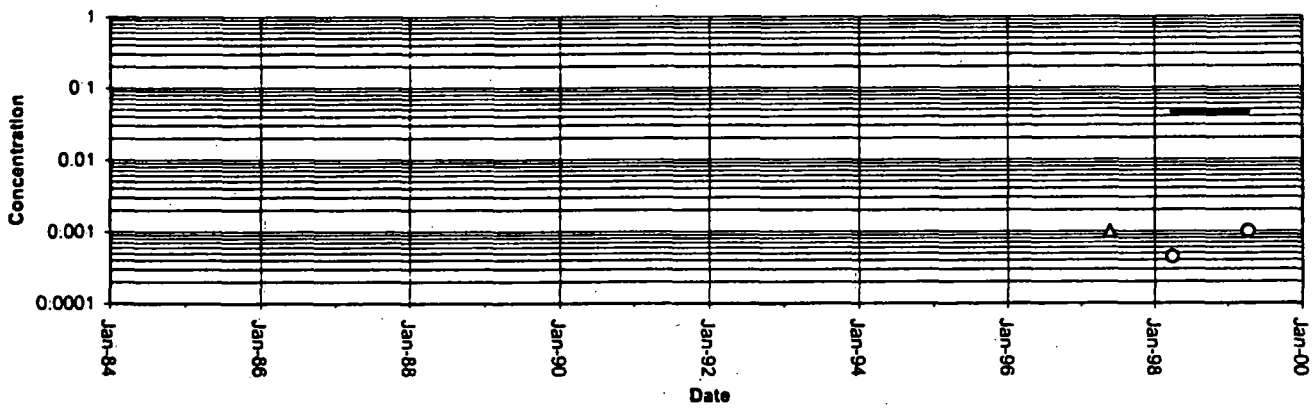
G113



G113A



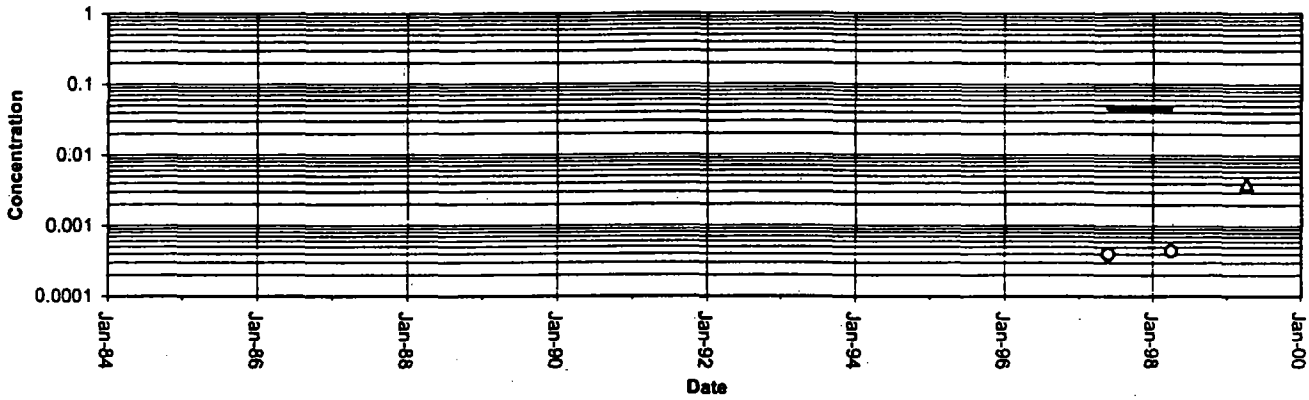
G114



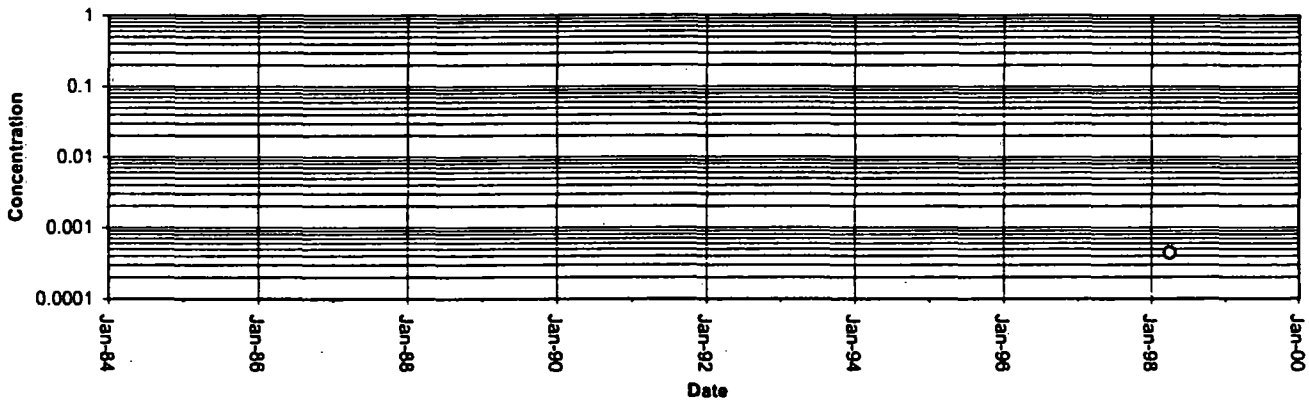
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

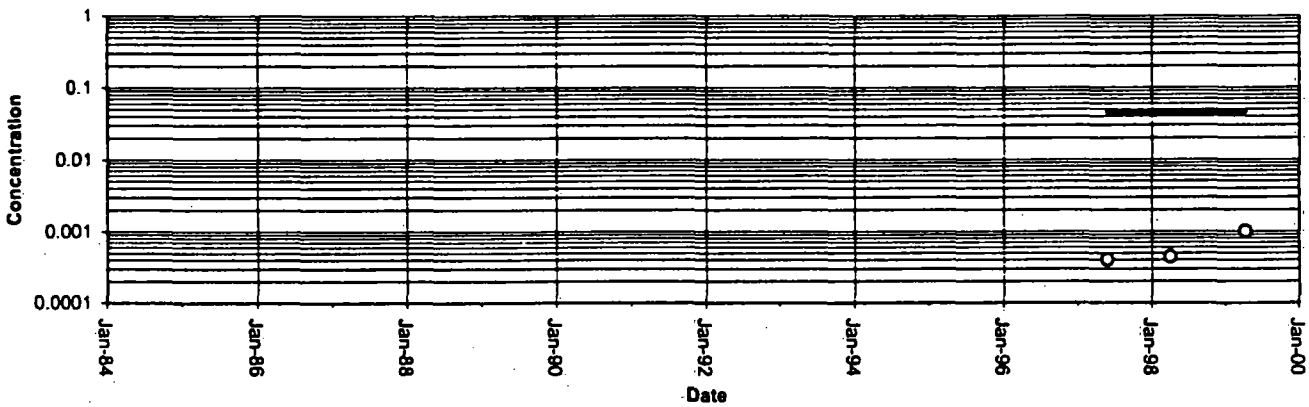
G115



G116



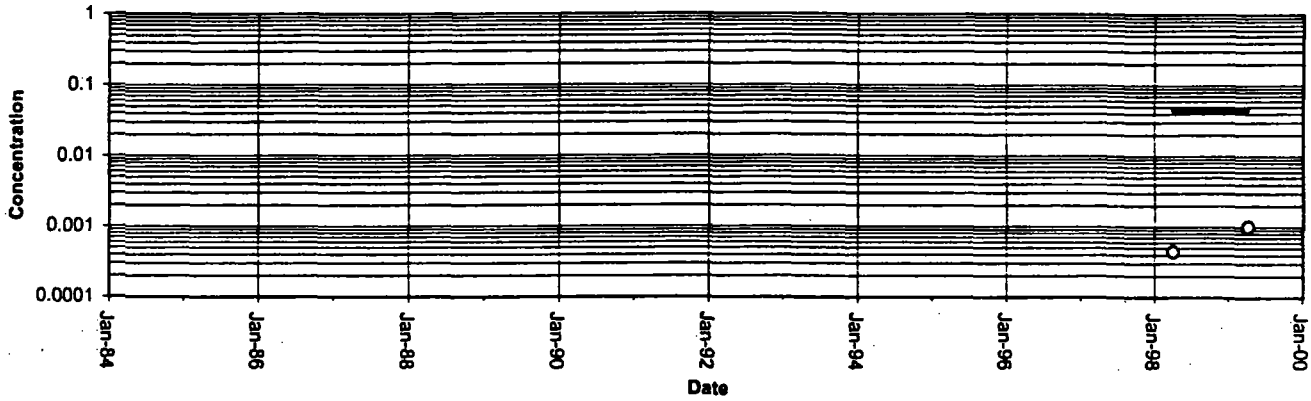
G116A



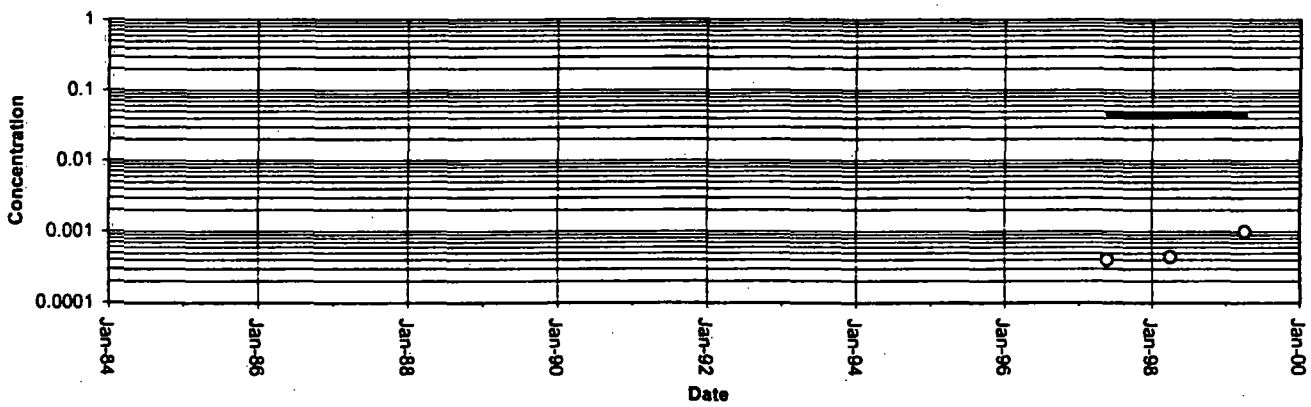
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

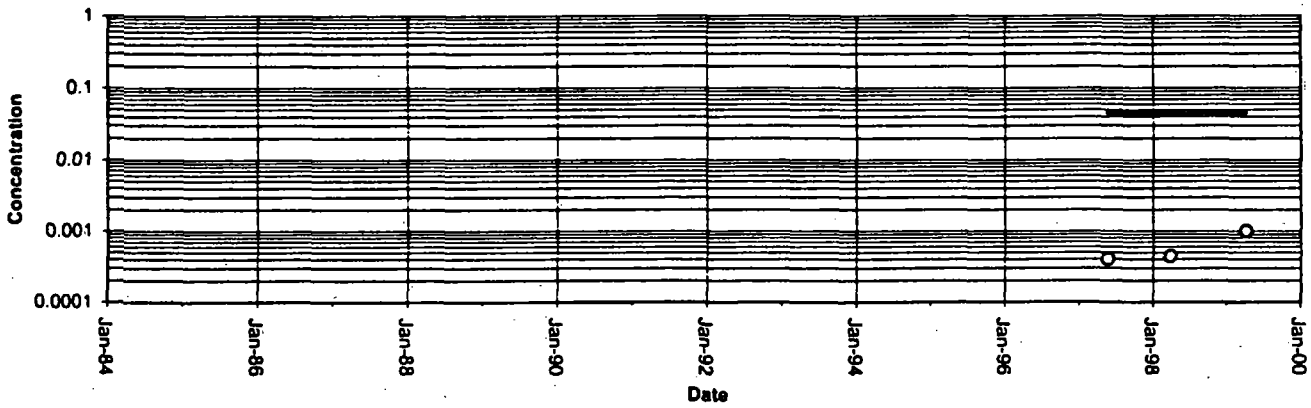
G116D



G117



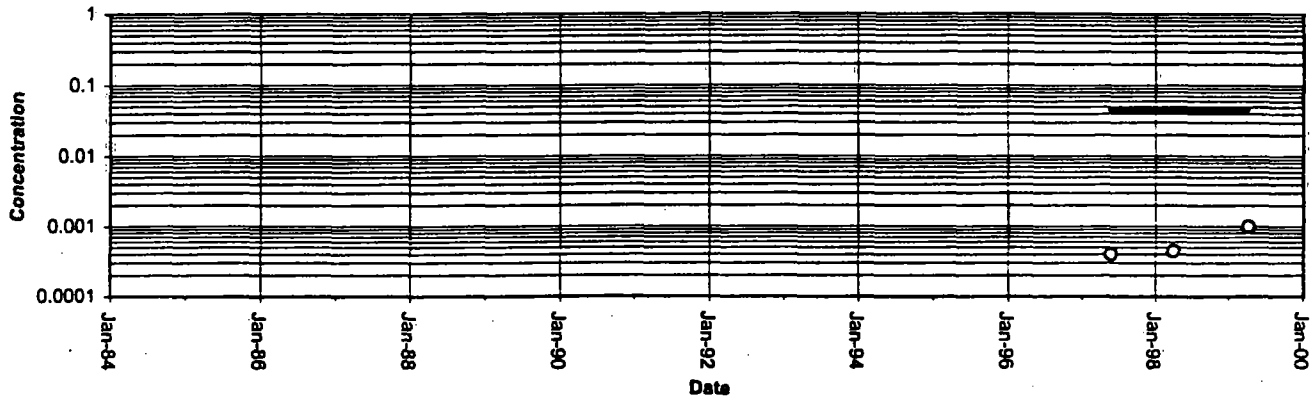
G118A



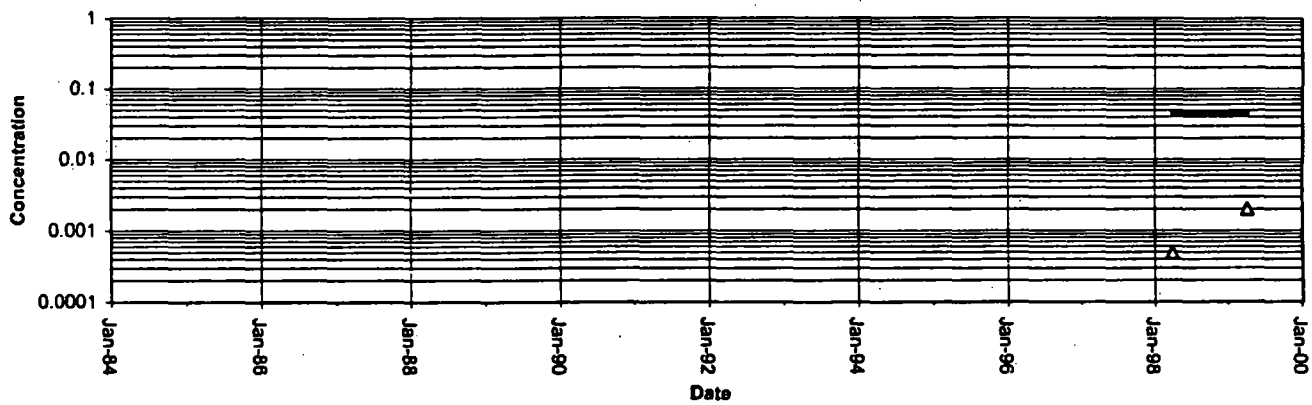
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

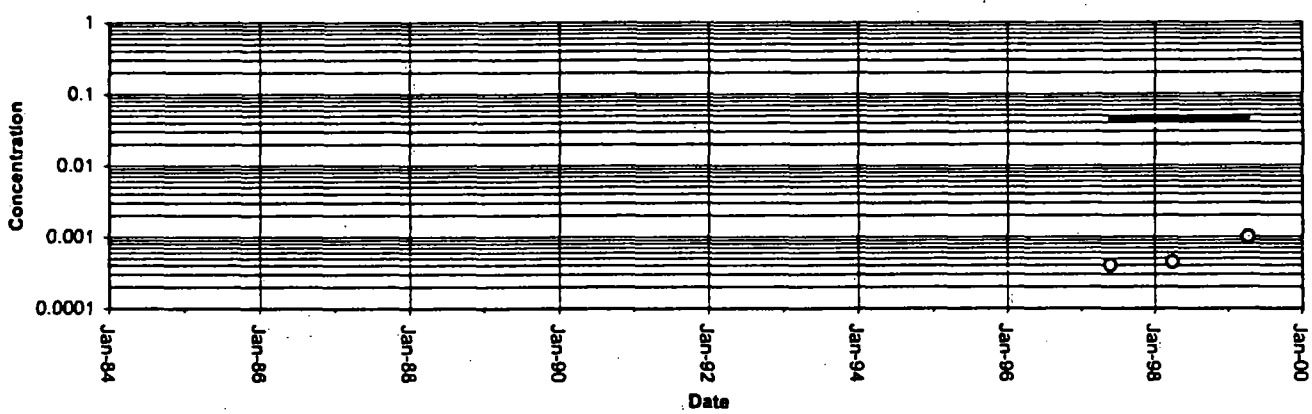
G118R



G119



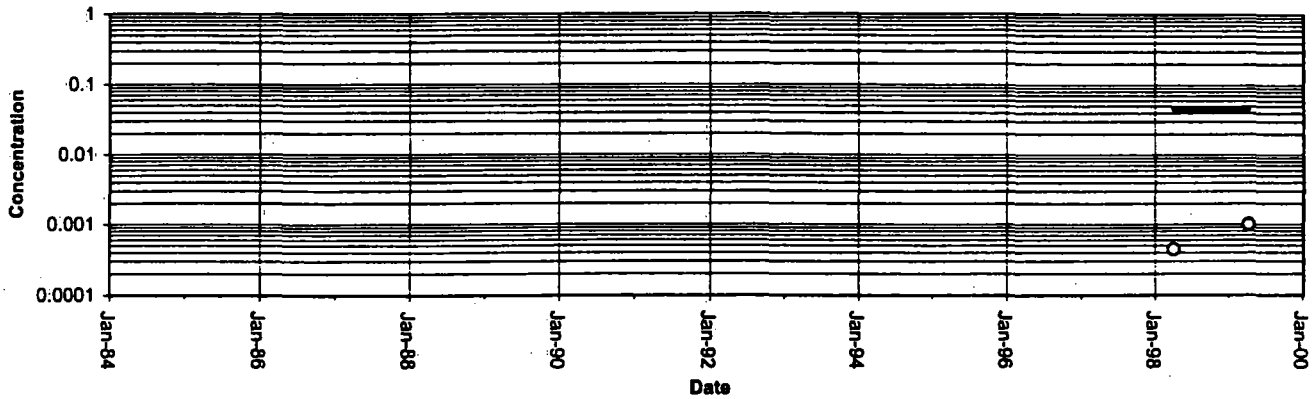
G120B



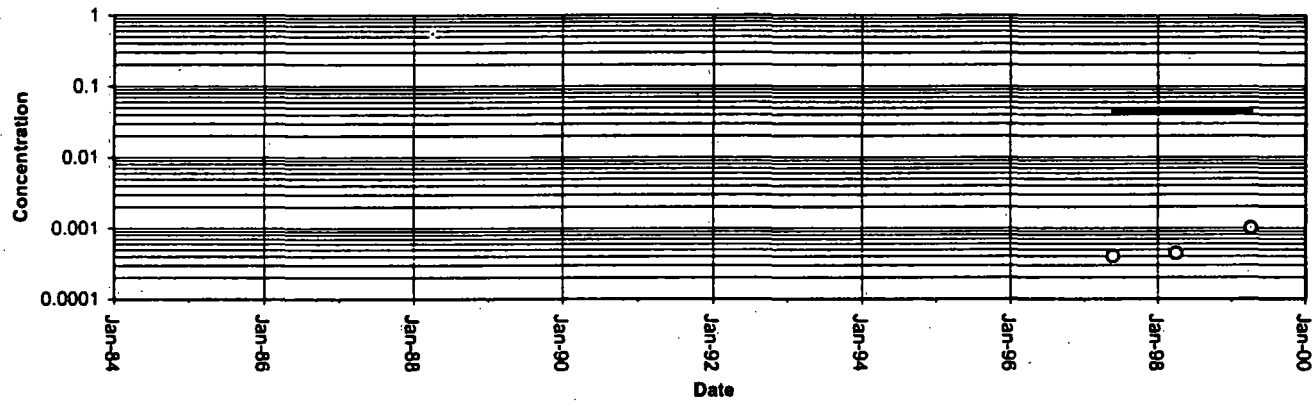
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

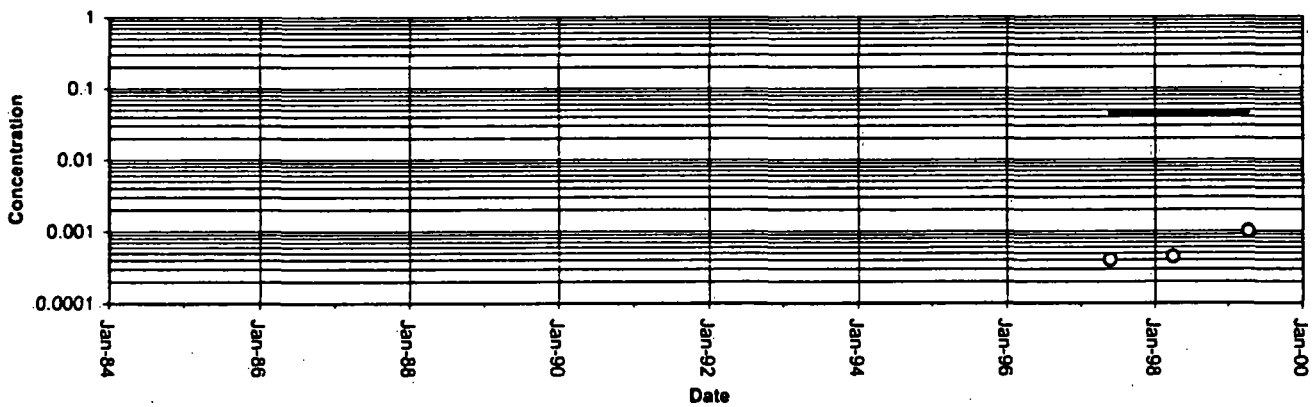
G130



G132



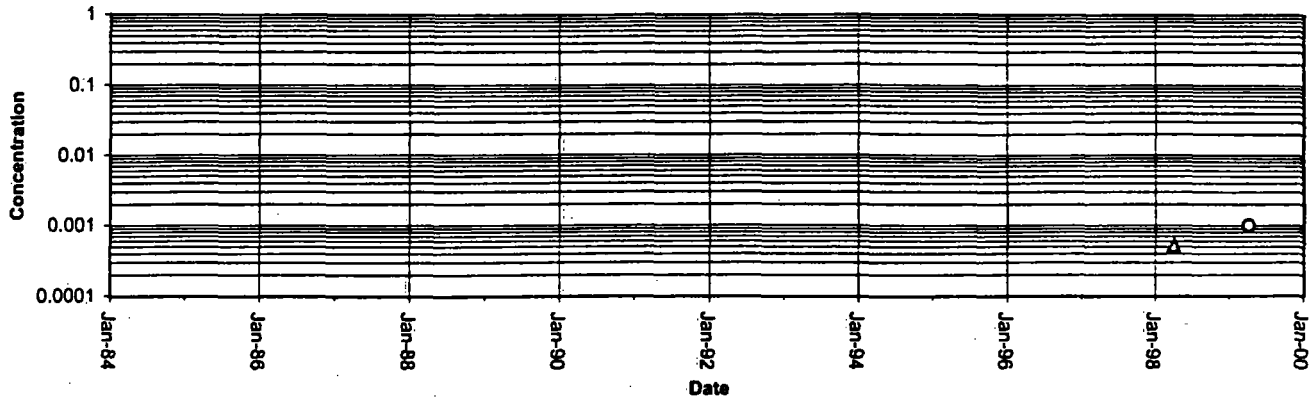
G33D



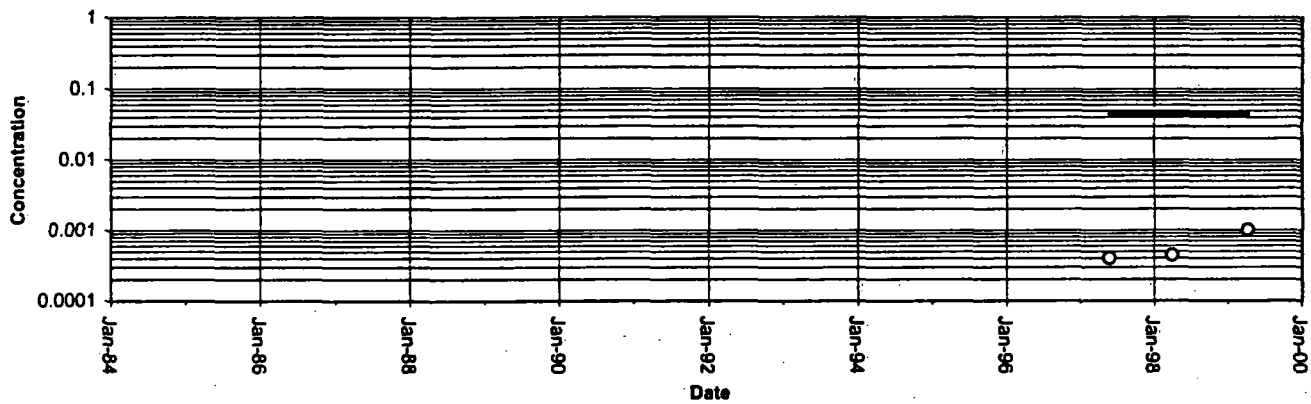
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

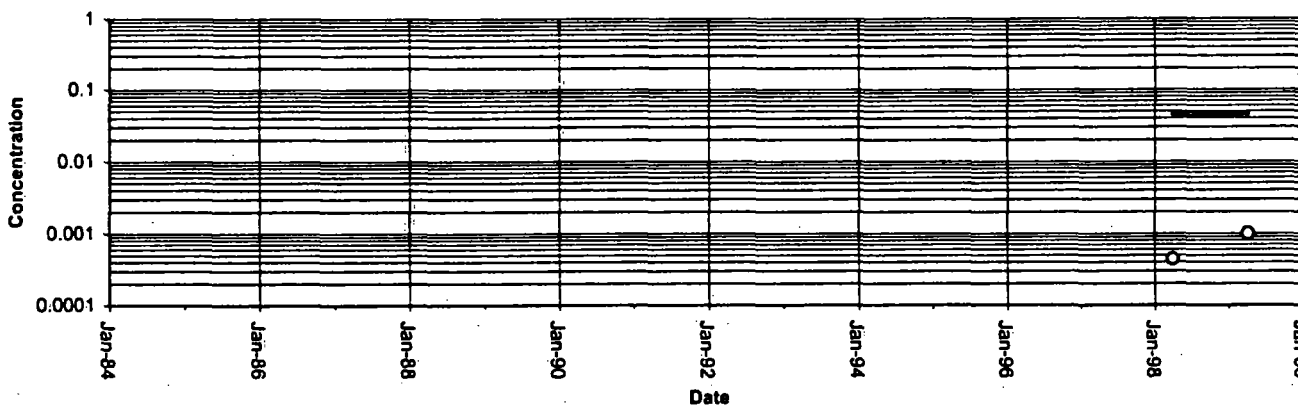
G33S



G34D



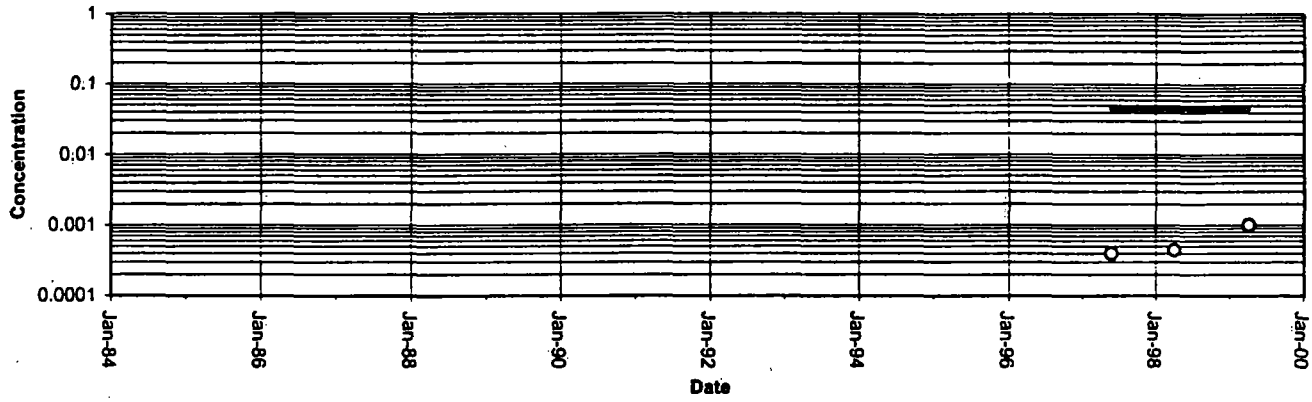
G34S



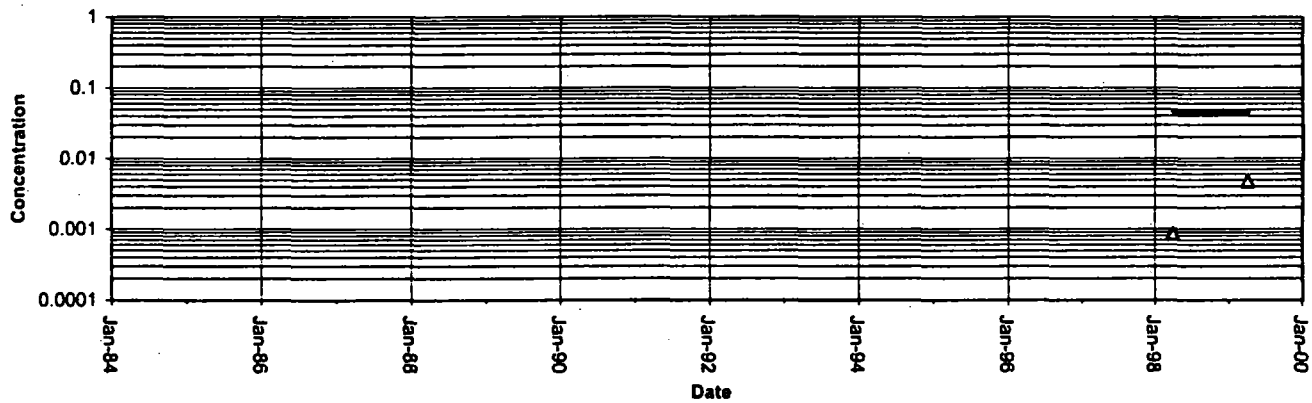
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

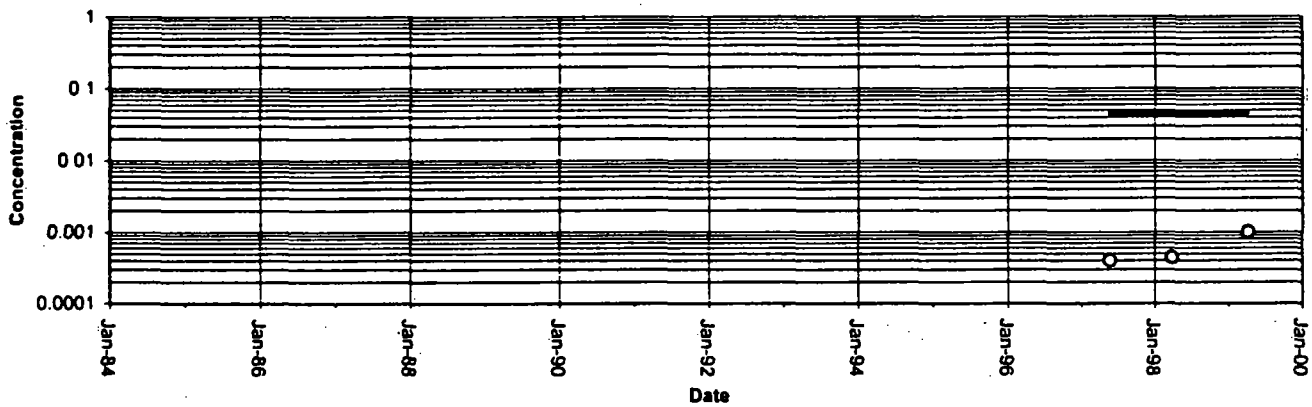
G35D



G35S



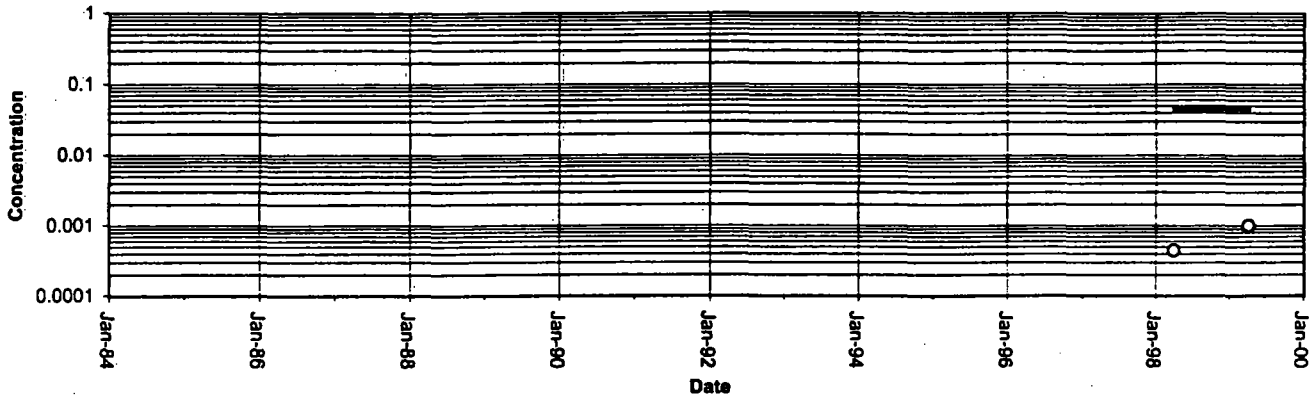
G36



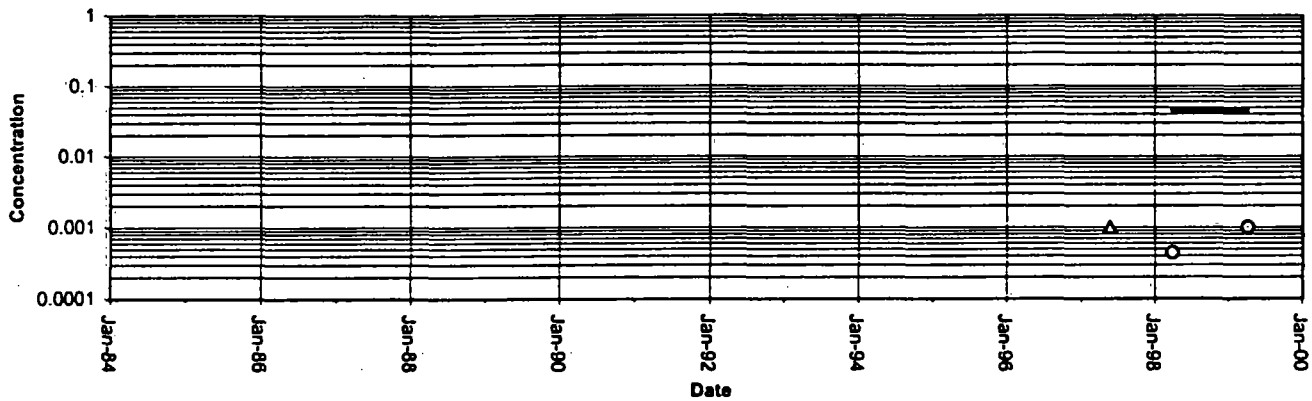
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

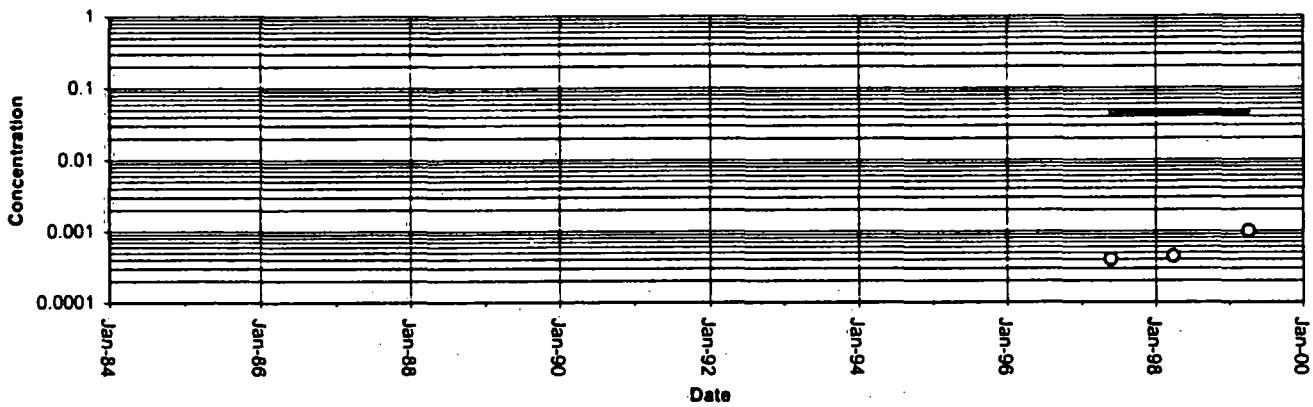
G37D



G37S



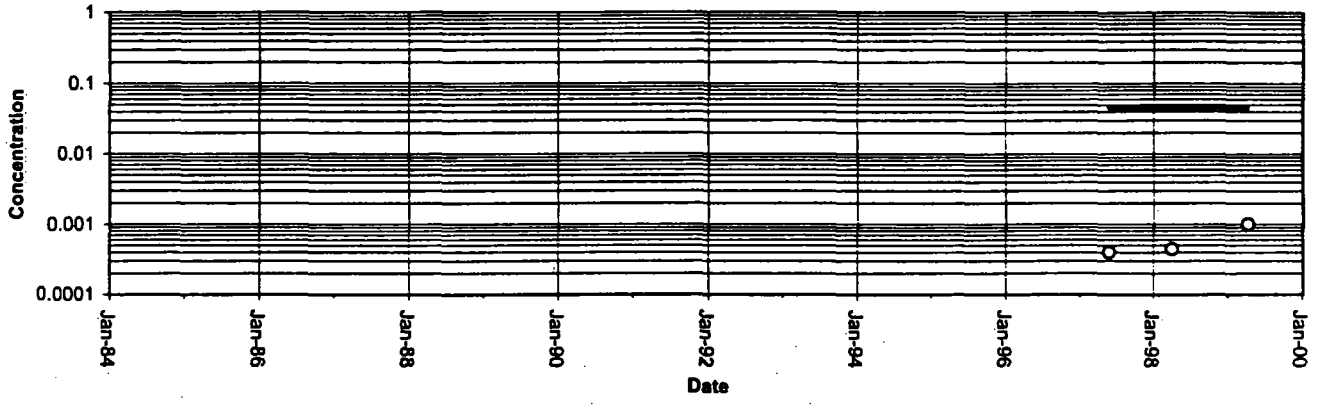
G38



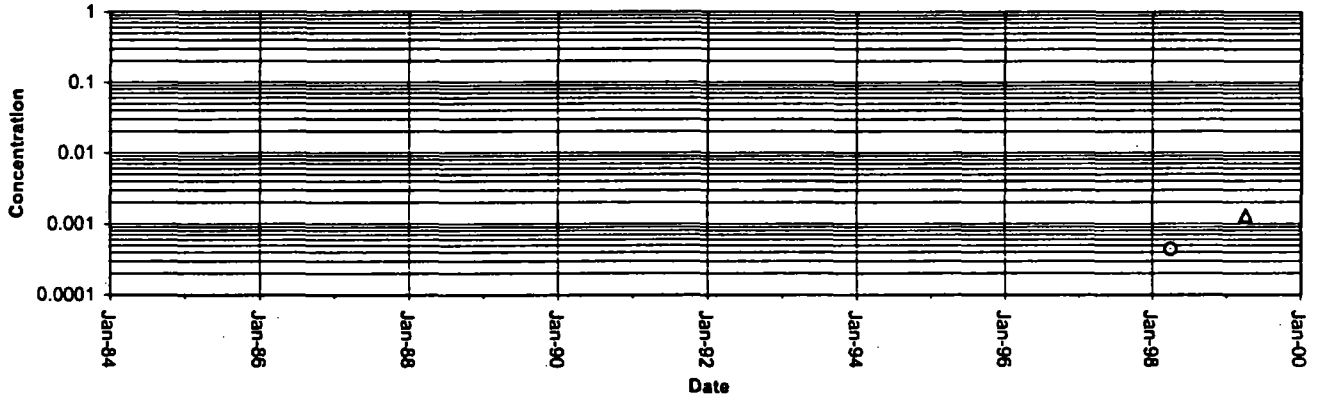
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

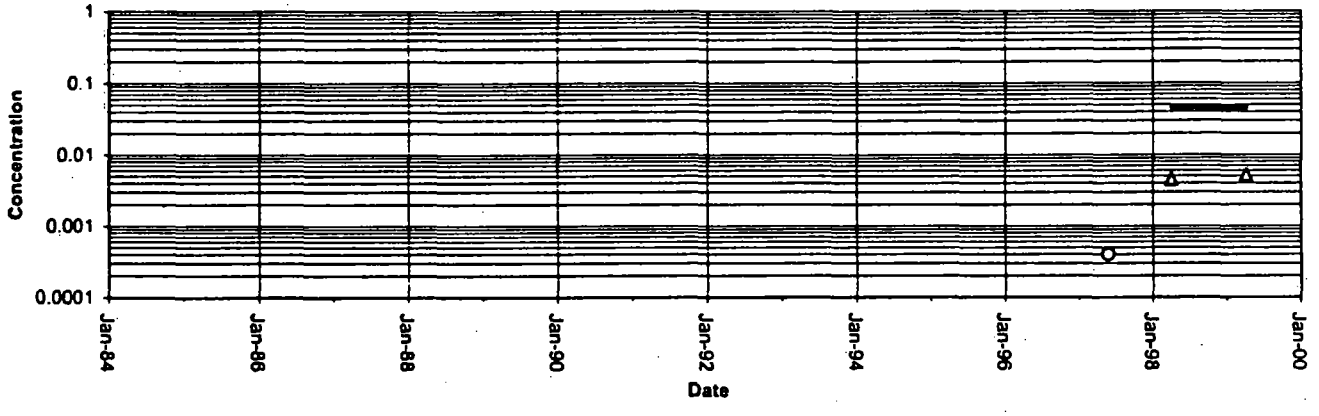
G39



G40



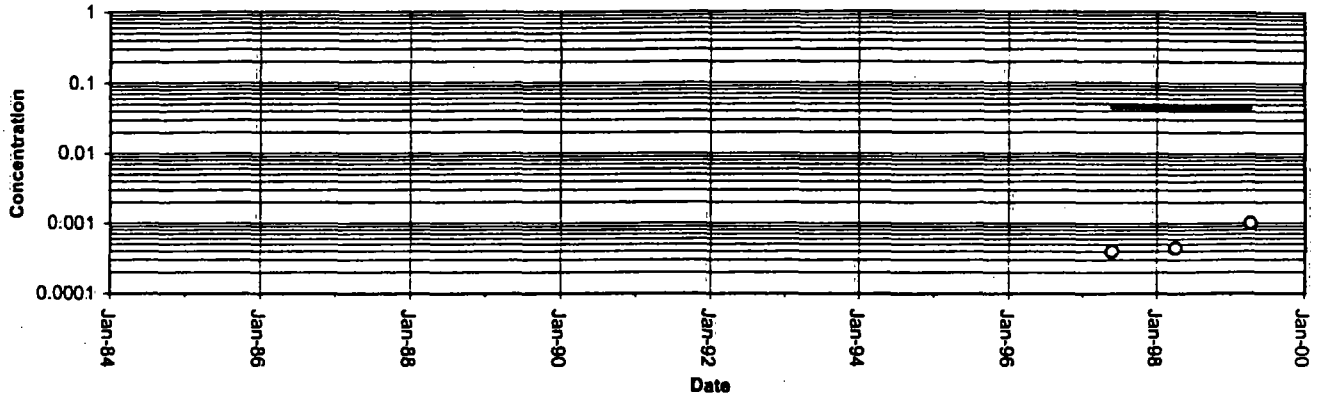
MW106



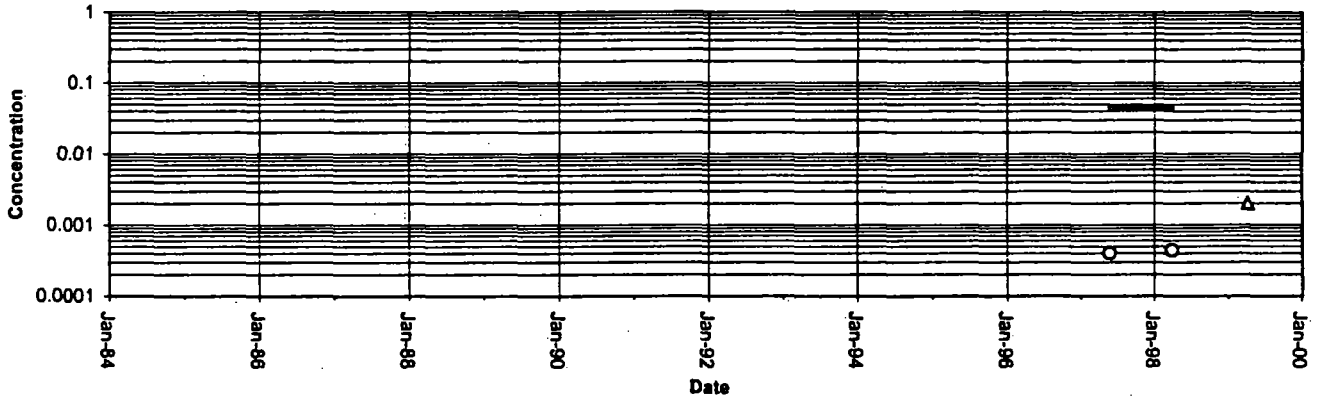
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

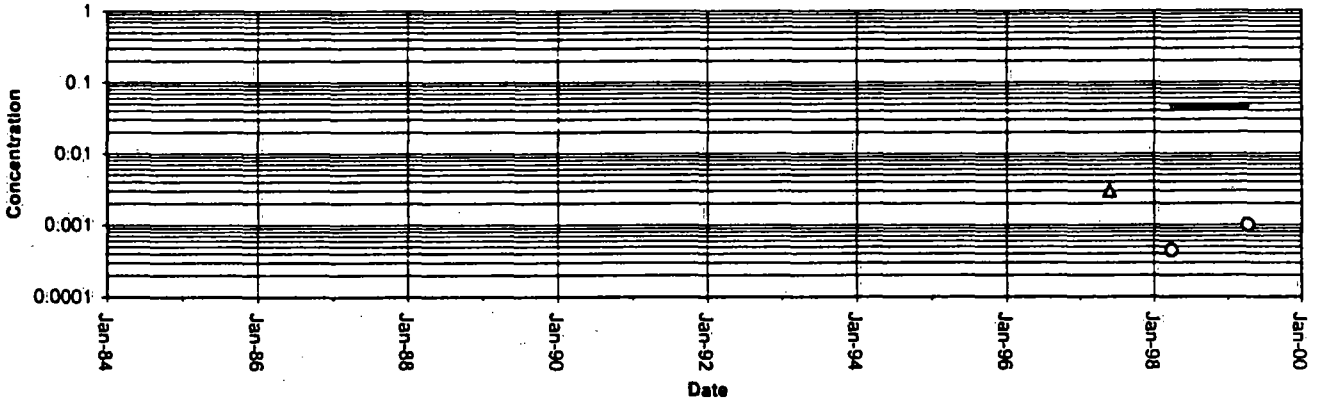
P1



P3R



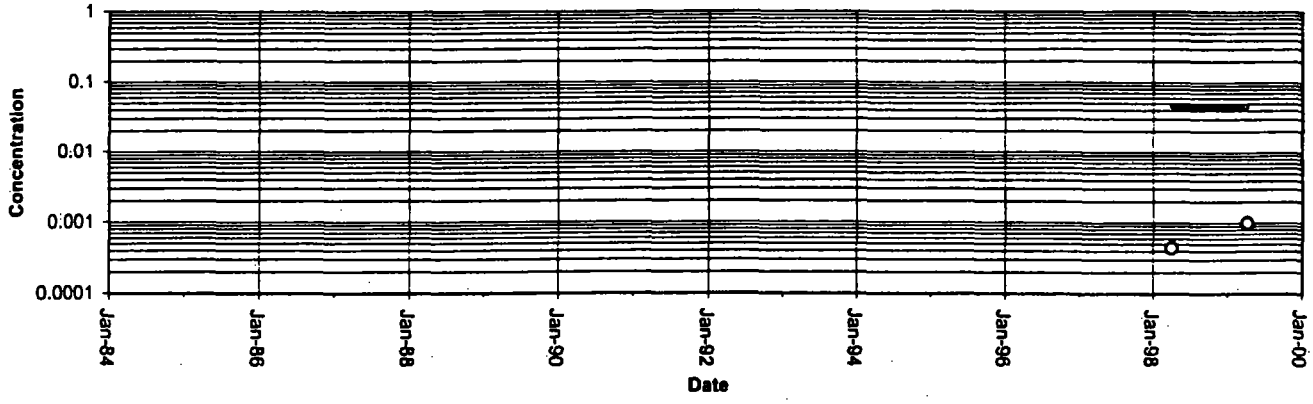
P4R



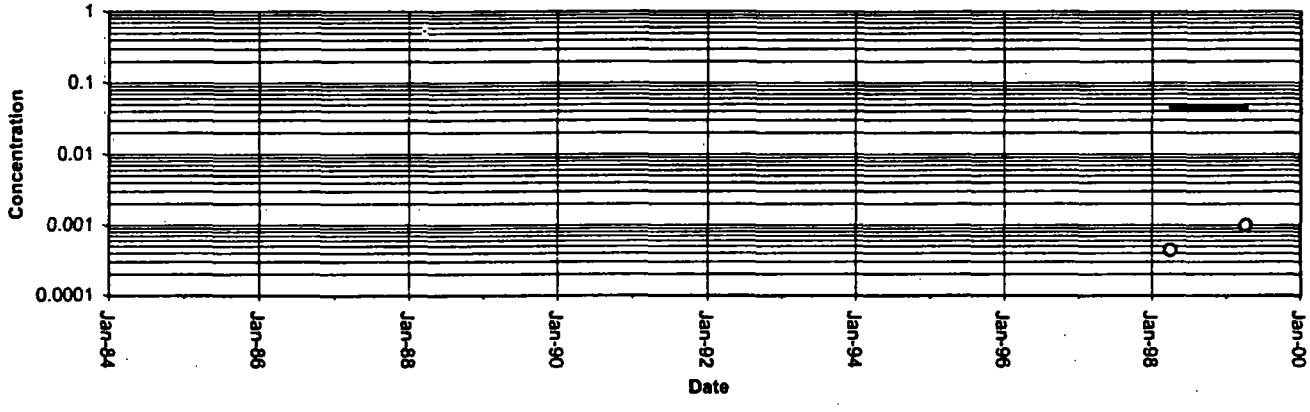
Cadmium (mg/L)

AGQS Δ Concentration O NonDetect

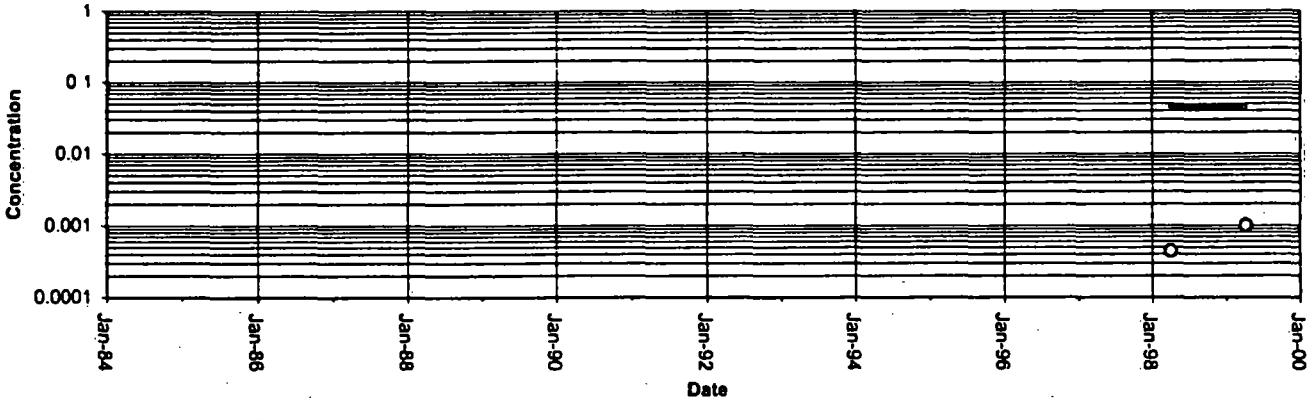
SG1



SG3



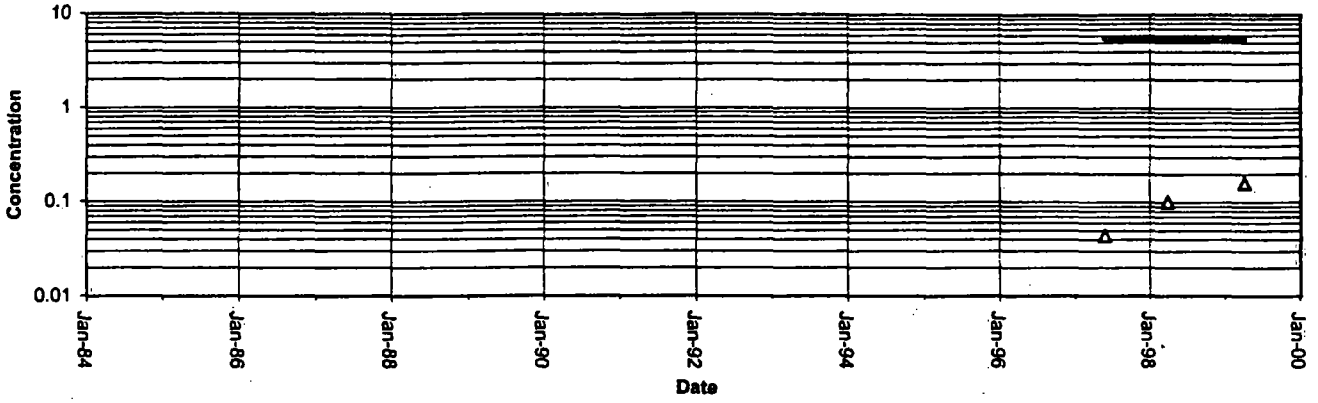
SG4



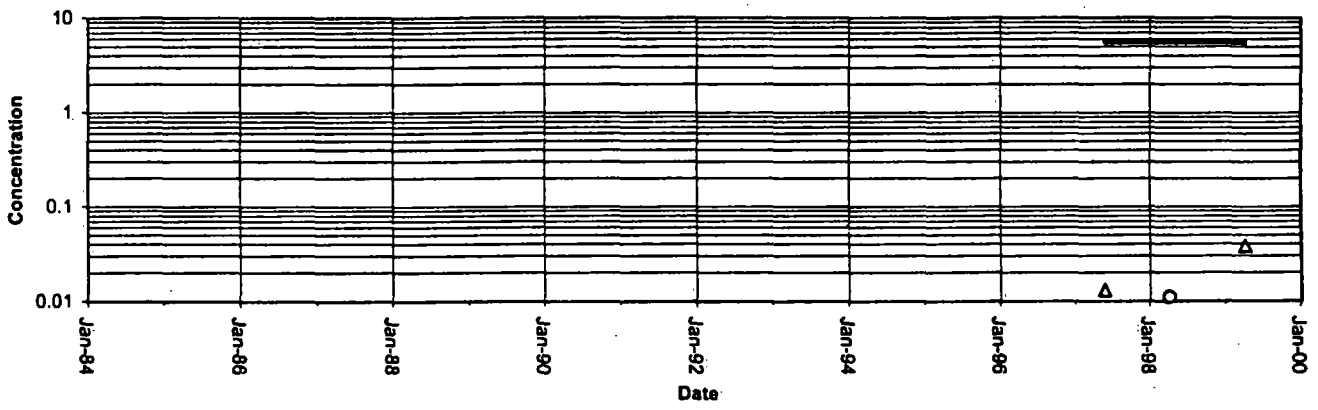
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

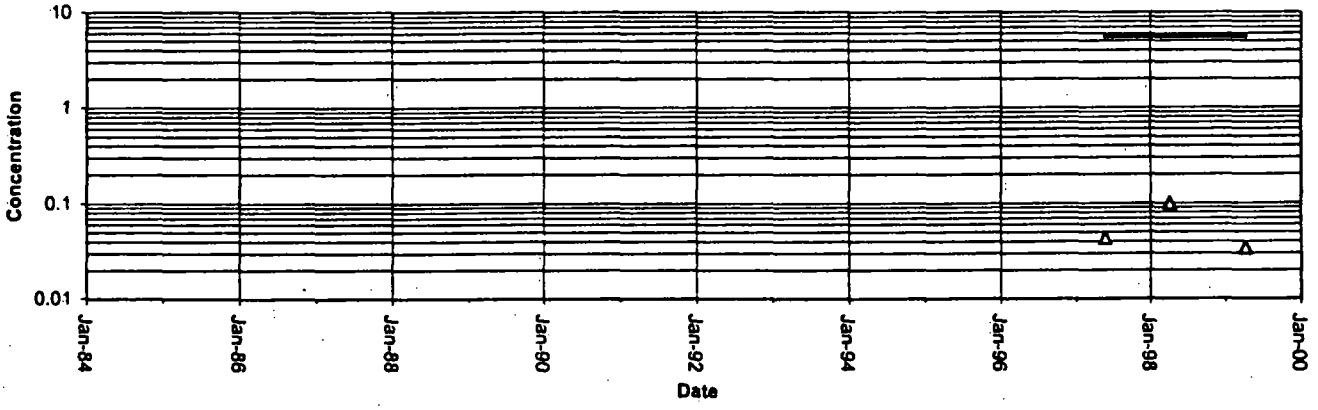
B15R



G109



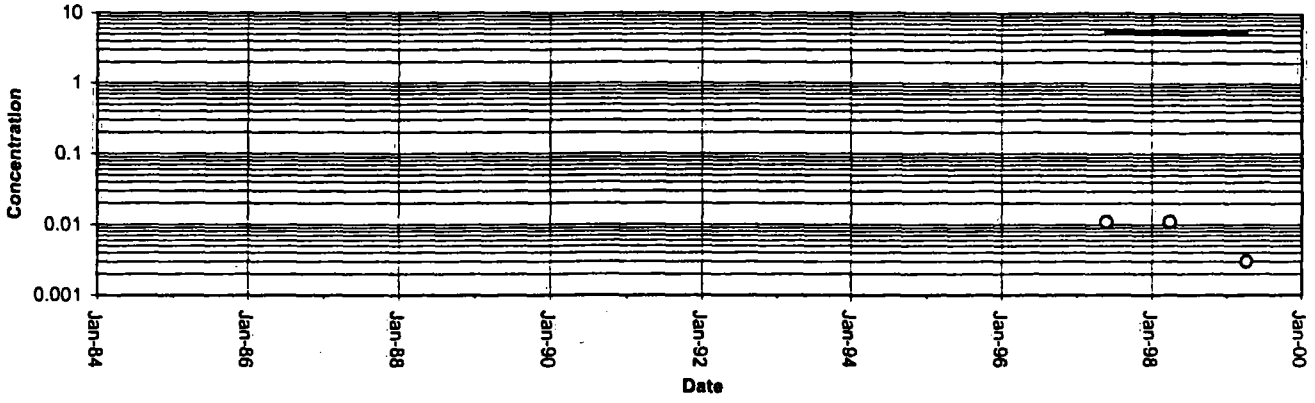
G109A



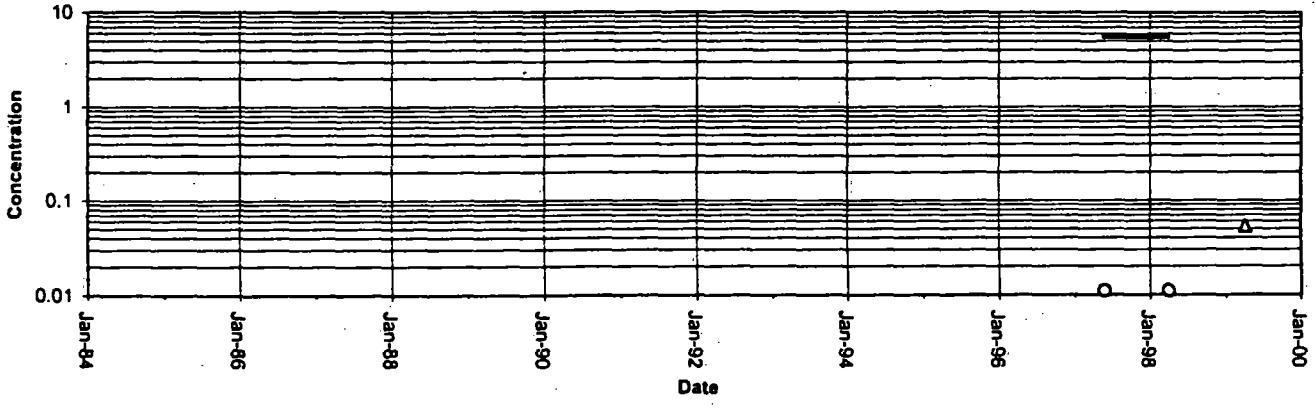
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

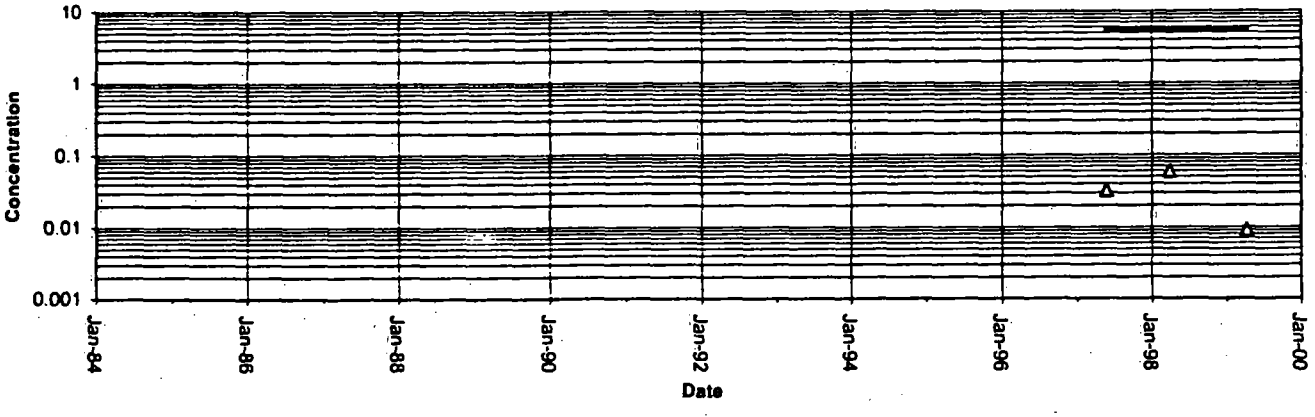
G113



G113A



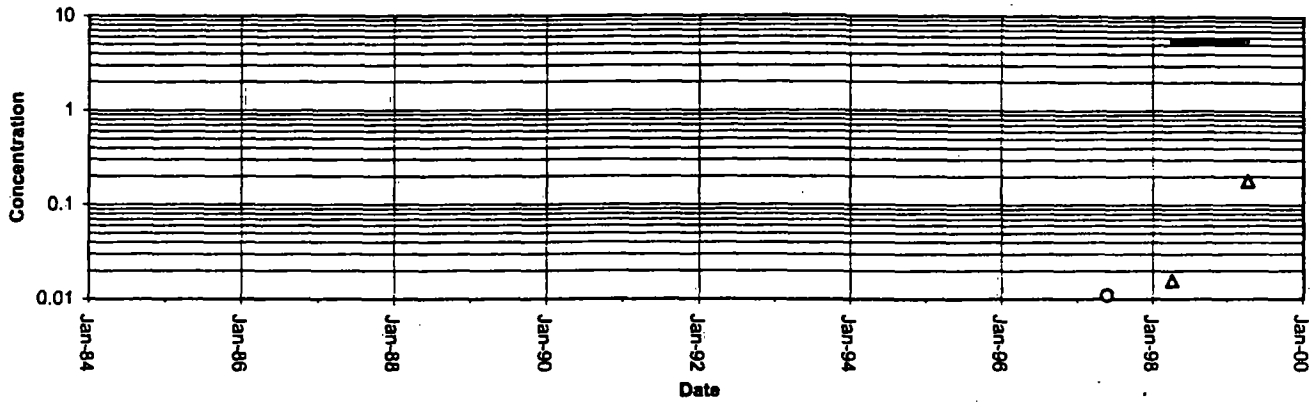
G114



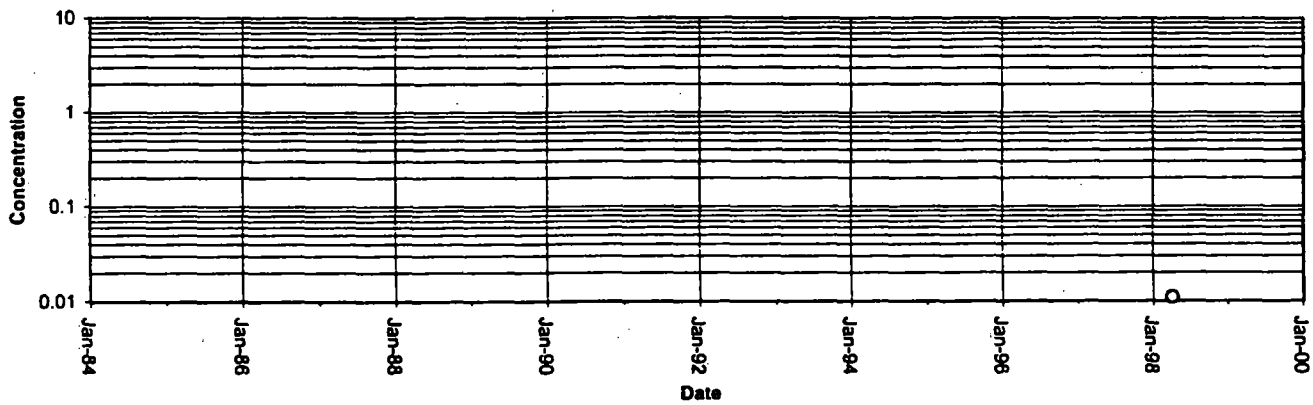
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

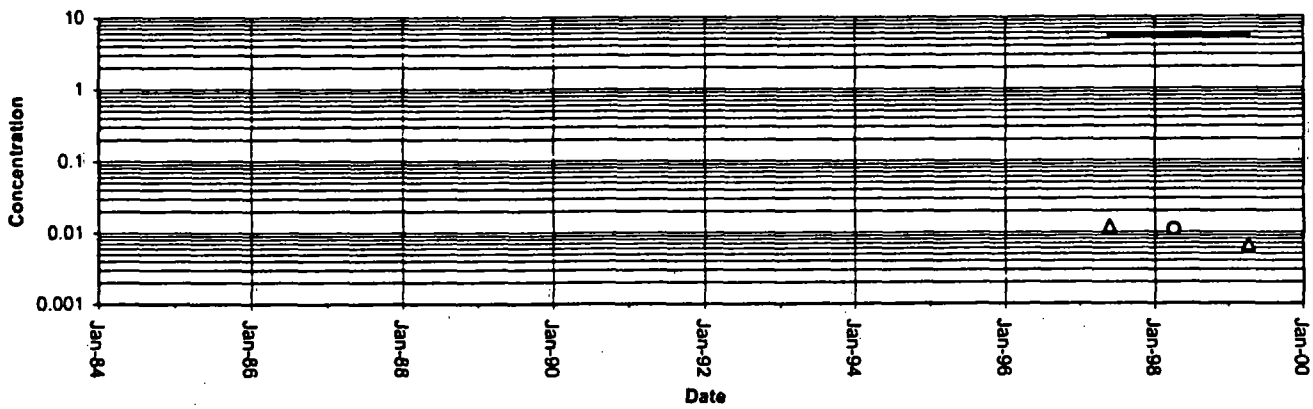
G115



G116



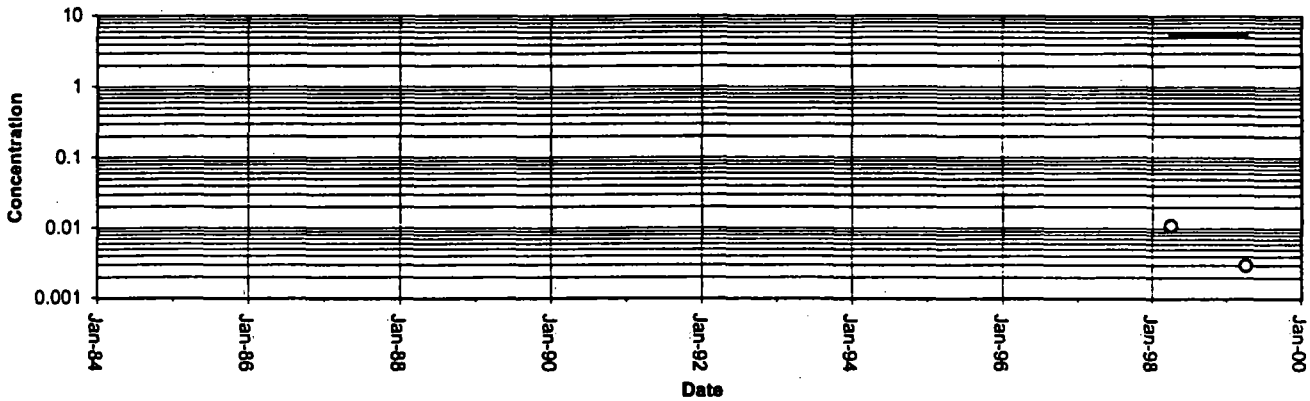
G116A



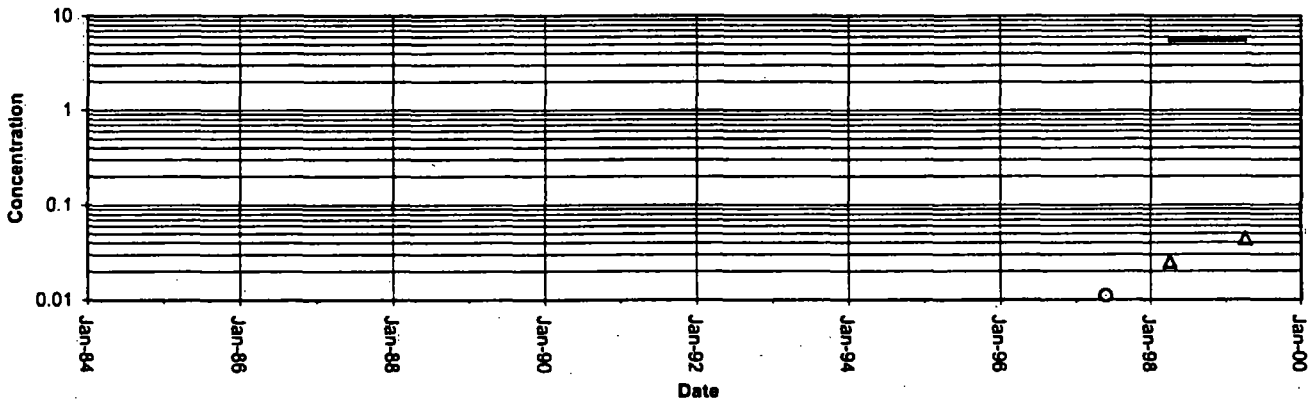
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

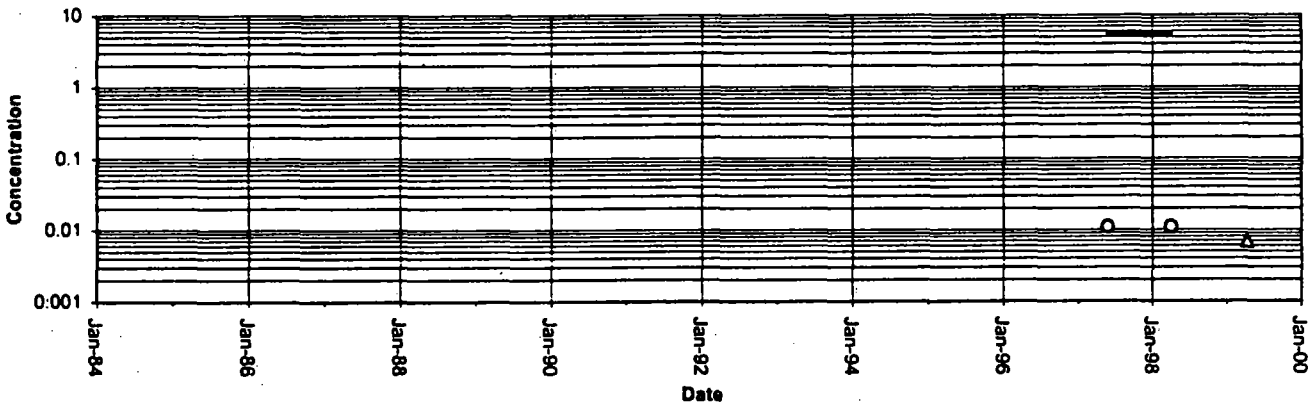
G116D



G117



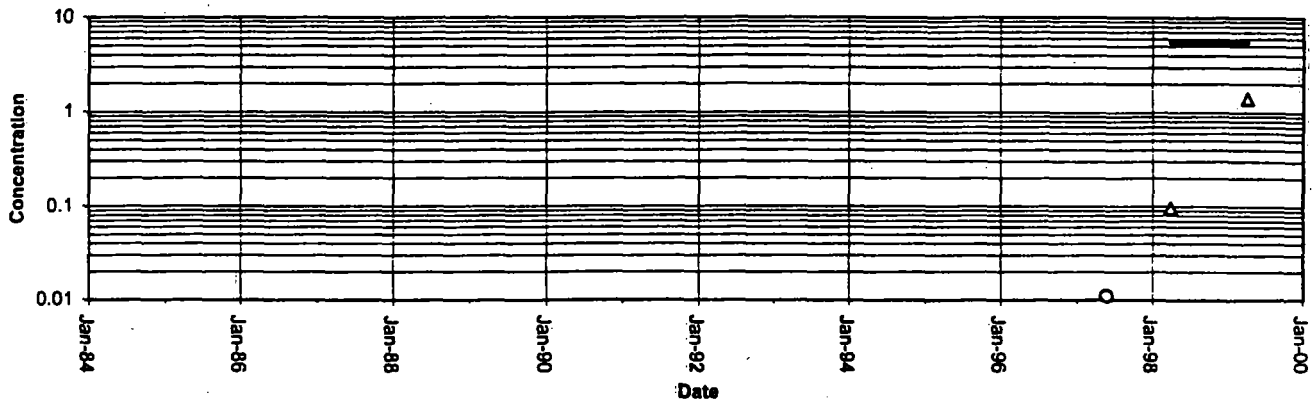
G118A



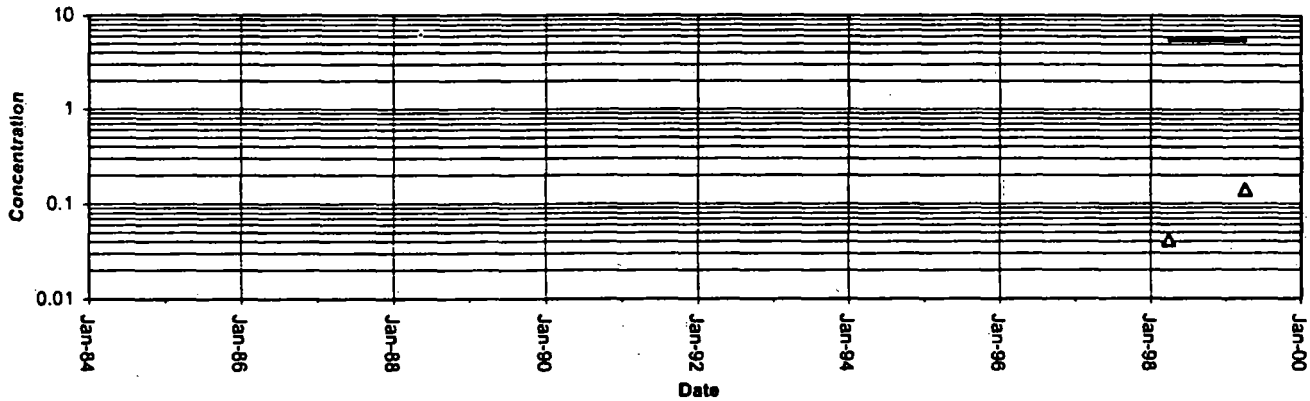
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

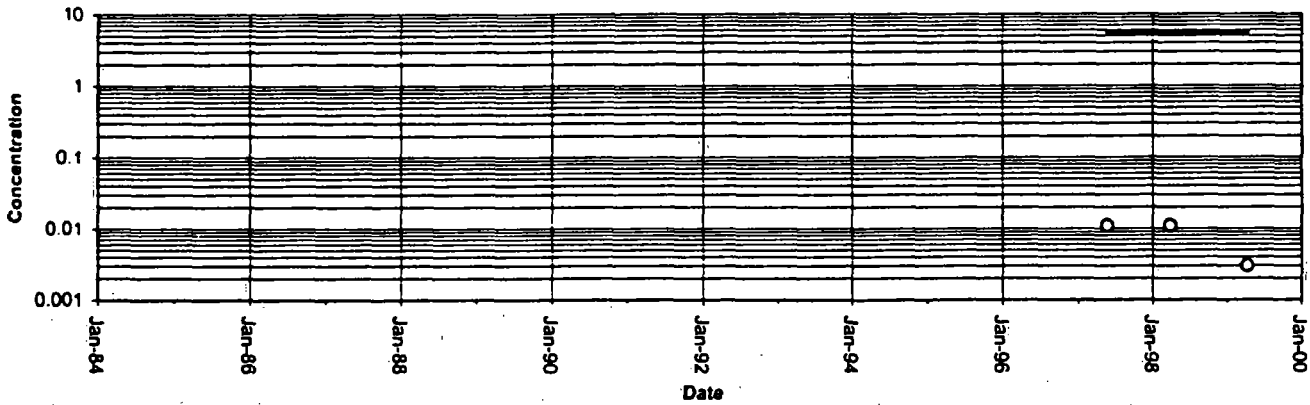
G118R



G119



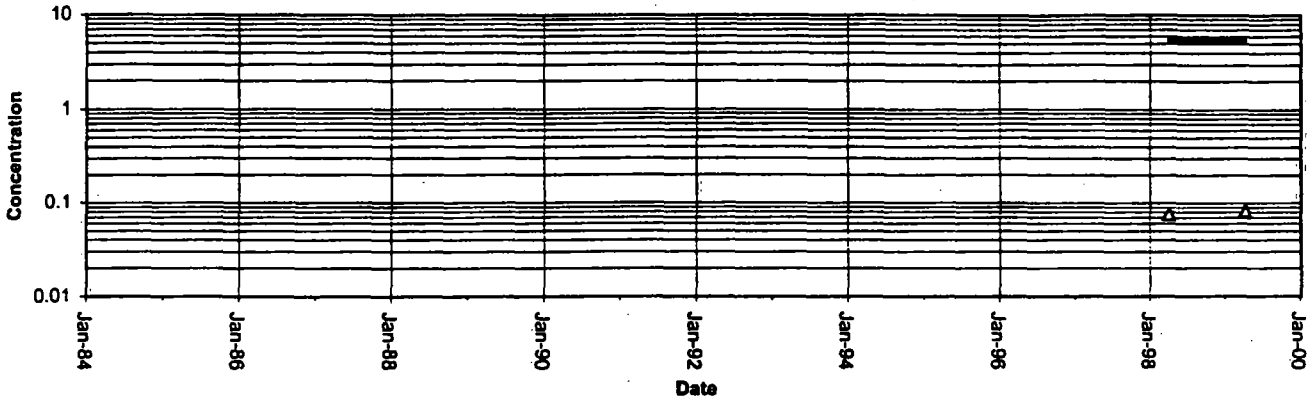
G120B



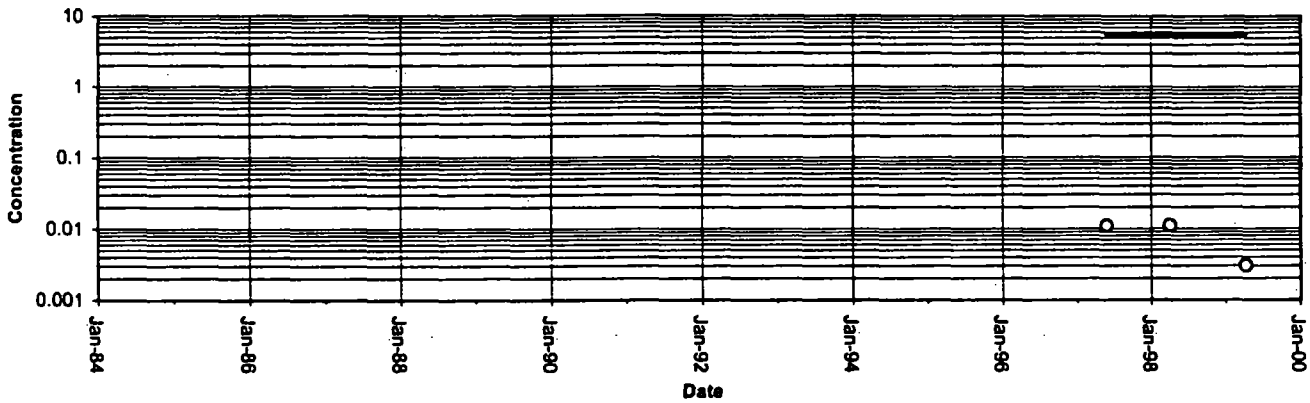
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

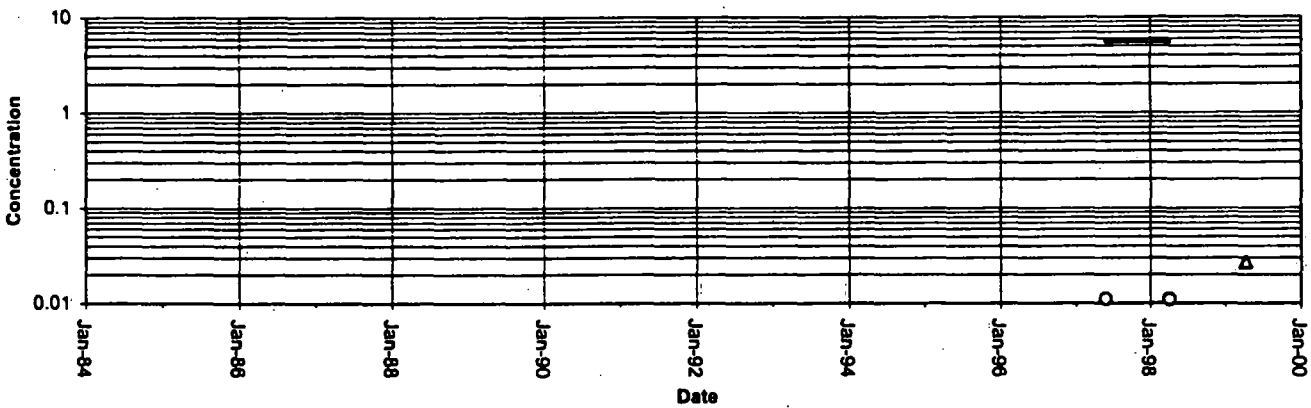
G130



G132



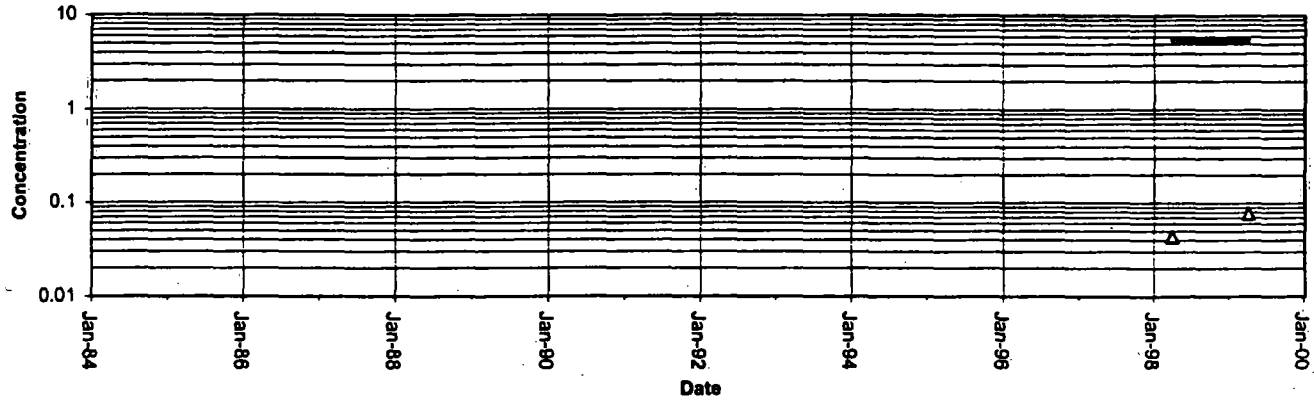
G33D



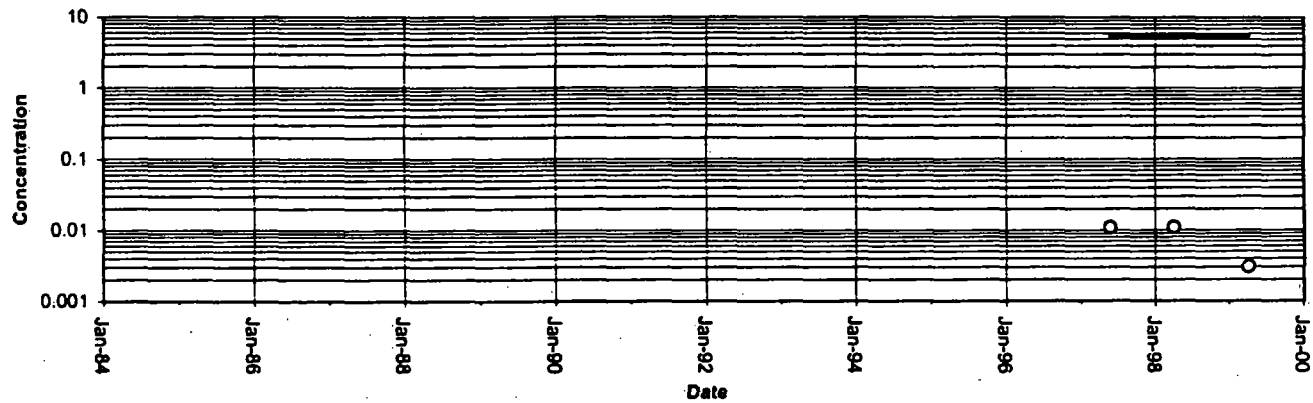
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

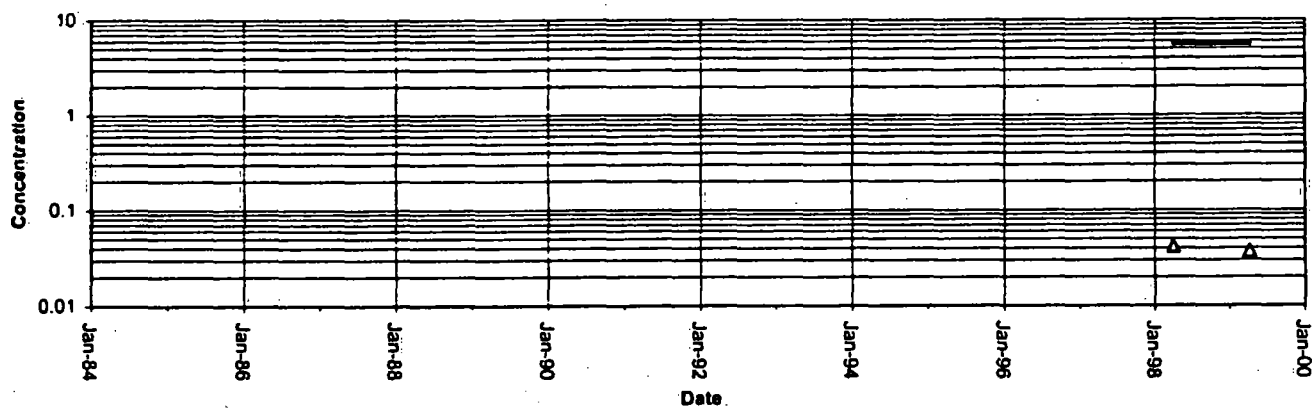
G33S



G34D



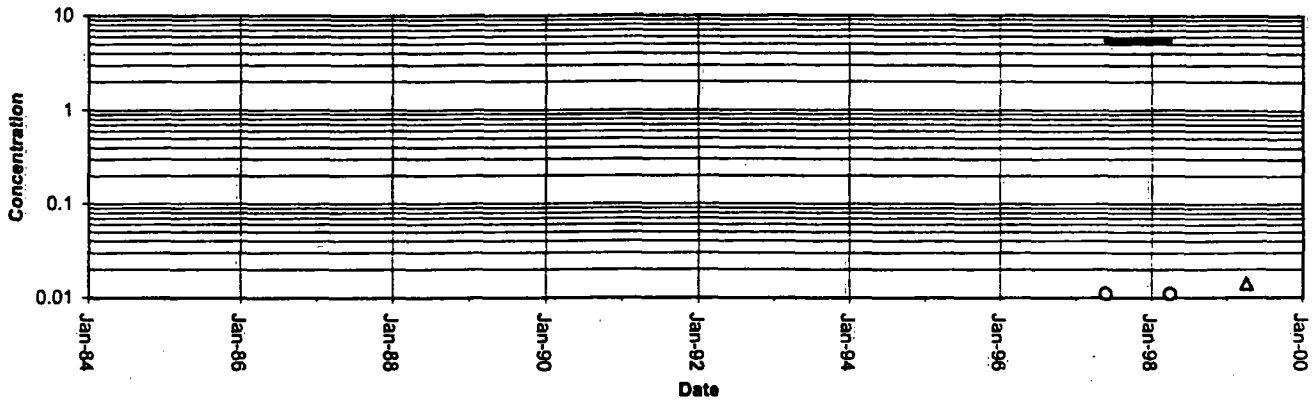
G34S



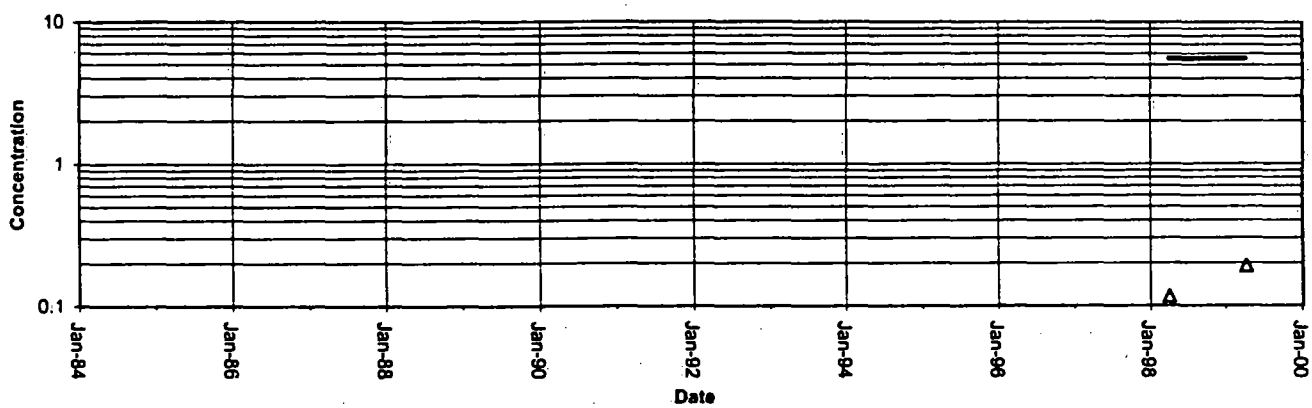
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

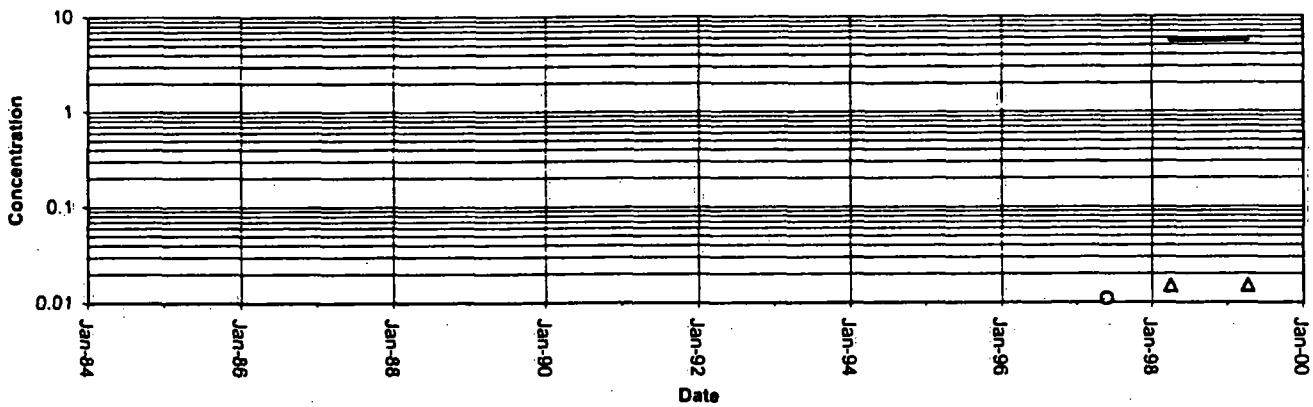
G35D



G35S



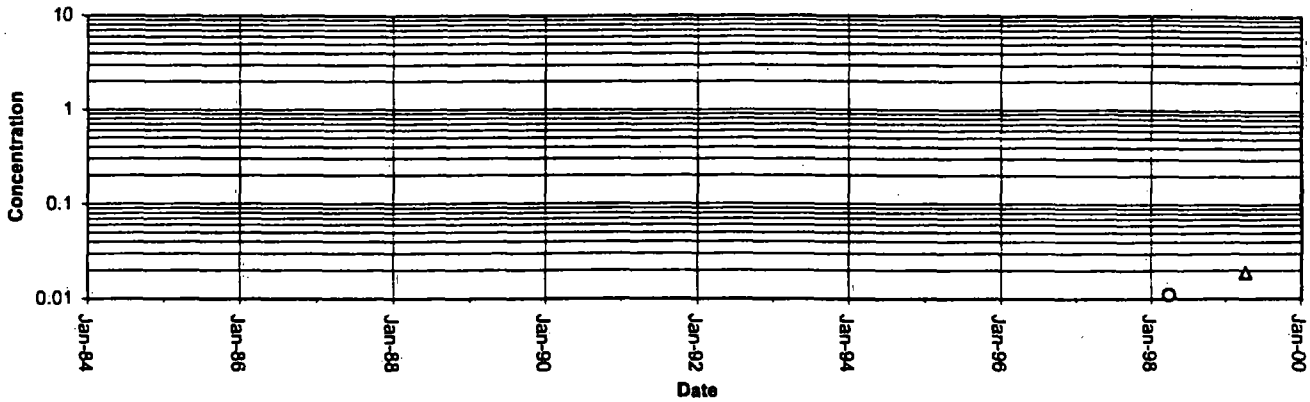
G36



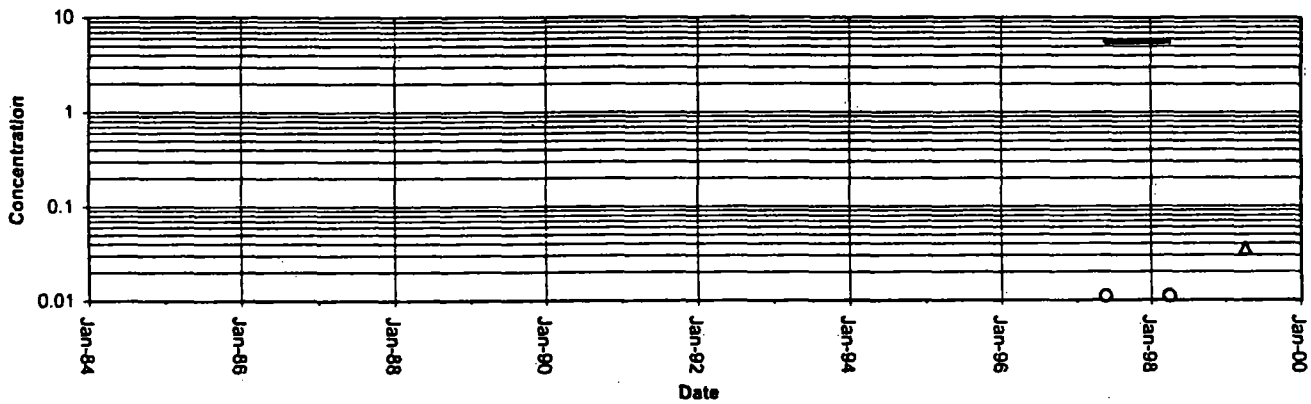
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

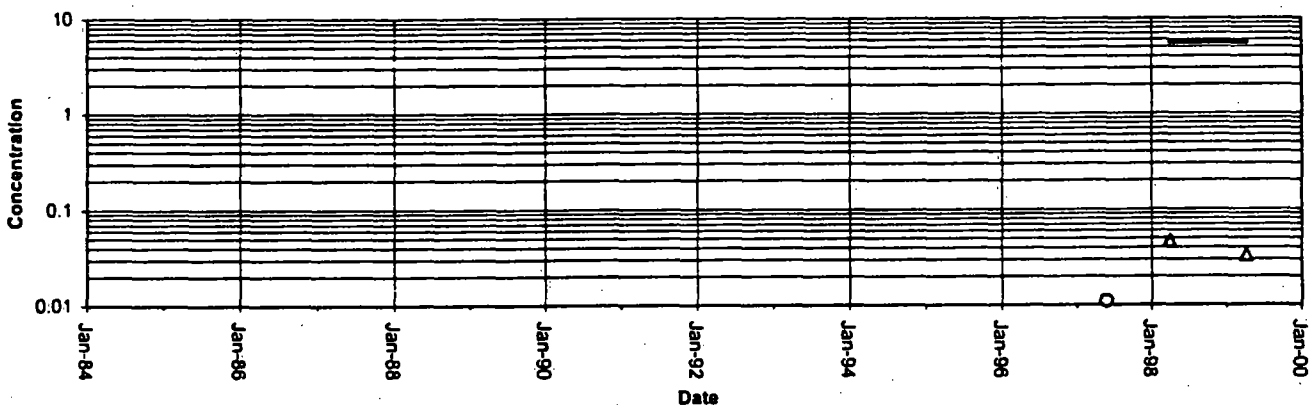
G37D



G37S



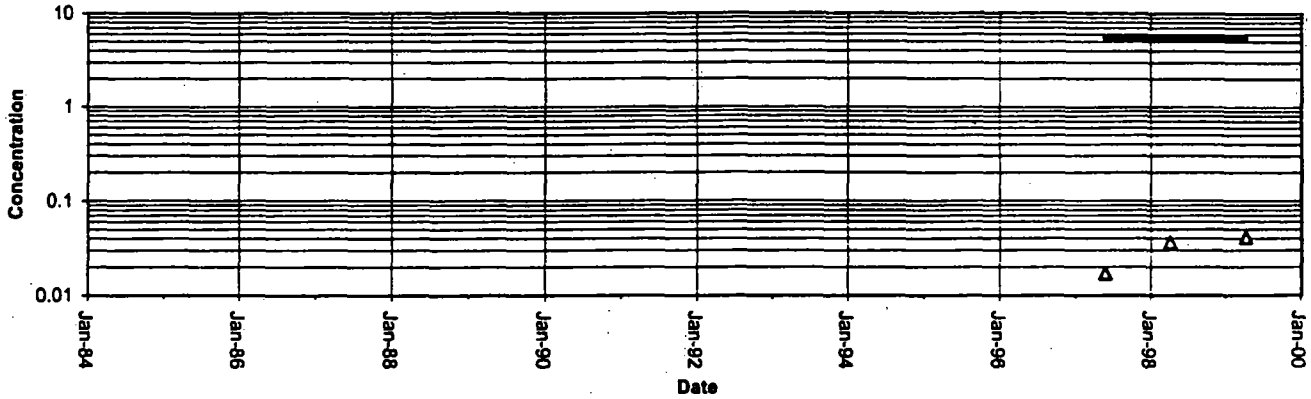
G38



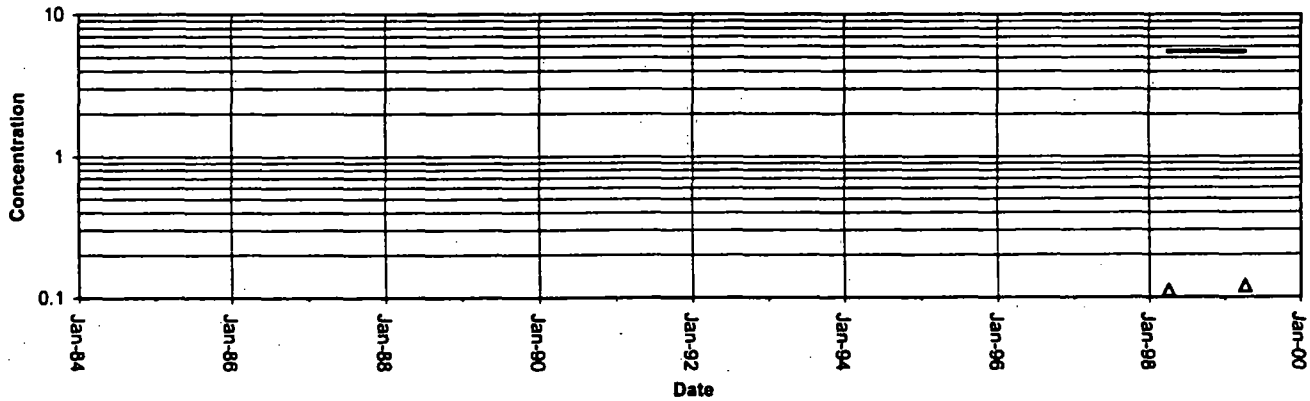
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

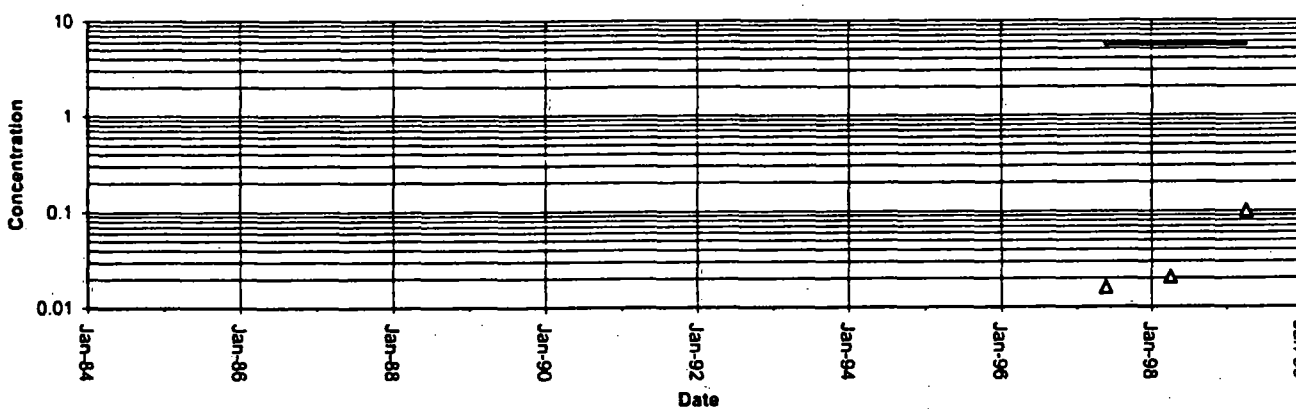
G39



G40



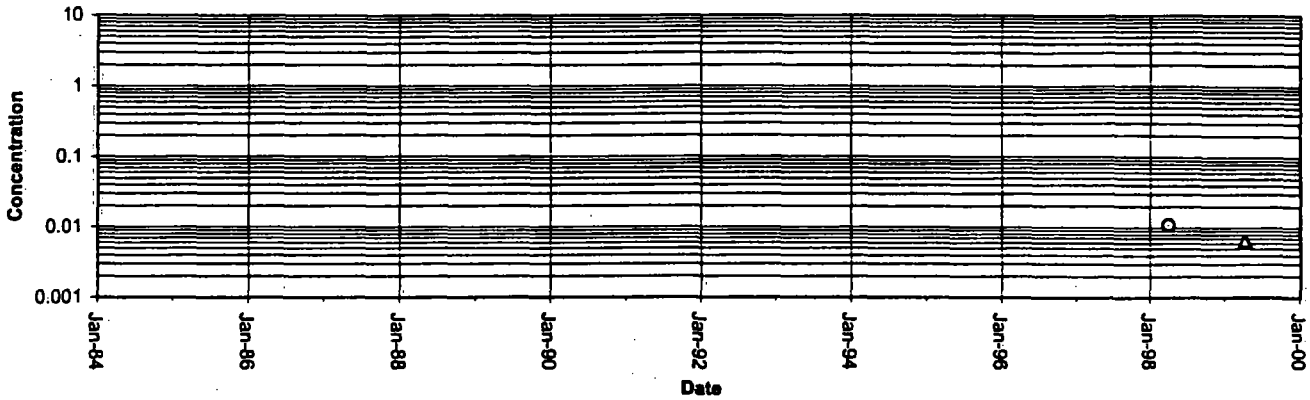
MW106



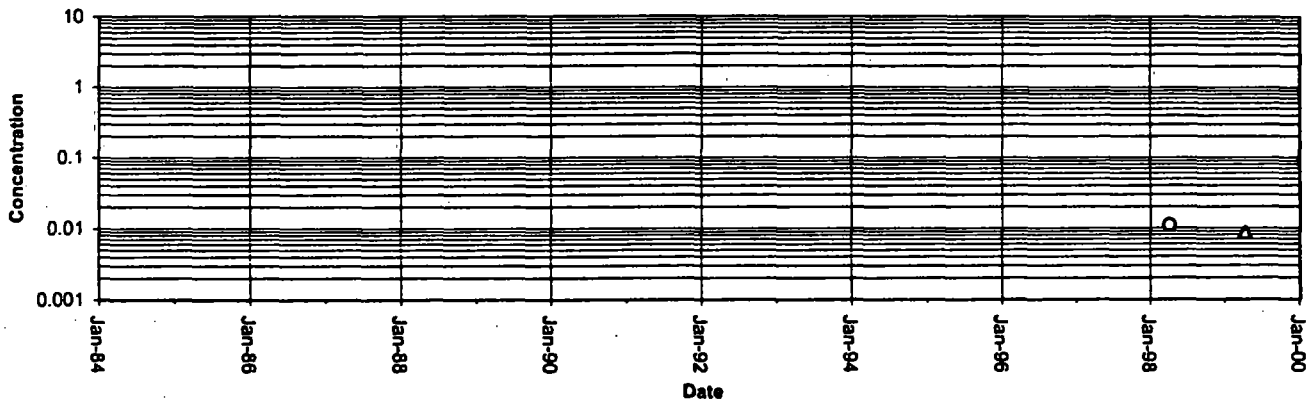
Chromium (mg/L)

AGQS Δ Concentration O NonDetect

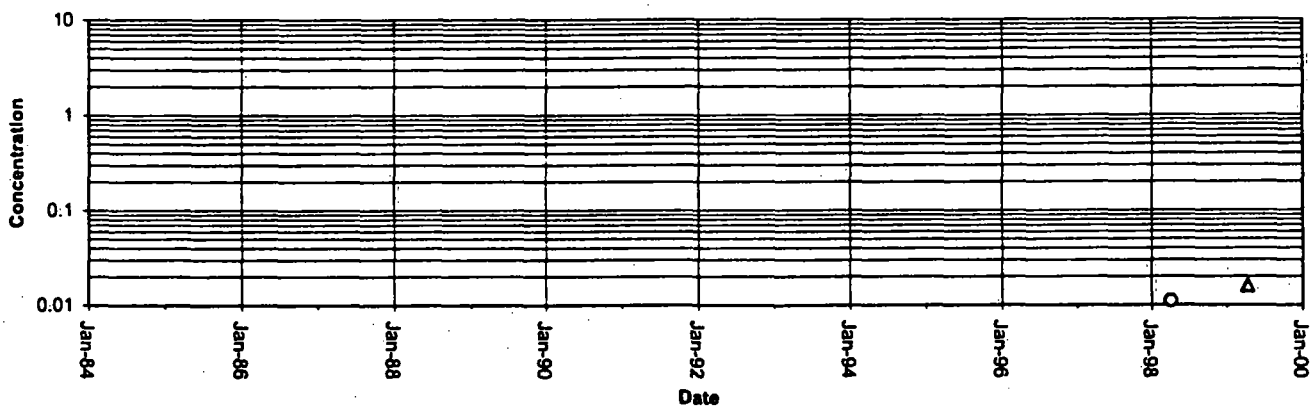
SG1



SG3



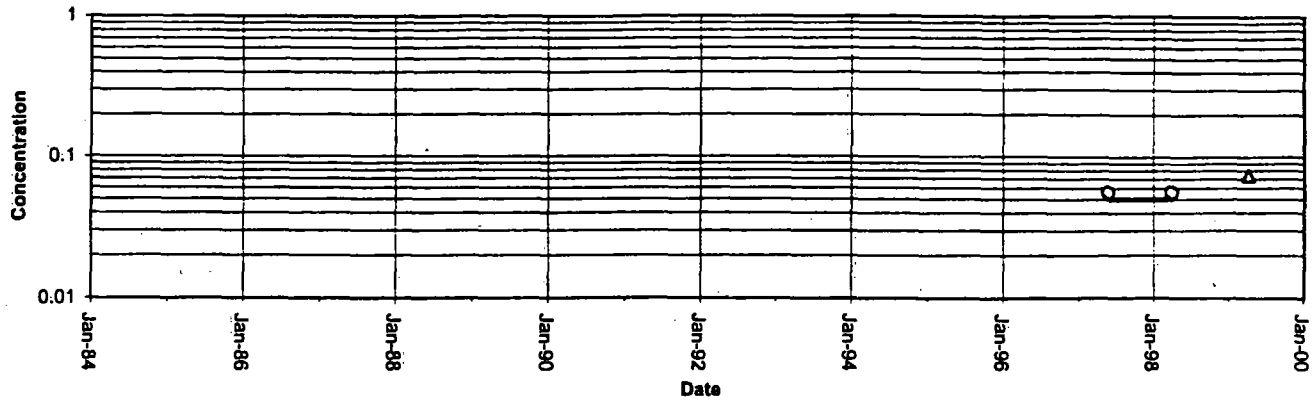
SG4



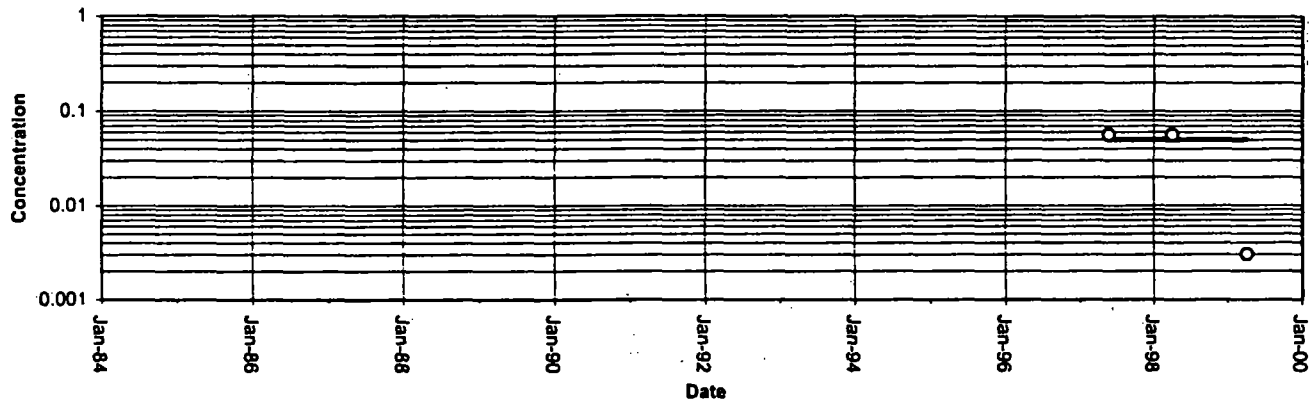
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

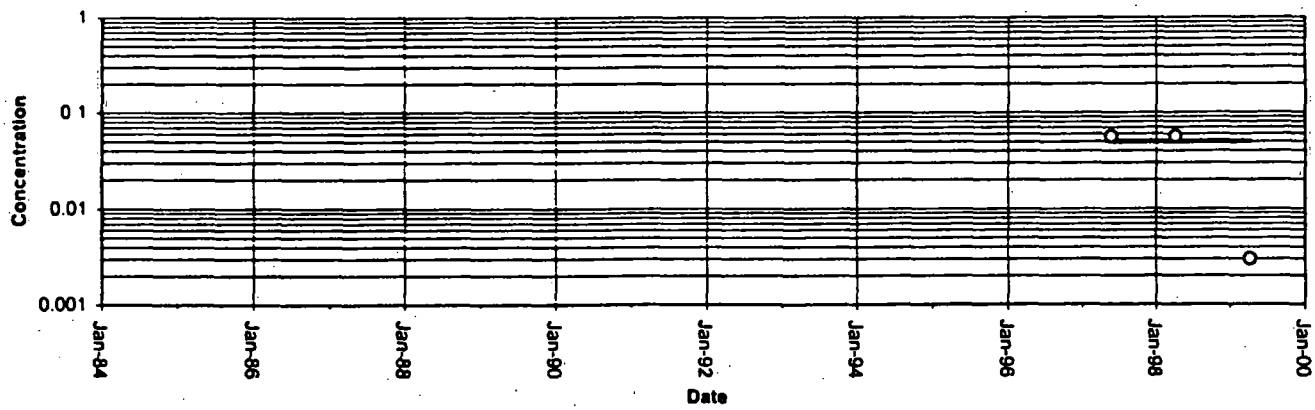
B15R



G109



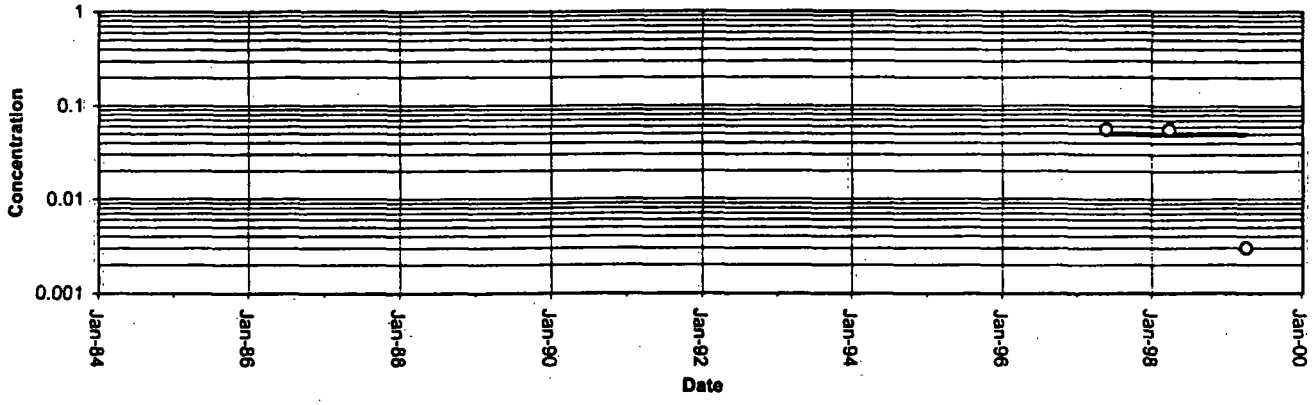
G109A



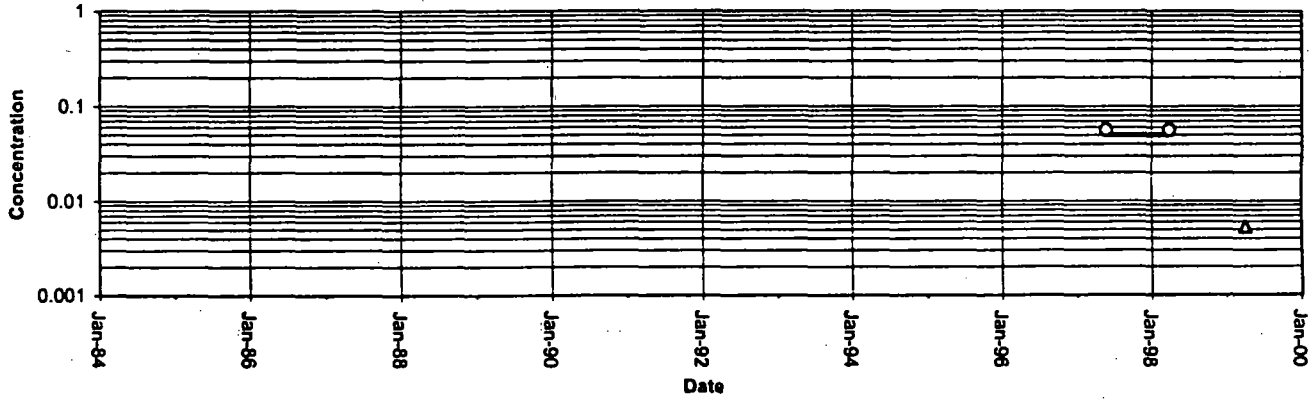
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

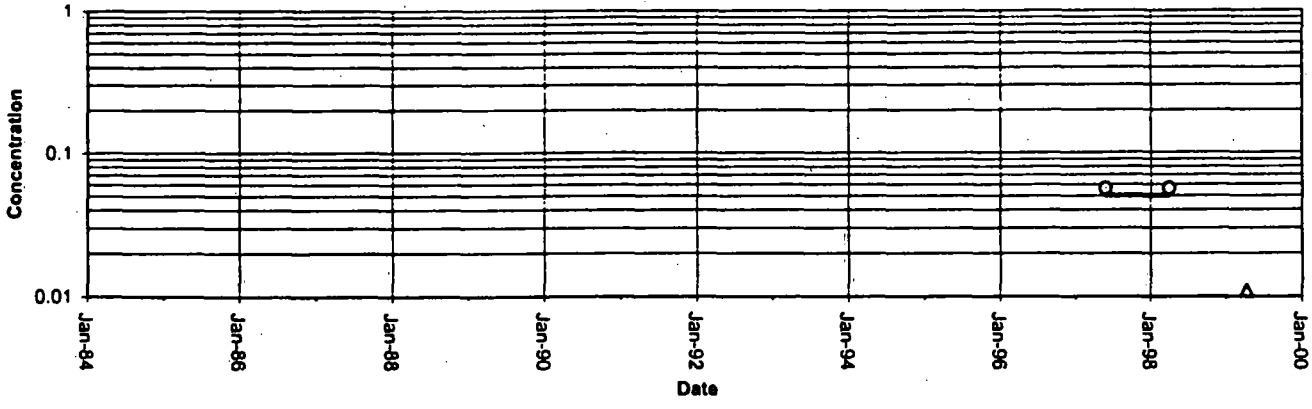
G113



G113A



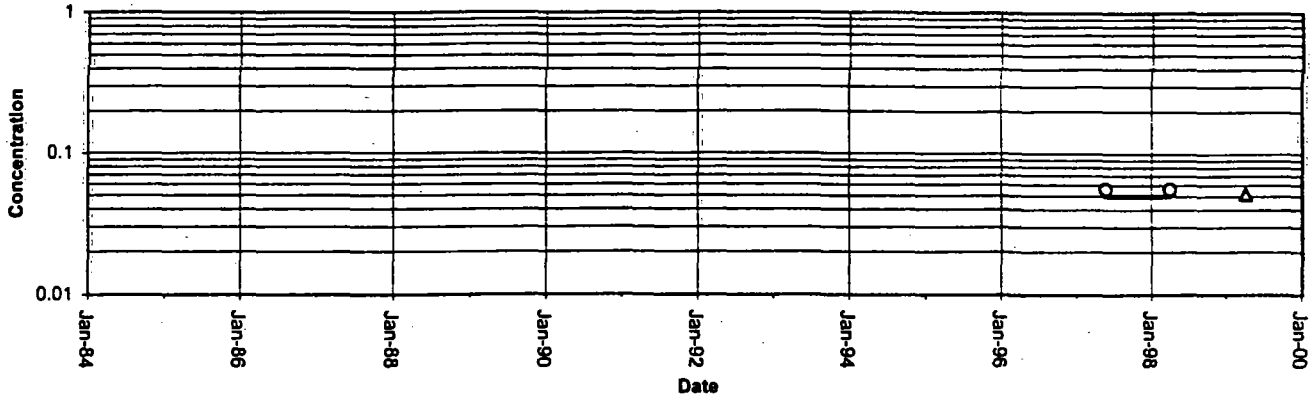
G114



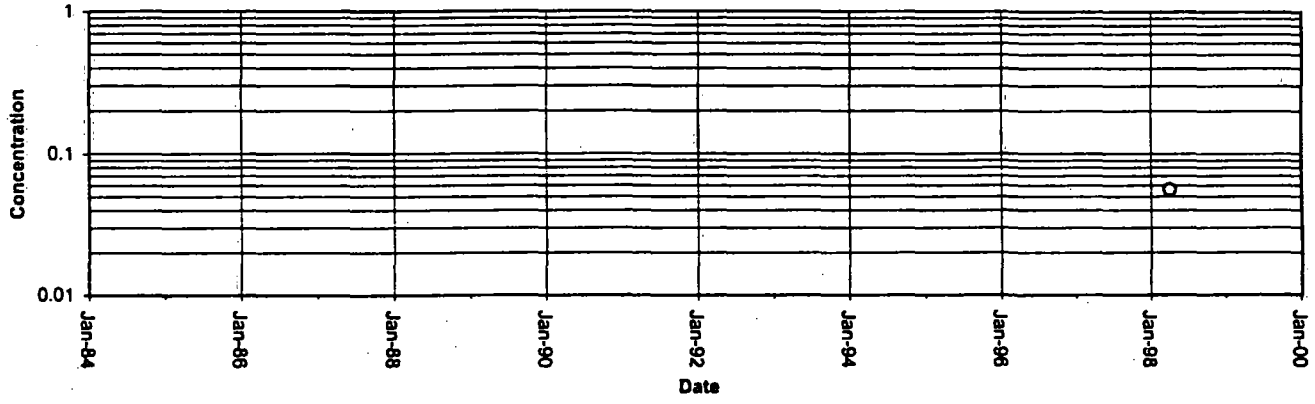
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

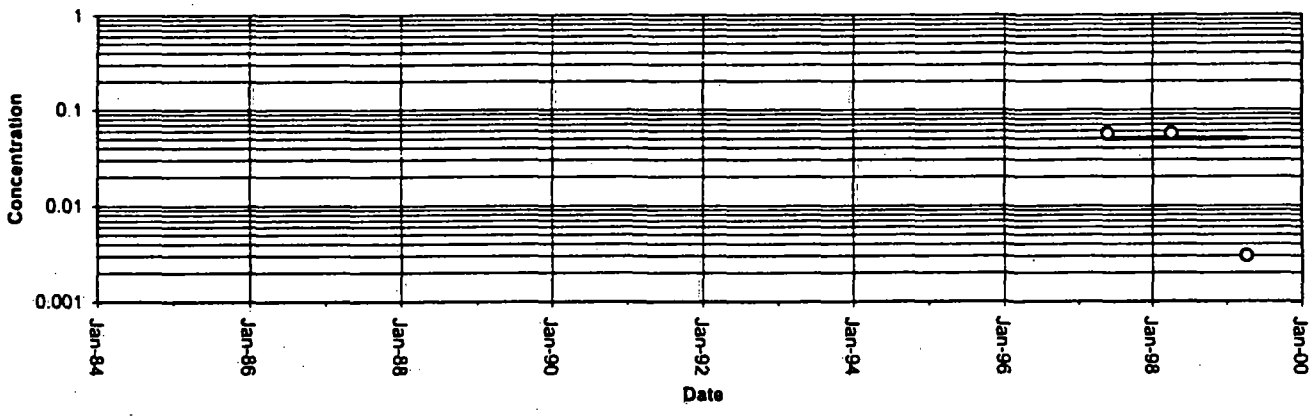
G115



G116



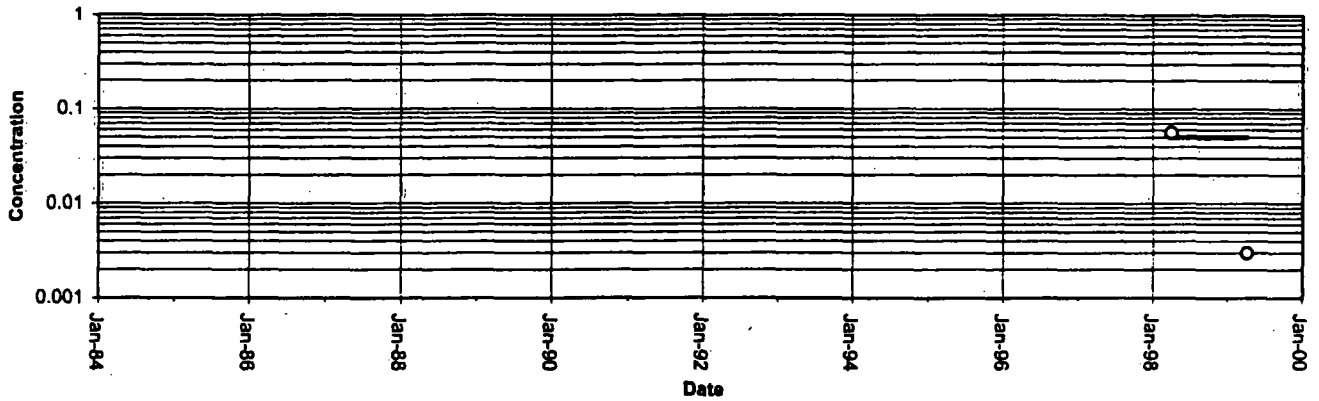
G116A



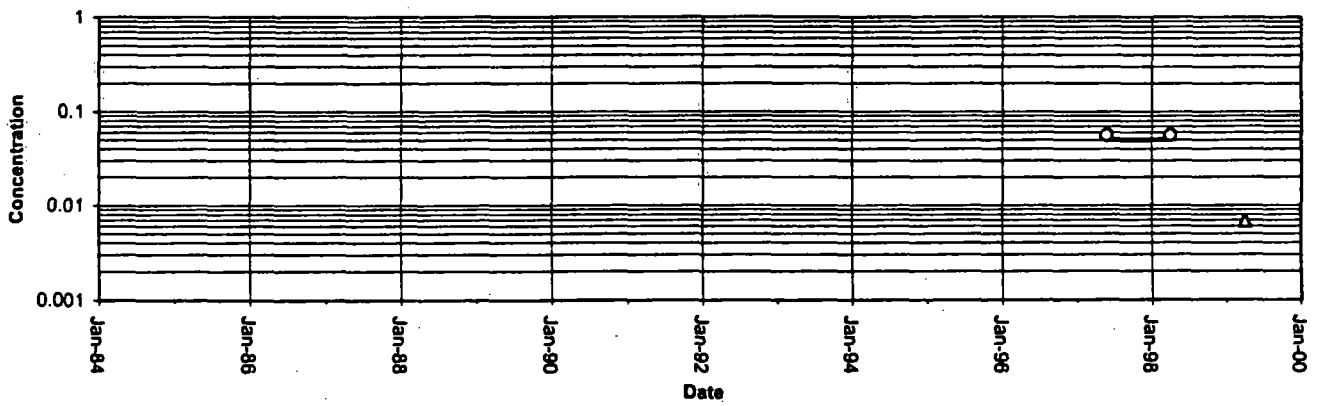
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

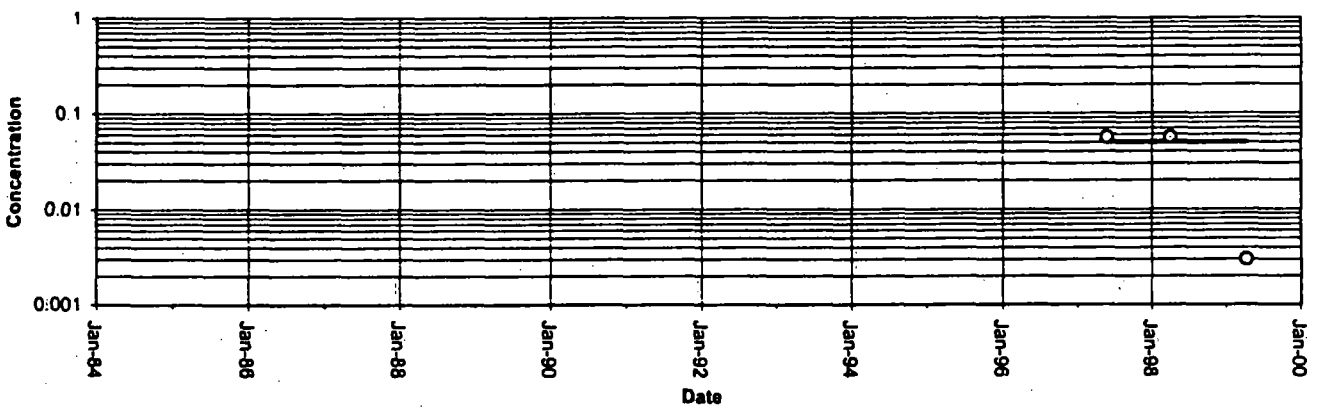
G116D



G117



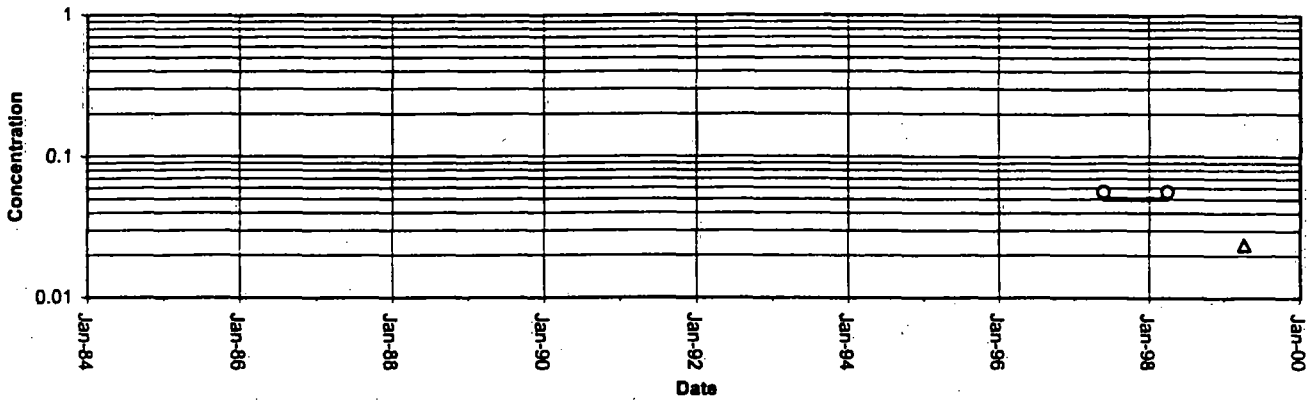
G118A



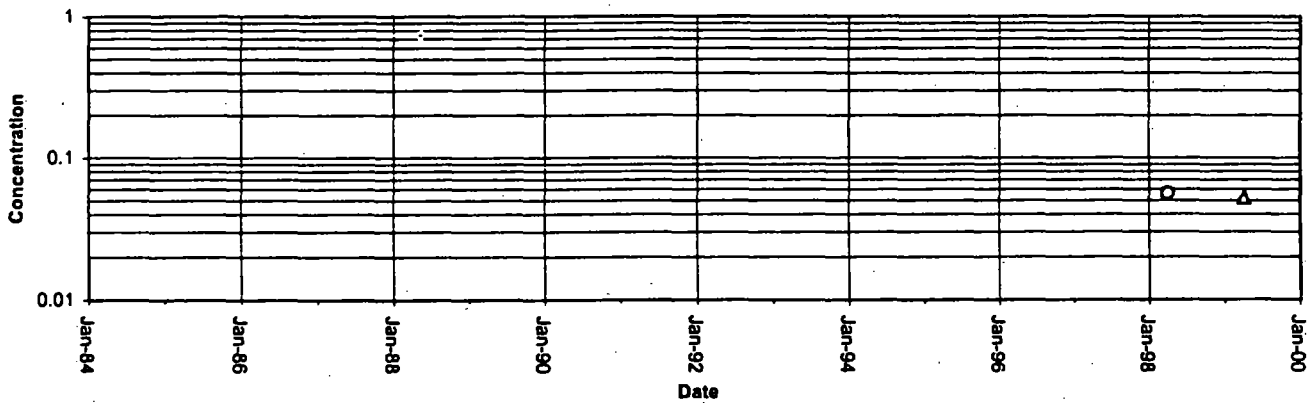
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

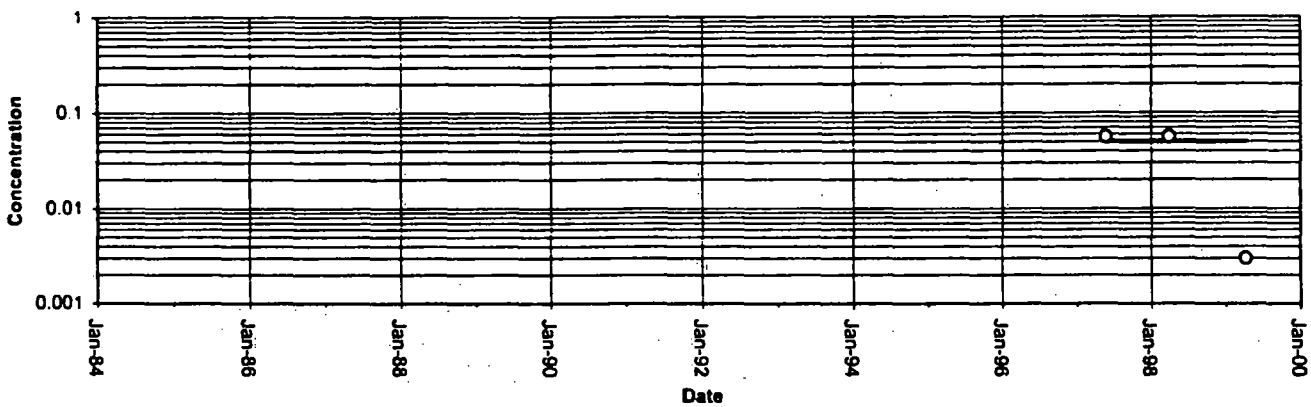
G118R



G119



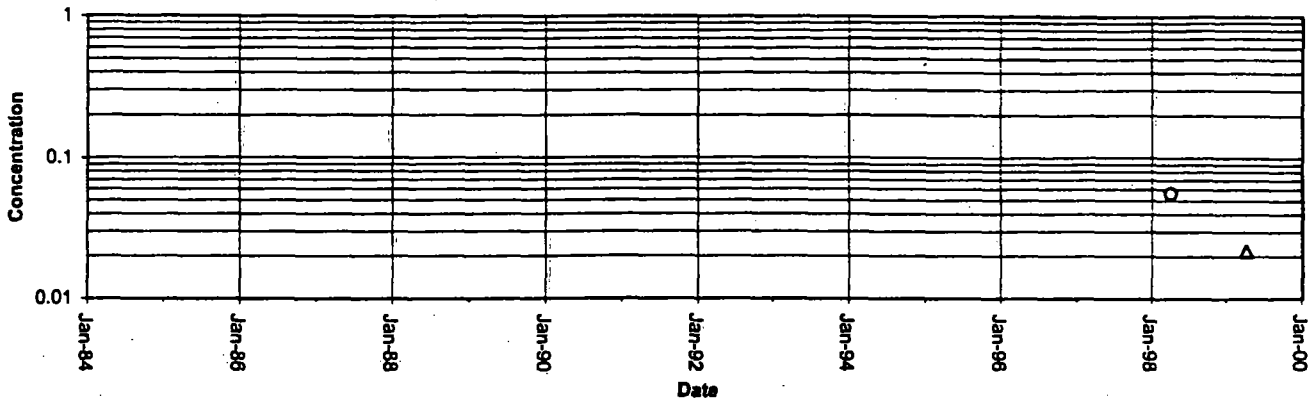
G120B



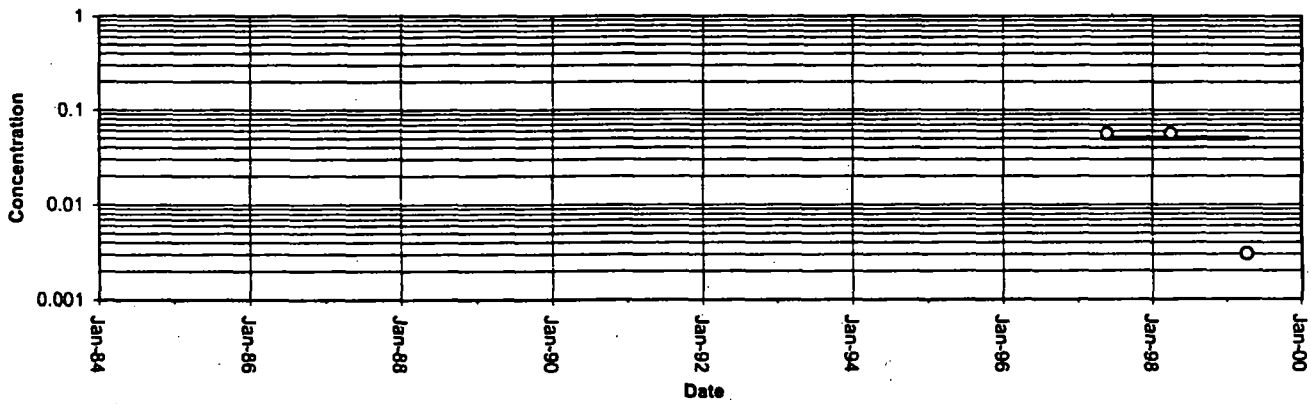
Cobalt (mg/L)

AGQS Concentration NonDetect

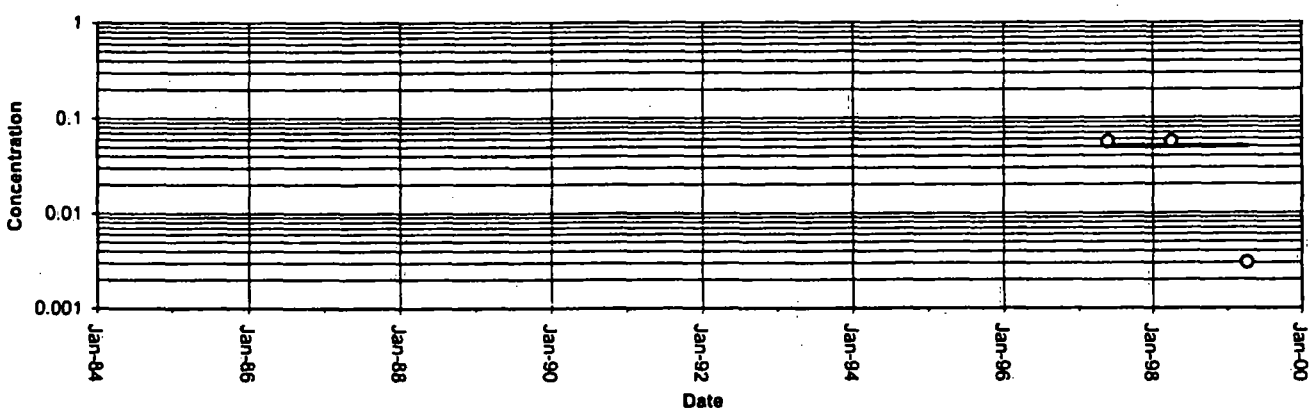
G130



G132



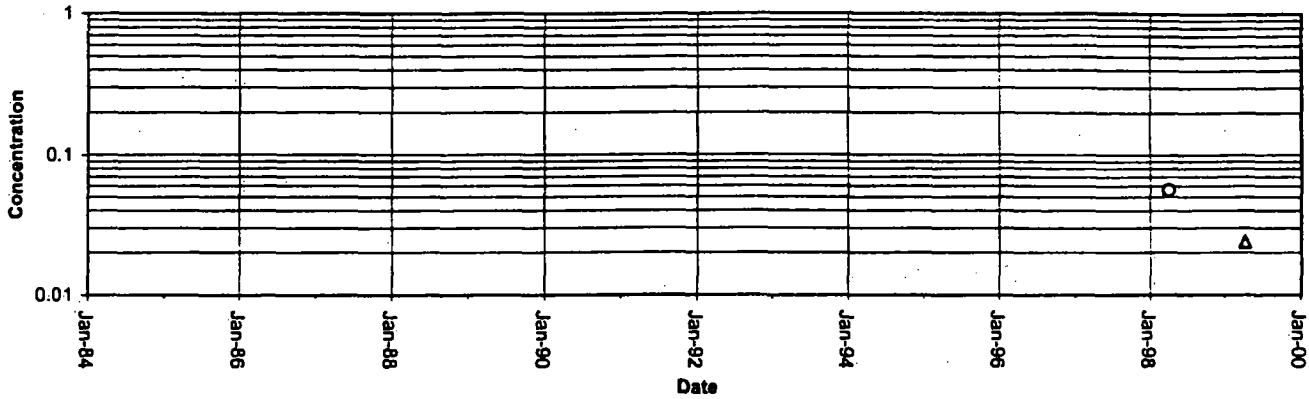
G33D



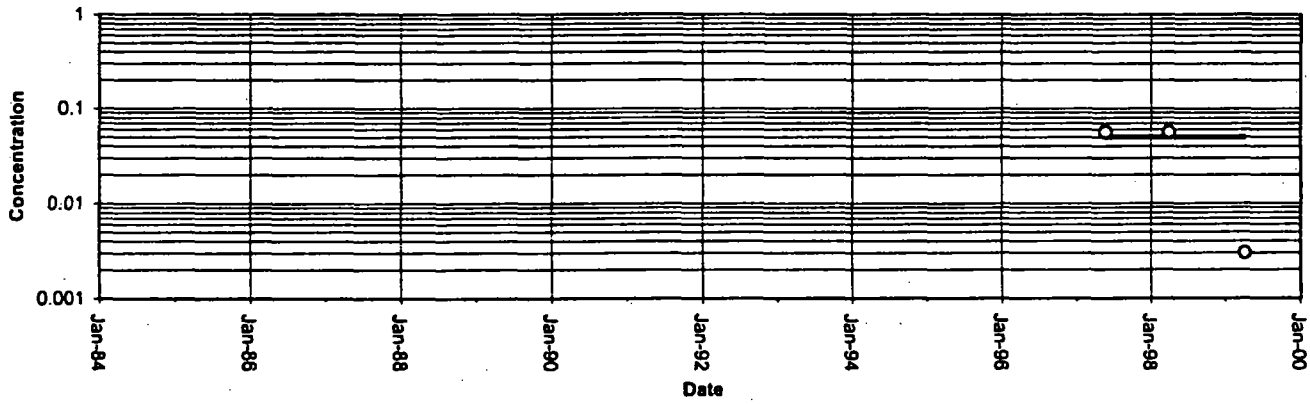
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

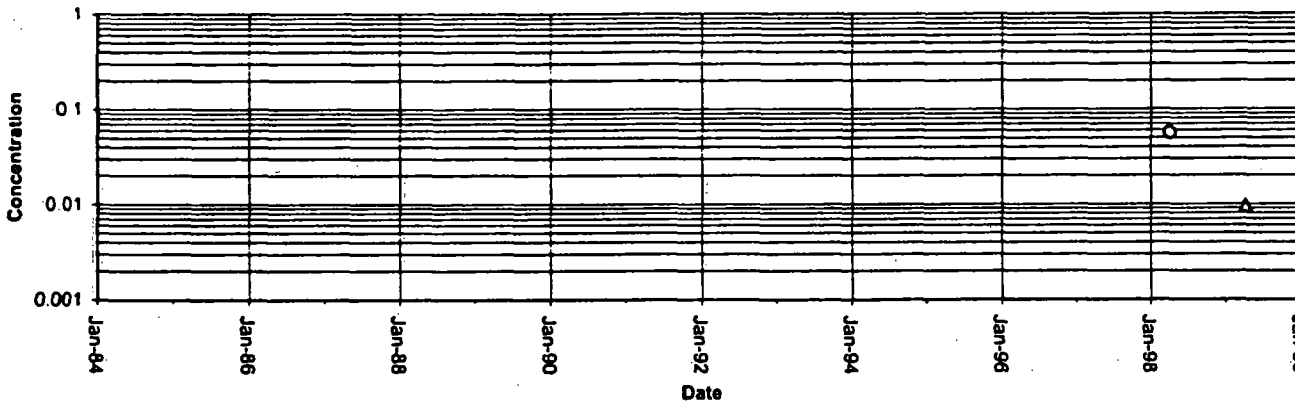
G33S



G34D



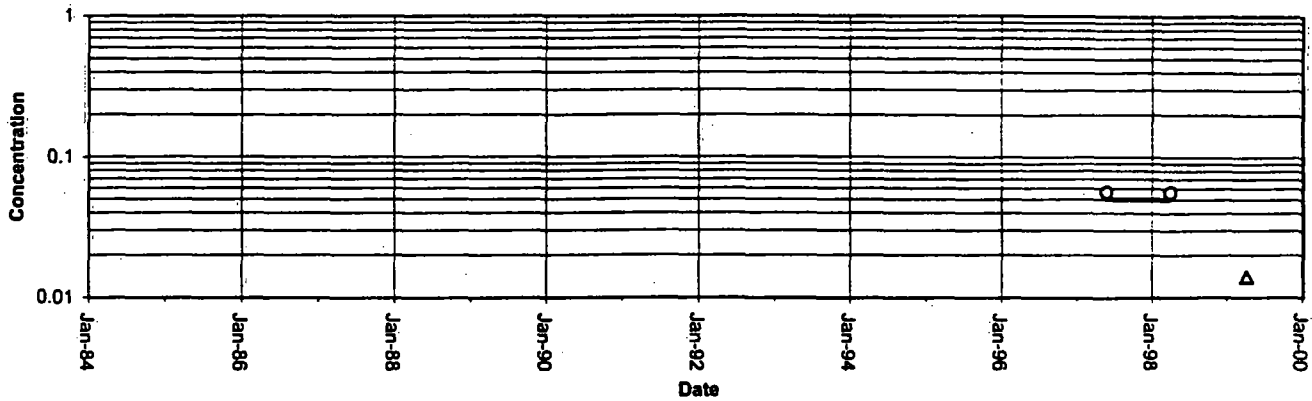
G34S



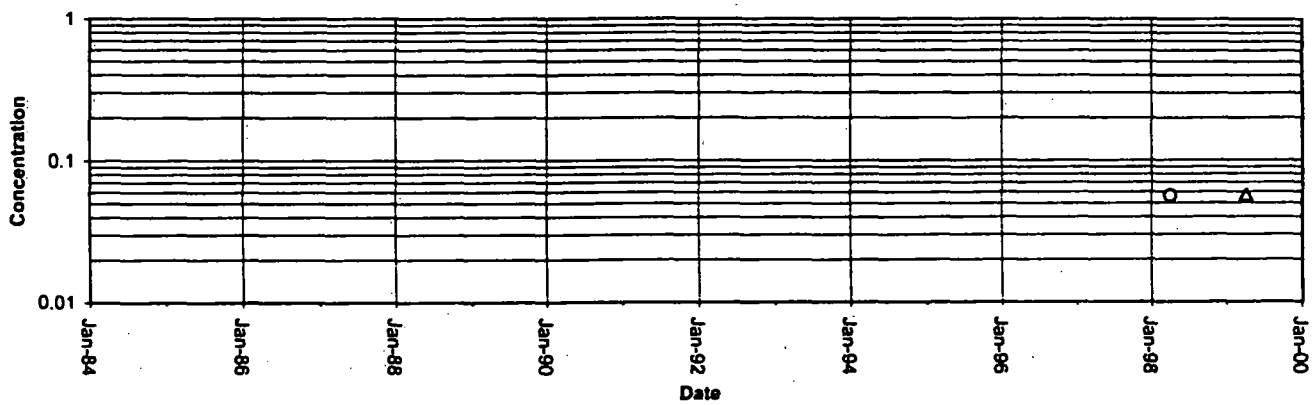
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

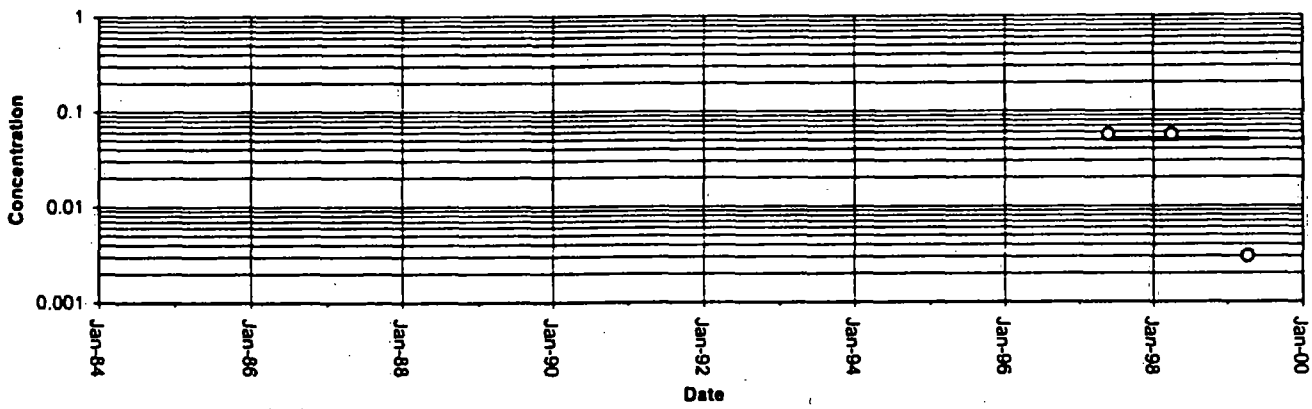
G35D



G35S



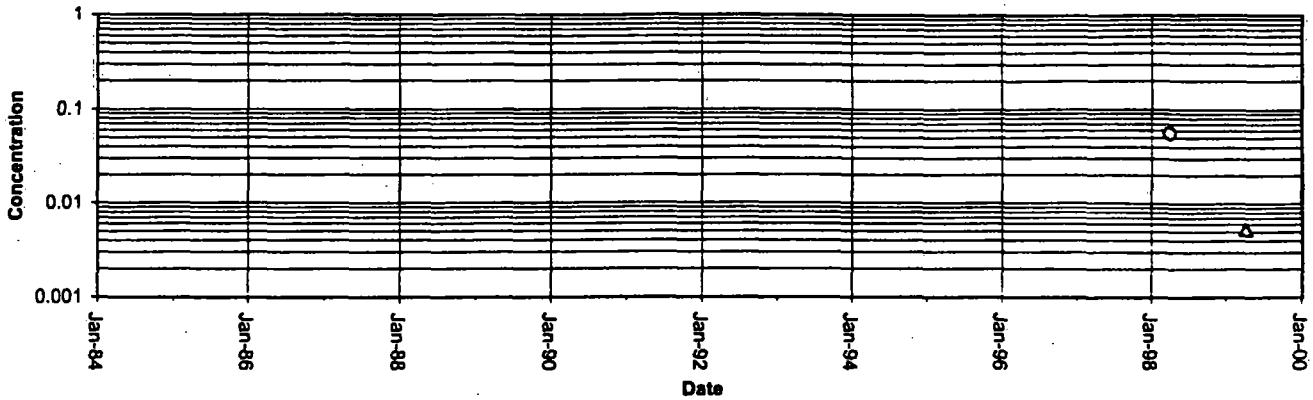
G36



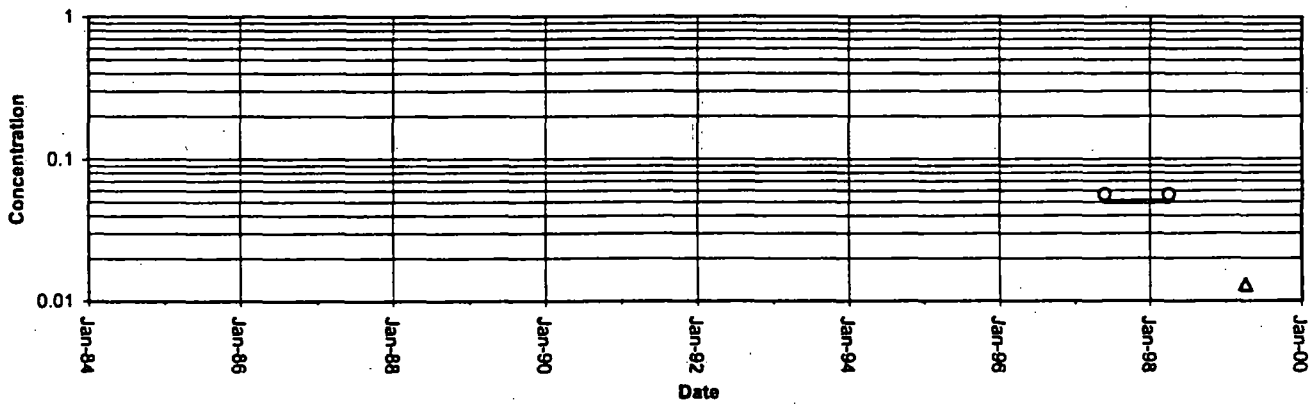
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

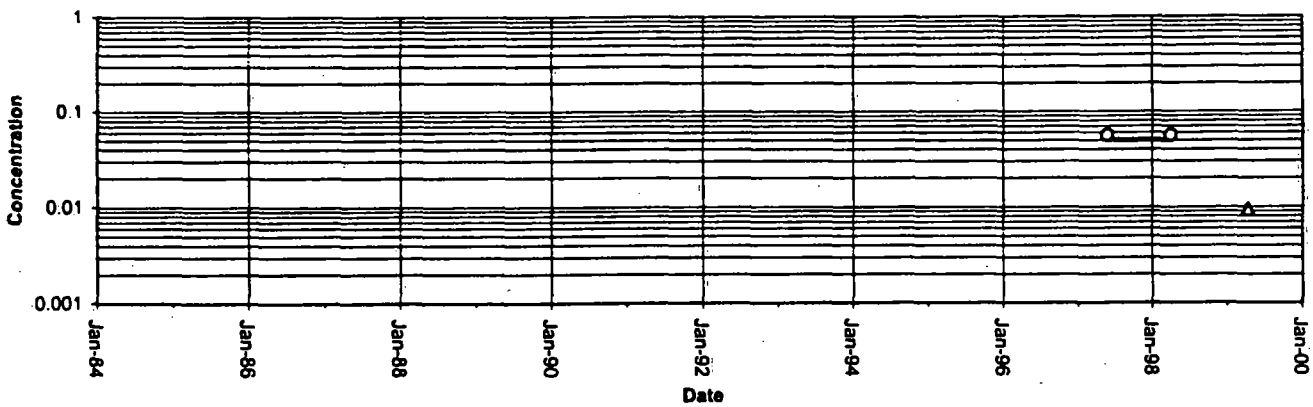
G37D



G37S



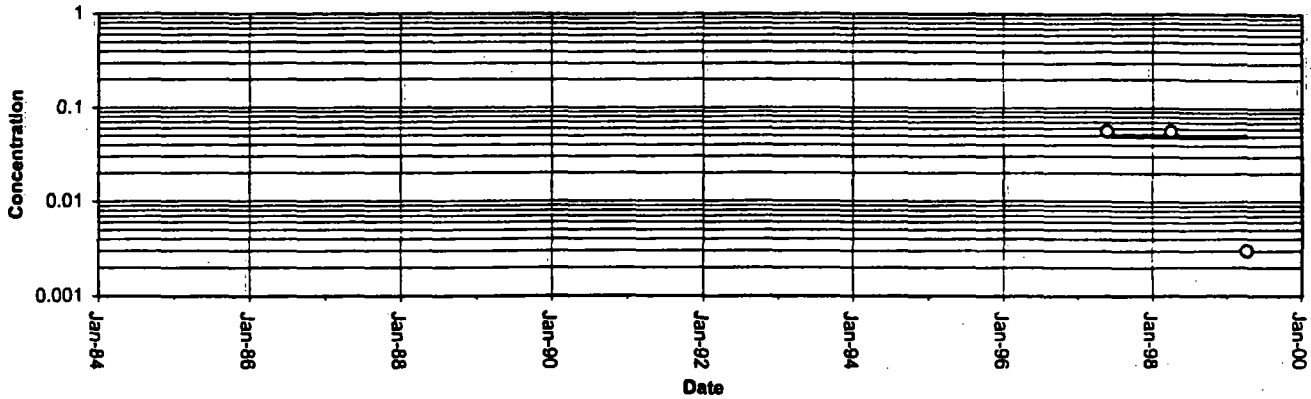
G38



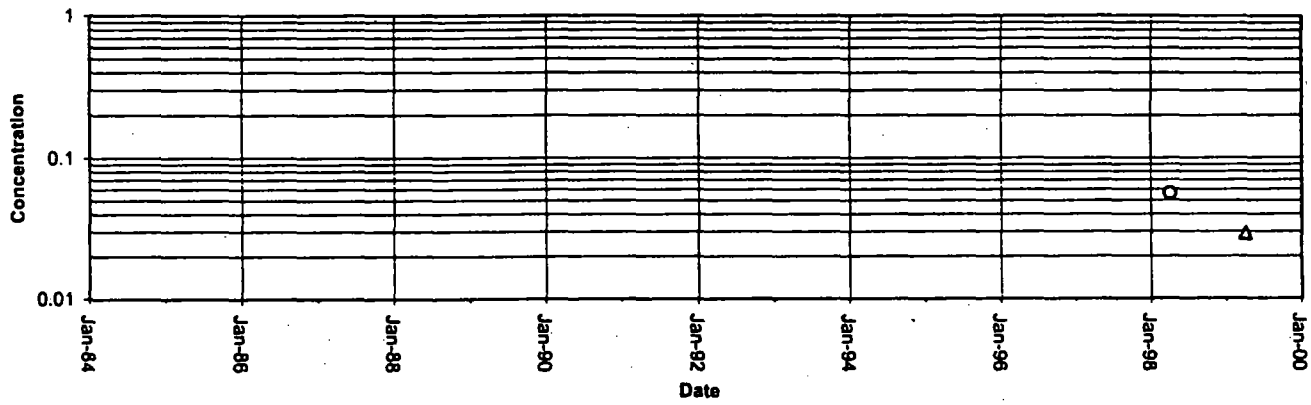
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

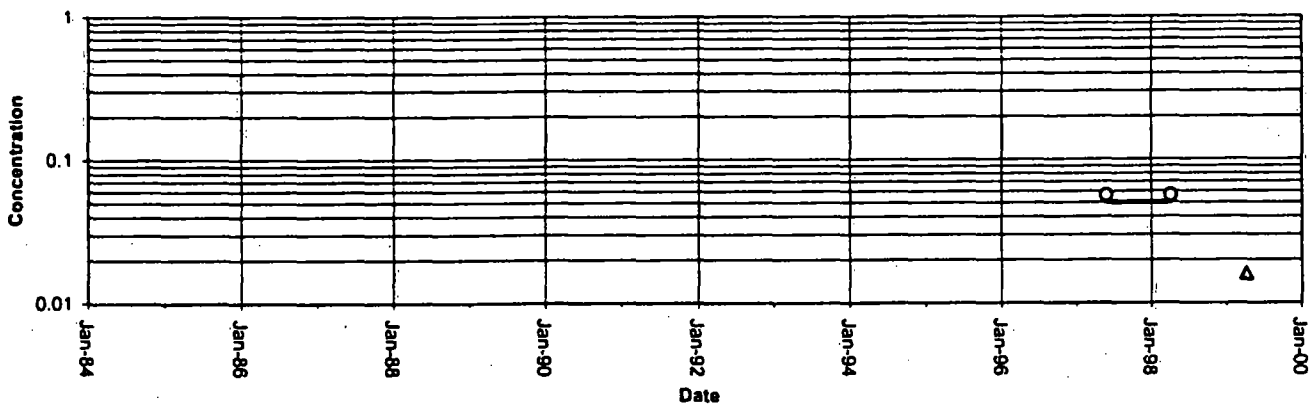
G39



G40



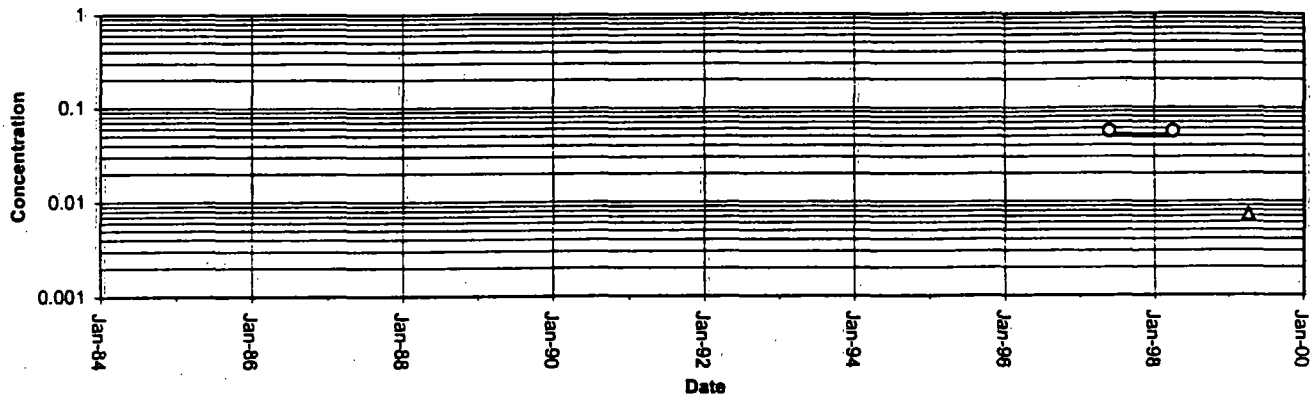
MW106



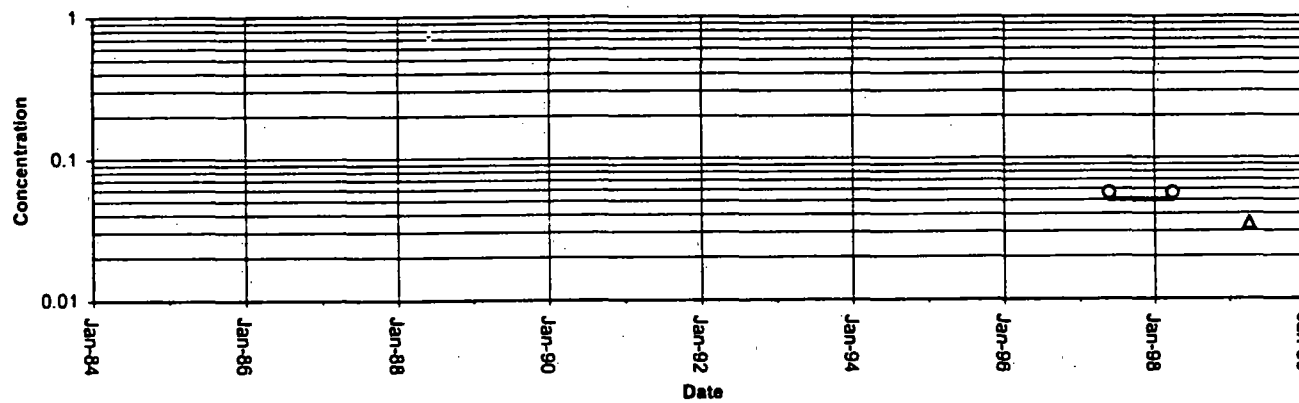
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

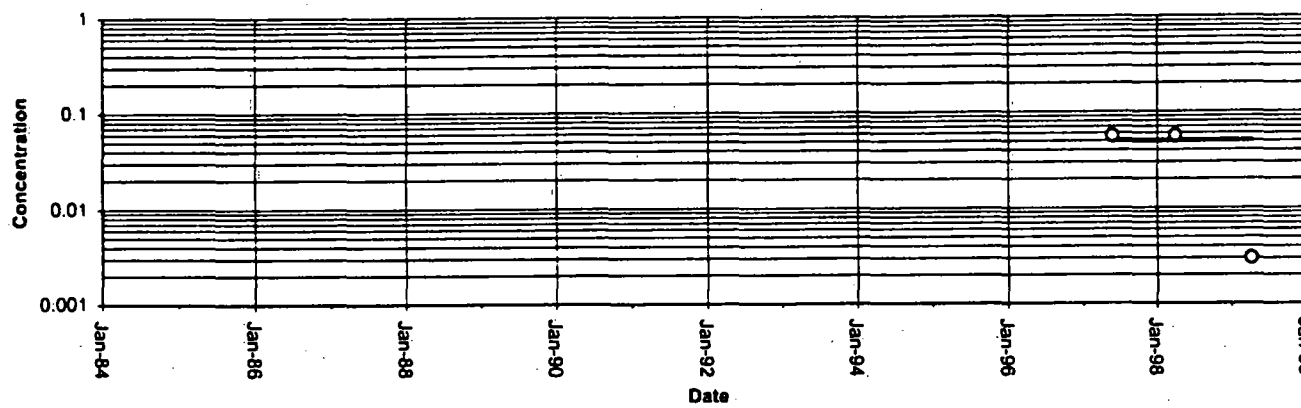
P1



P3R



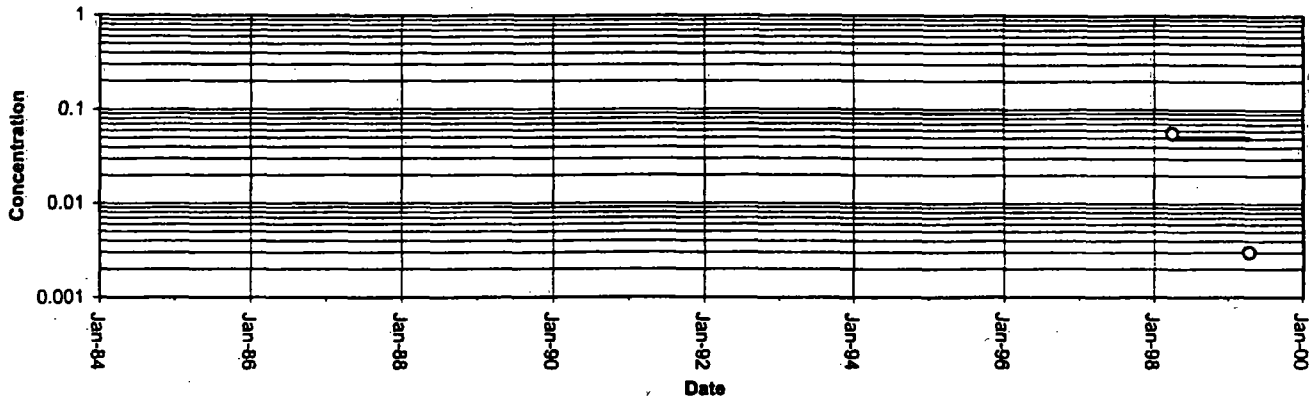
P4R



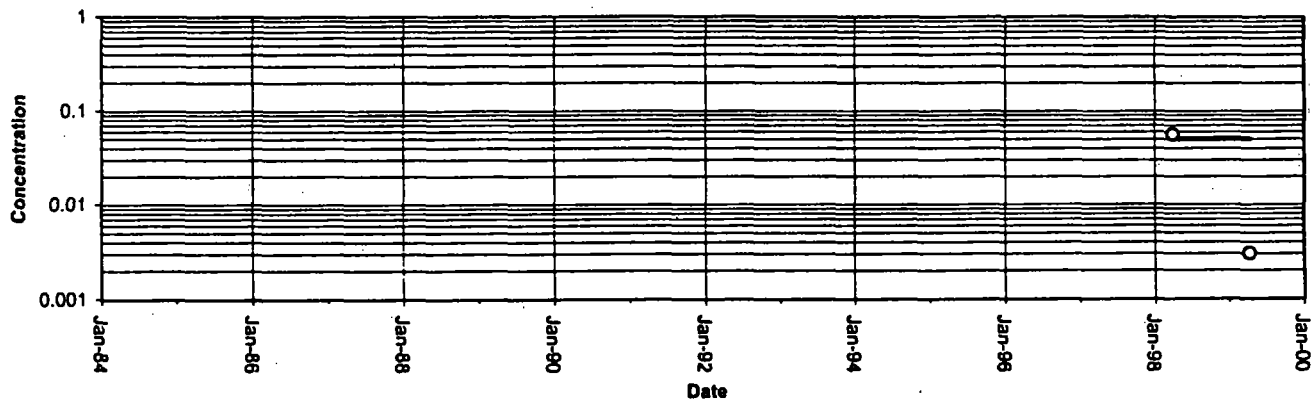
Cobalt (mg/L)

AGQS Δ Concentration O NonDetect

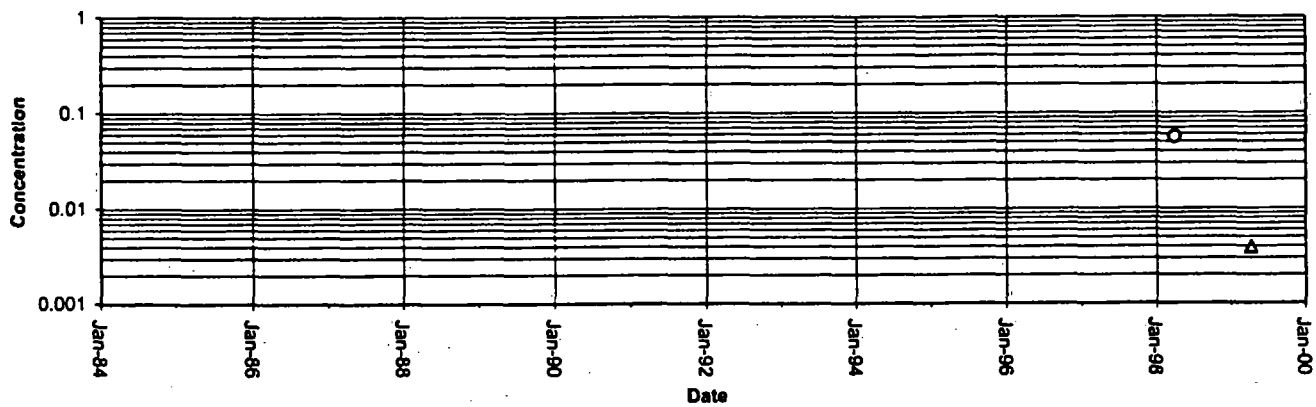
SG1



SG3



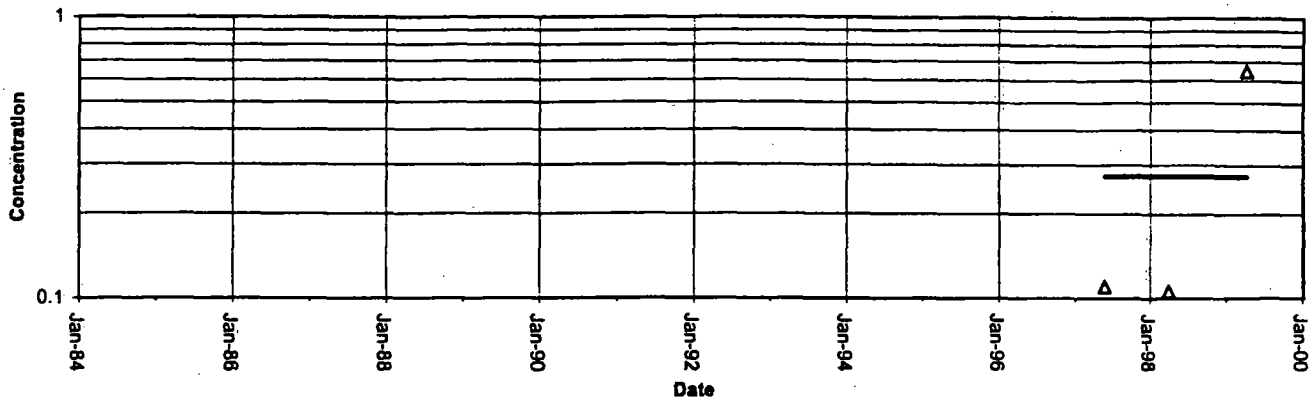
SG4



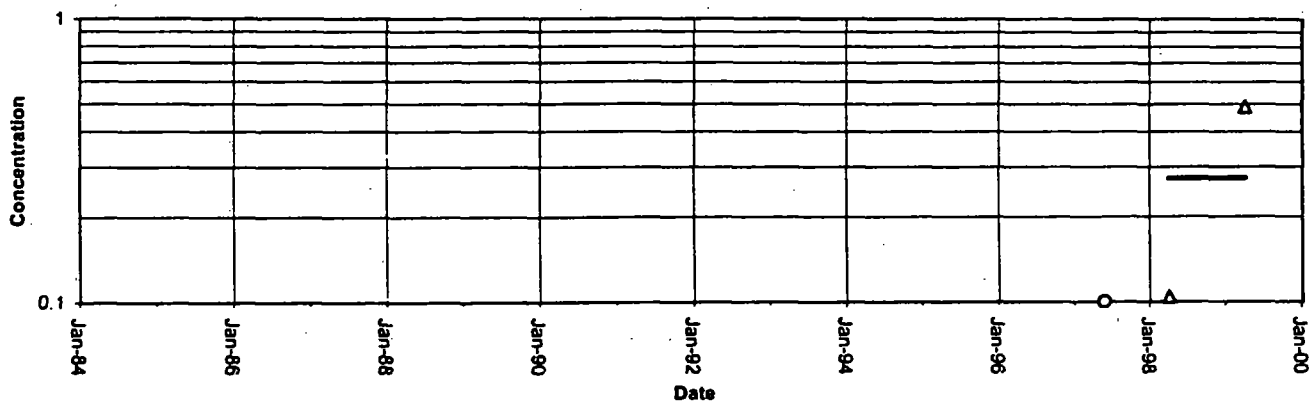
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

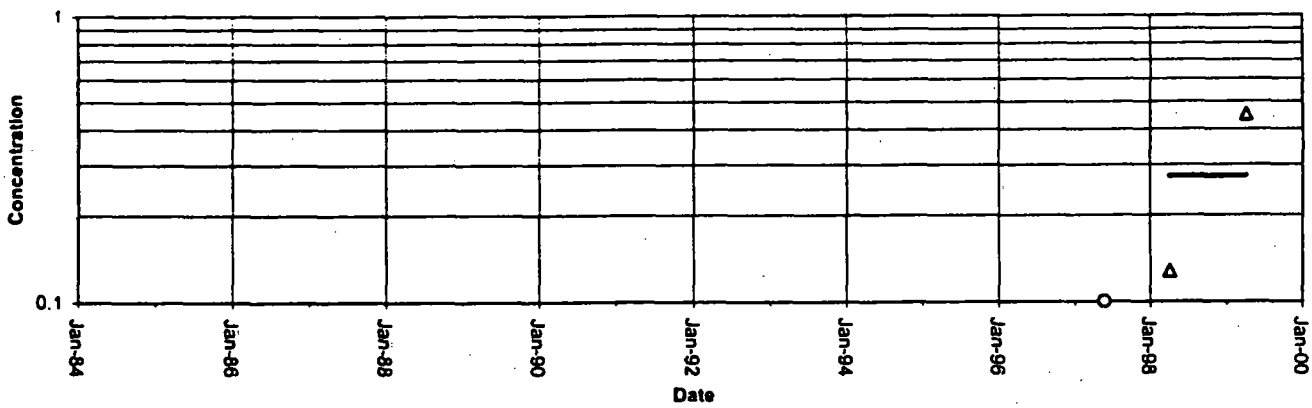
B15R



G109



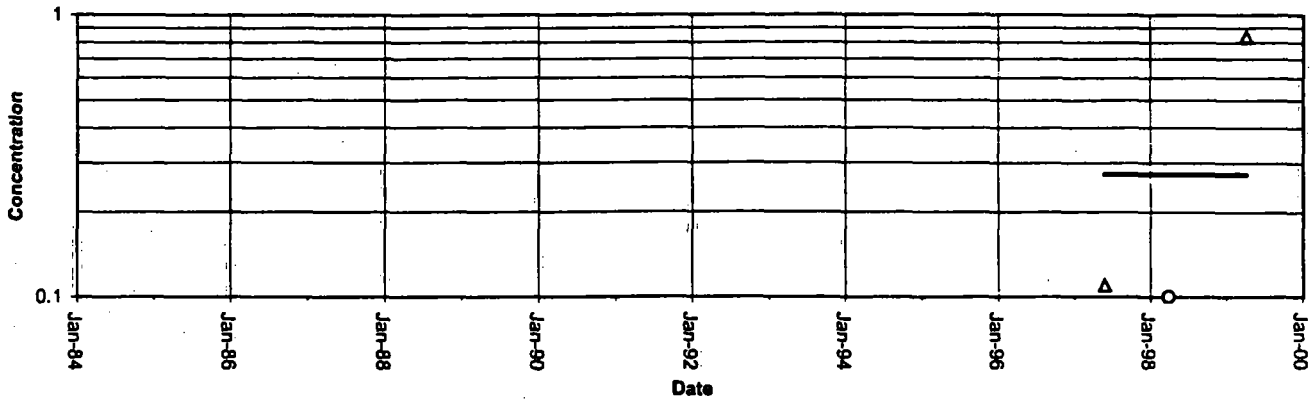
G109A



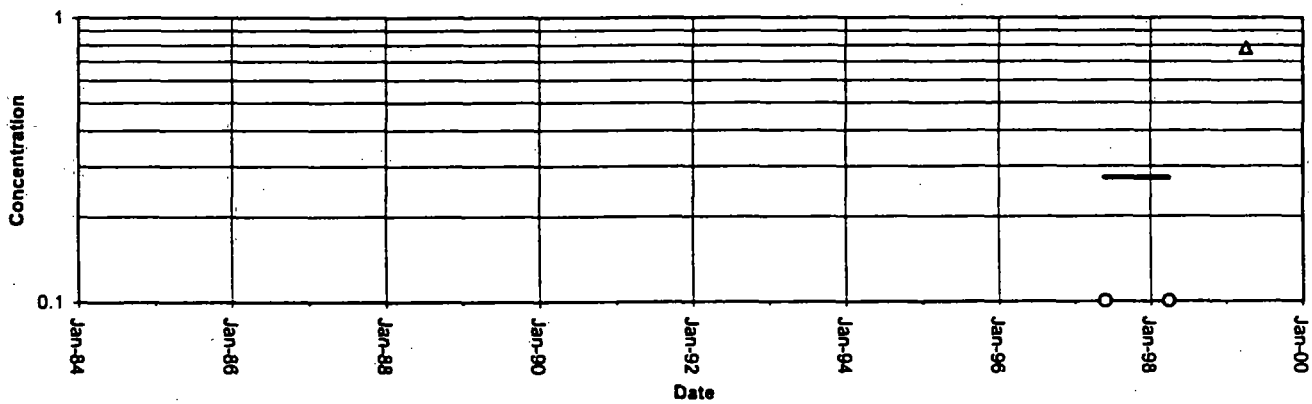
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

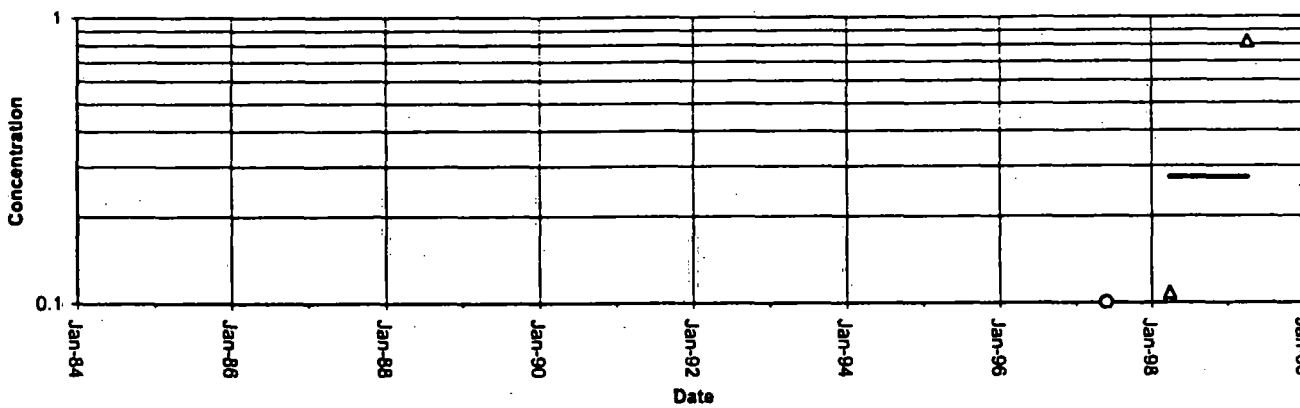
G113



G113A



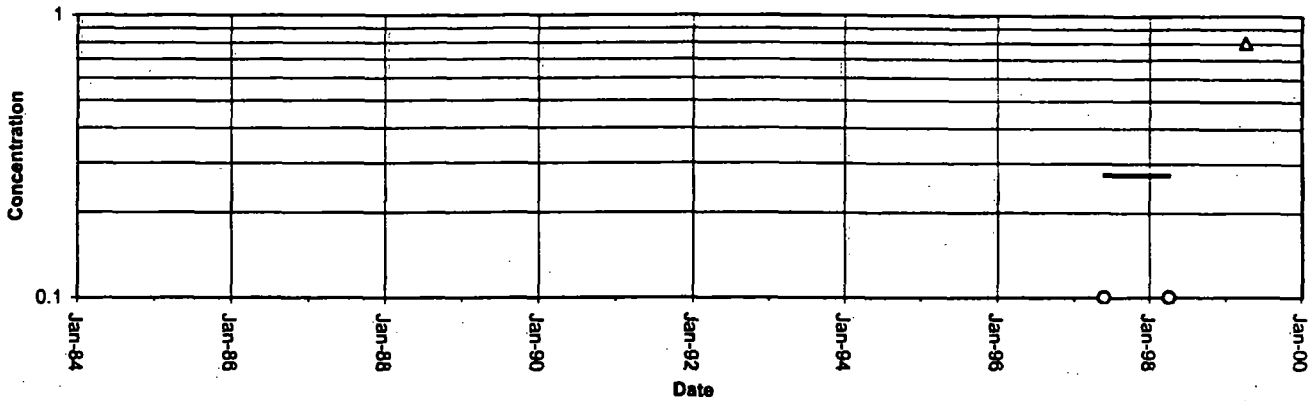
G114



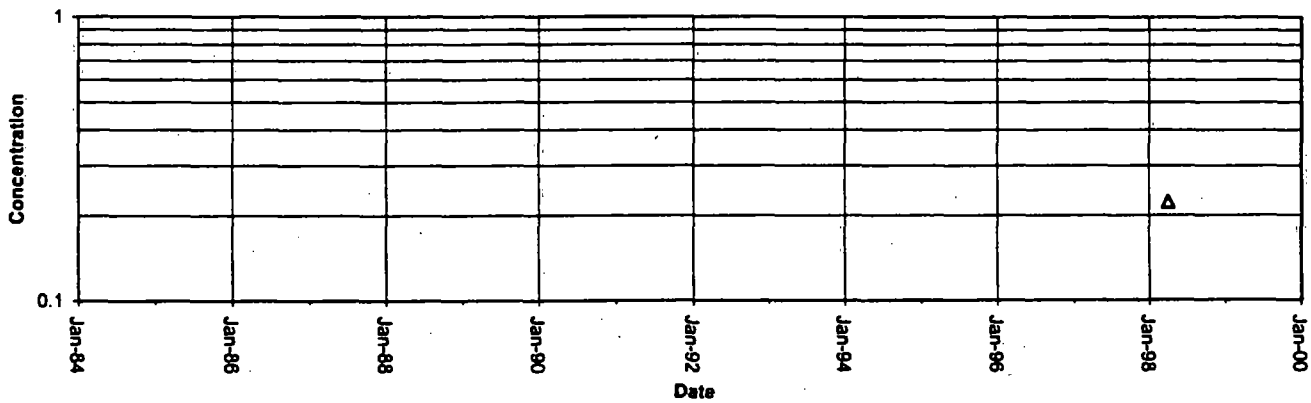
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

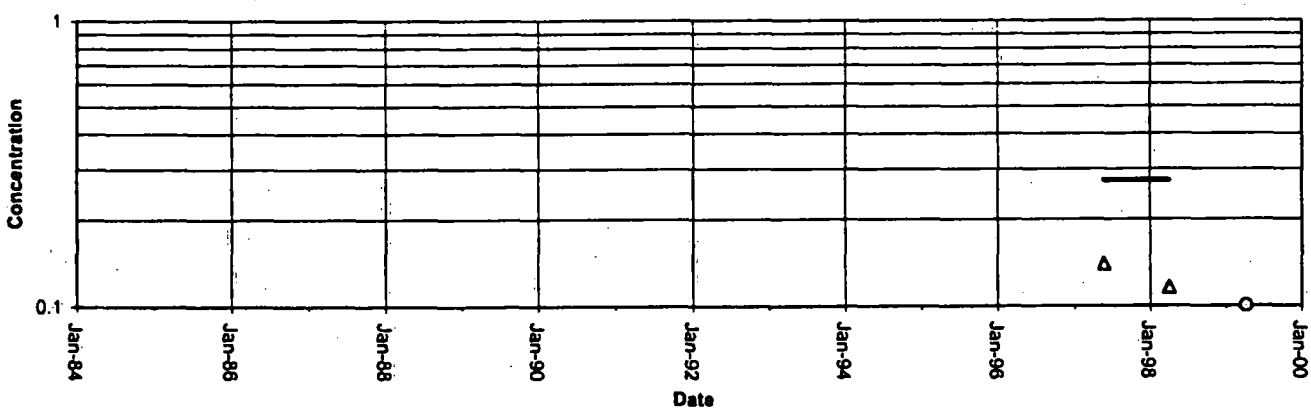
G115



G116



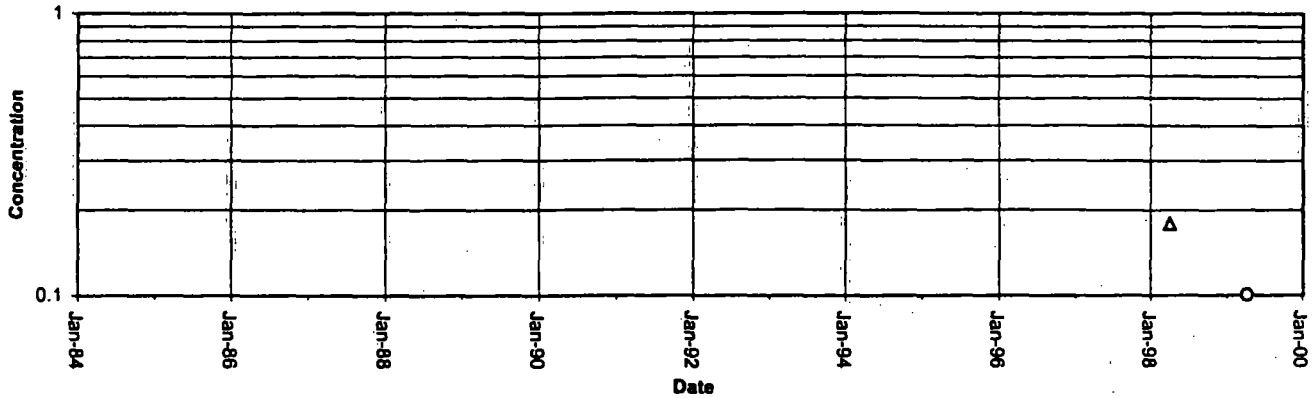
G116A



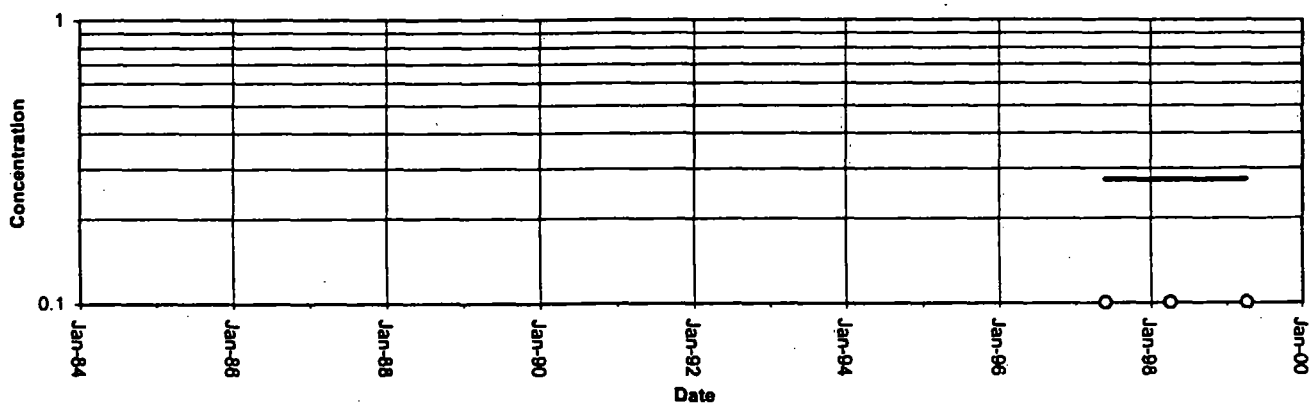
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

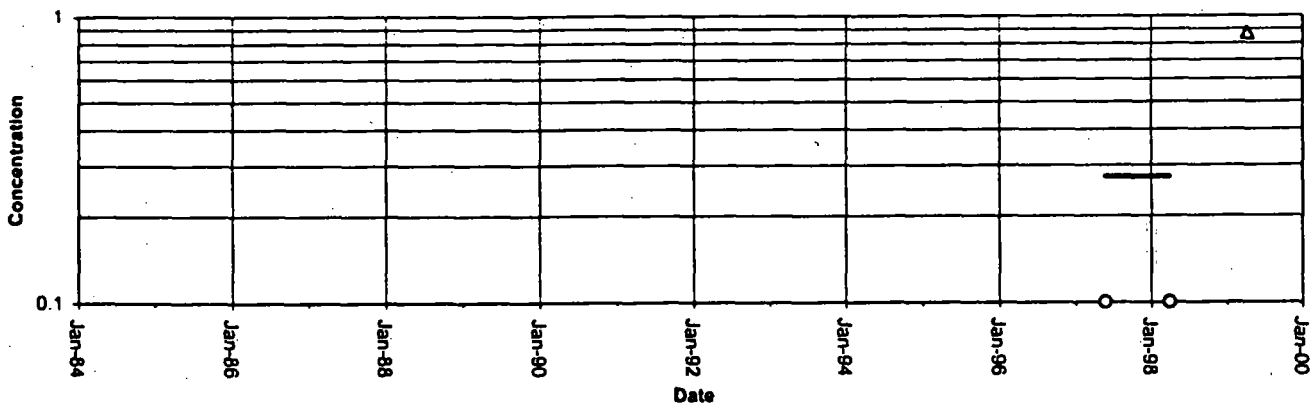
G116D



G117



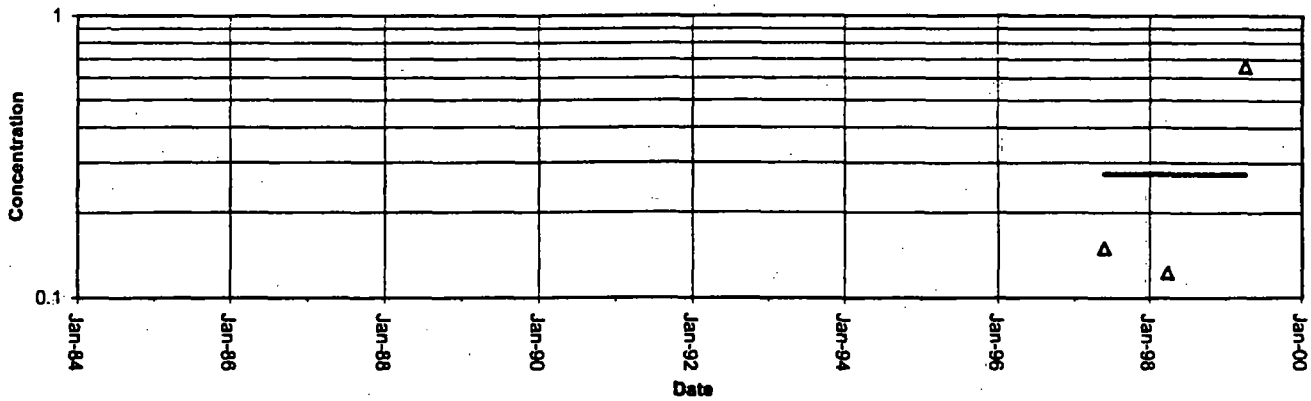
G118A



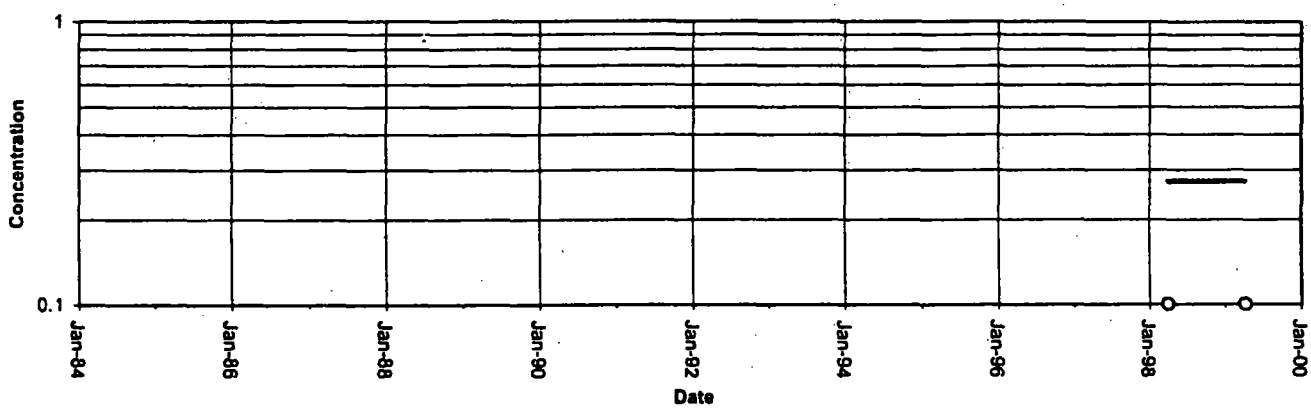
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

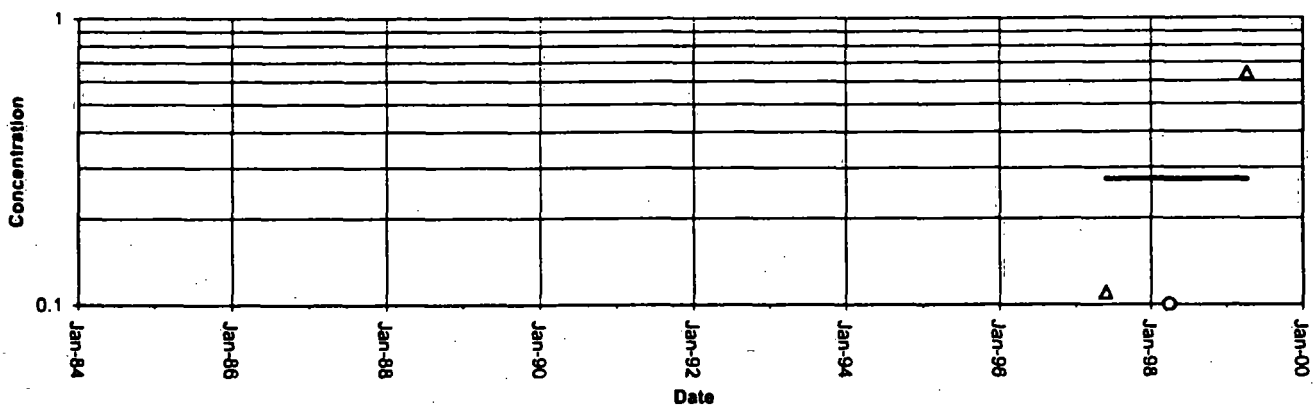
G118R



G119



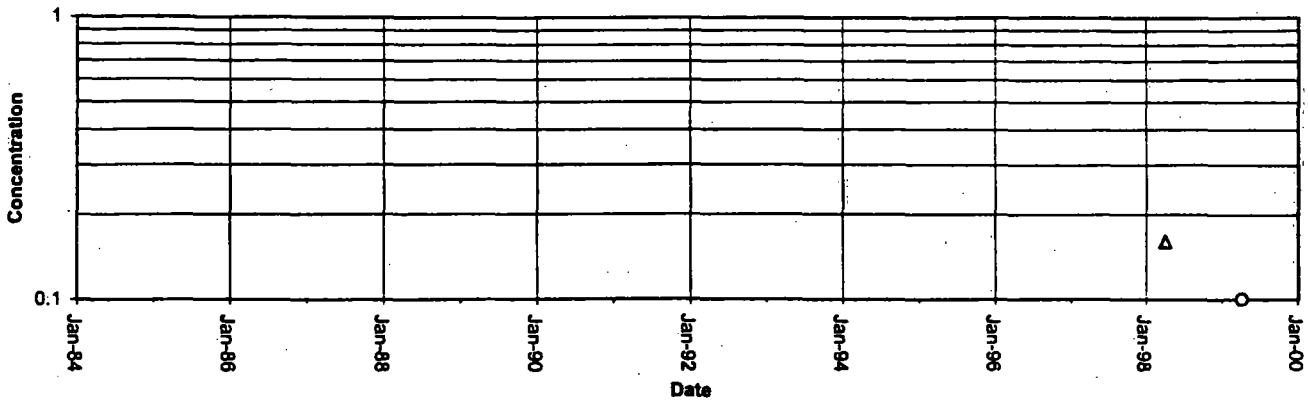
G120B



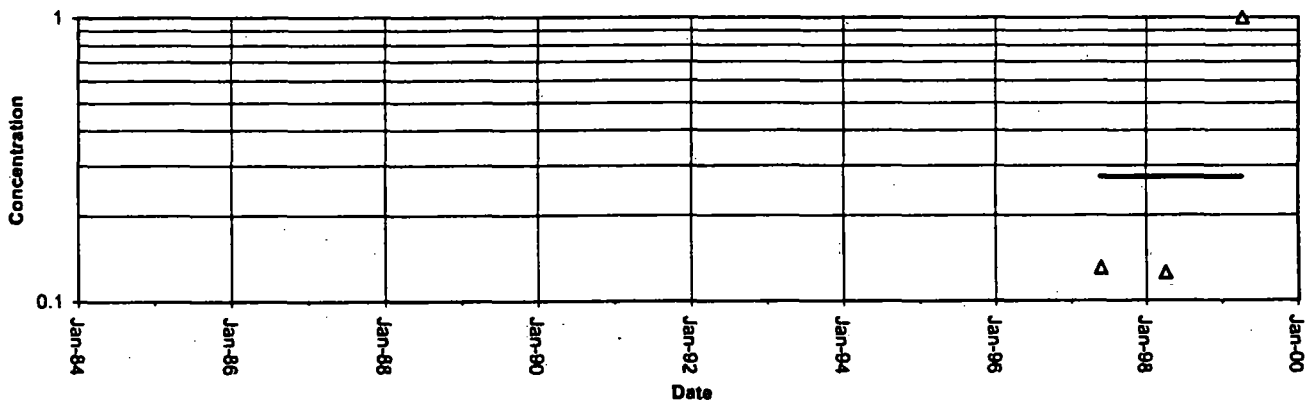
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

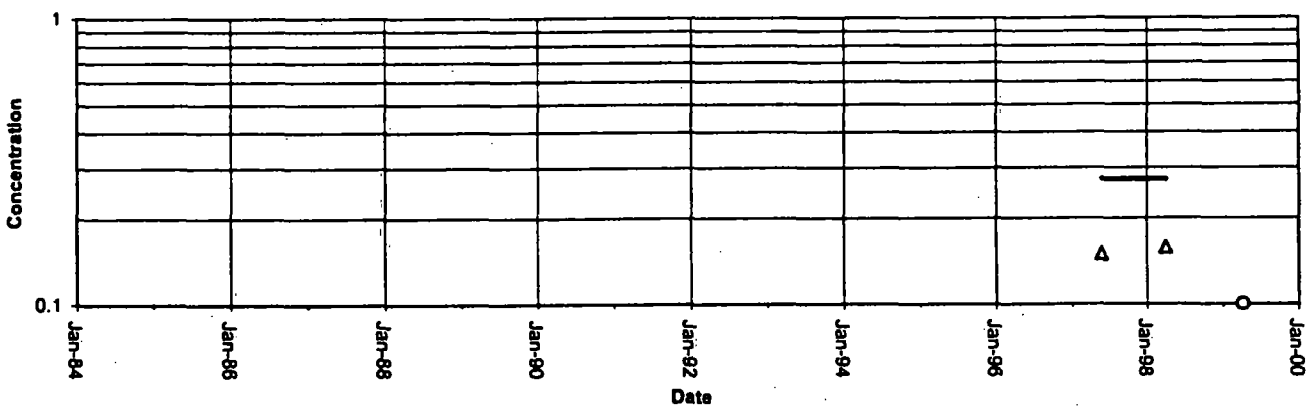
G130



G132



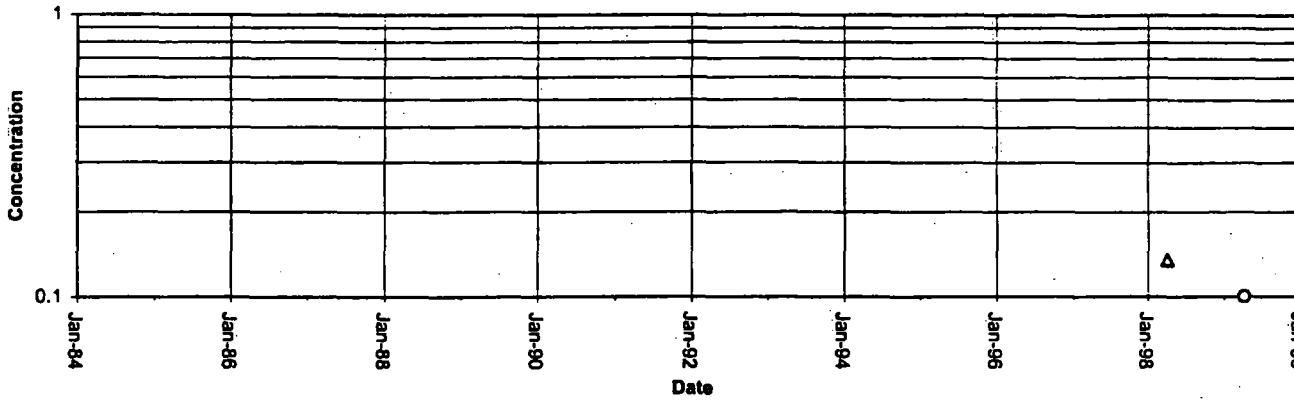
G33D



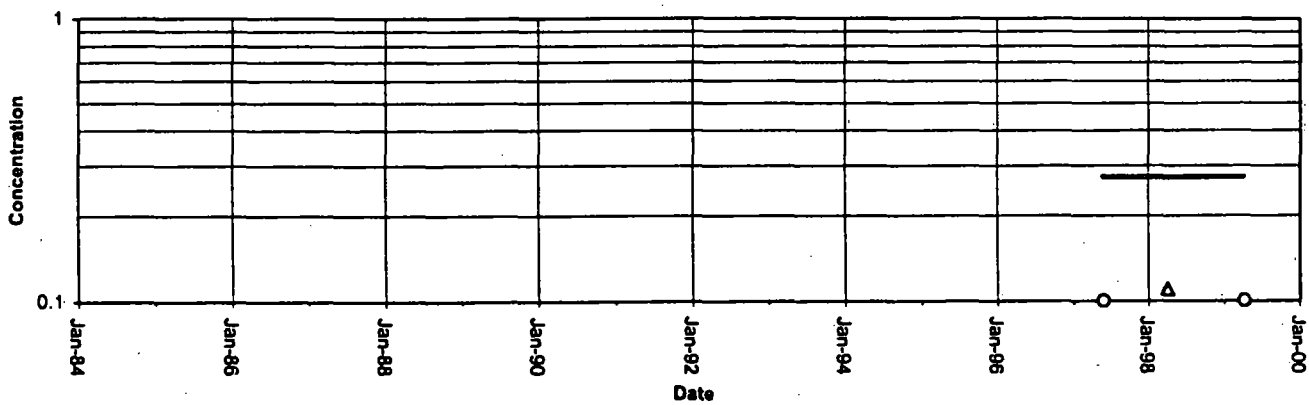
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

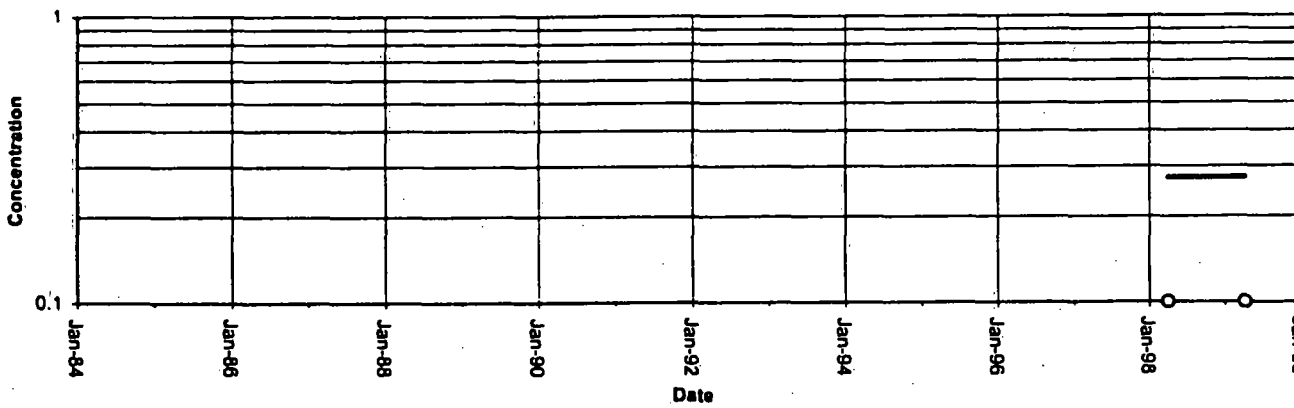
G33S



G34D



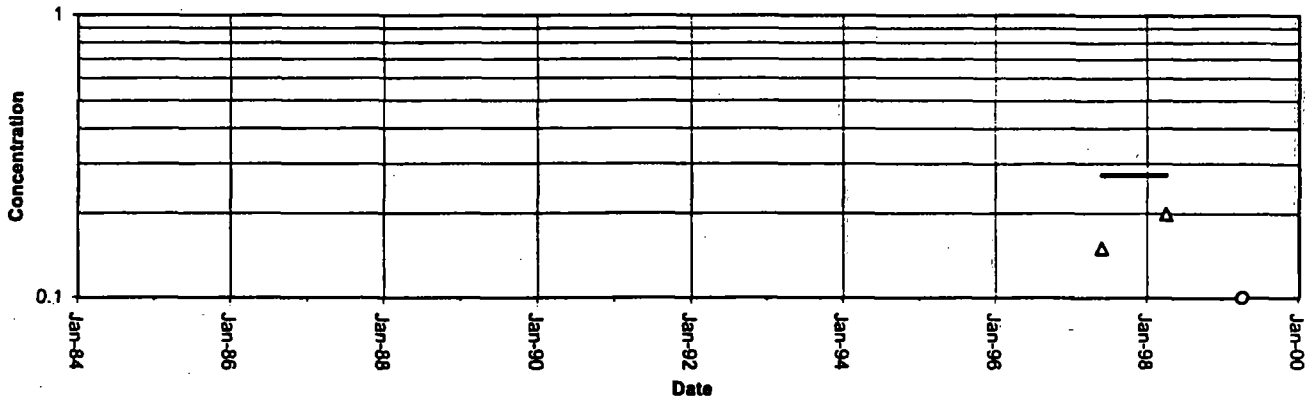
G34S



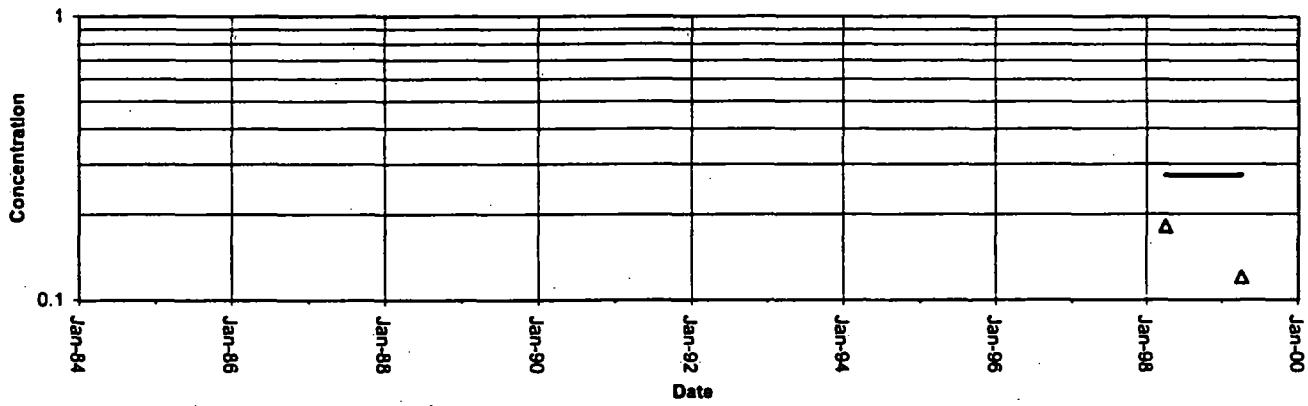
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

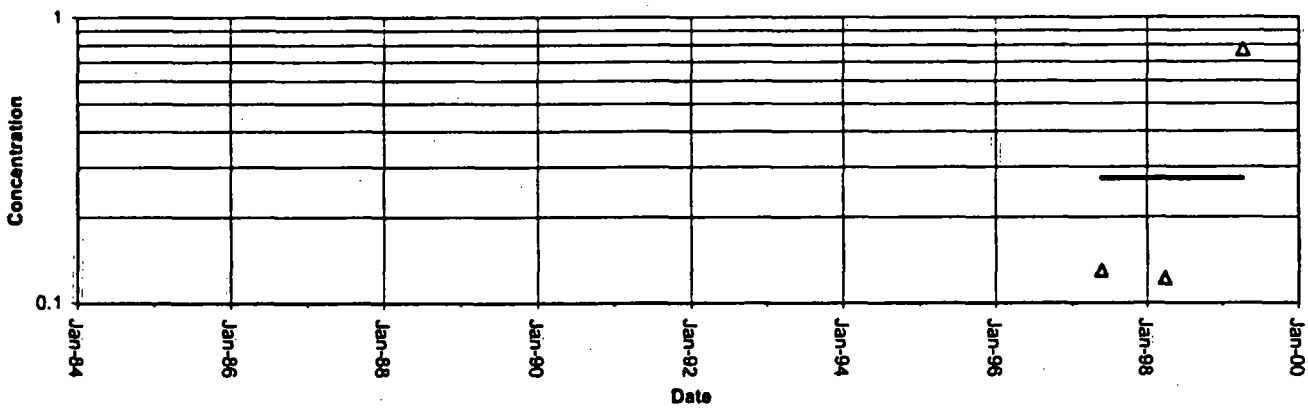
G35D



G35S



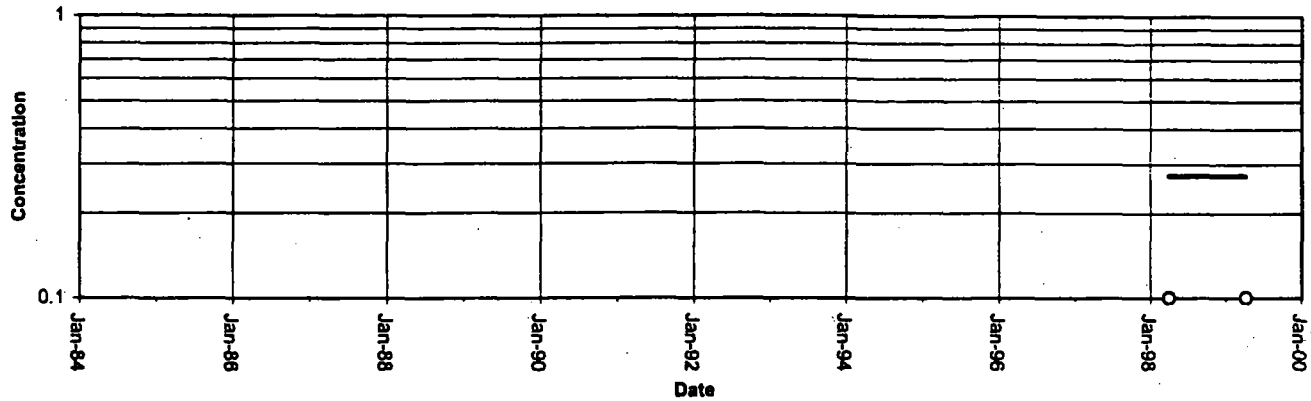
G36



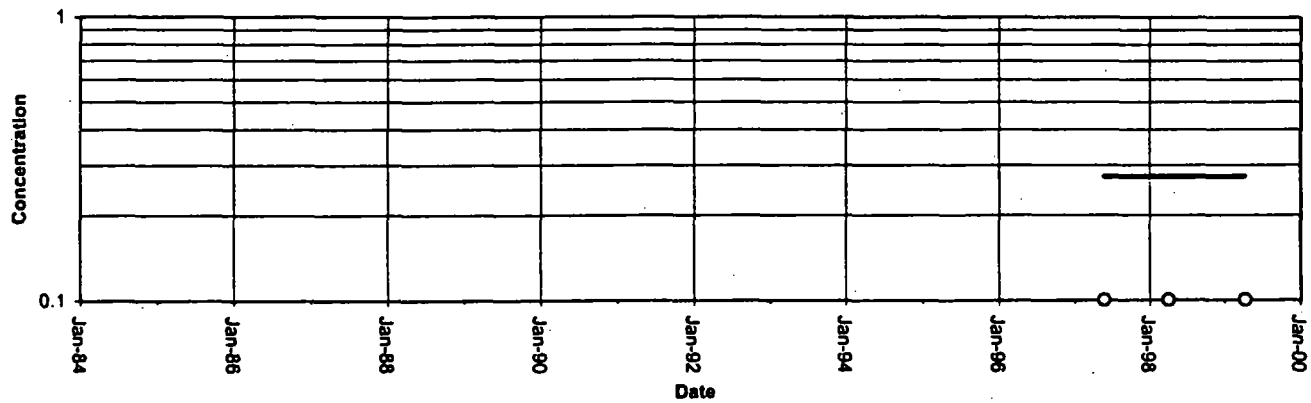
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

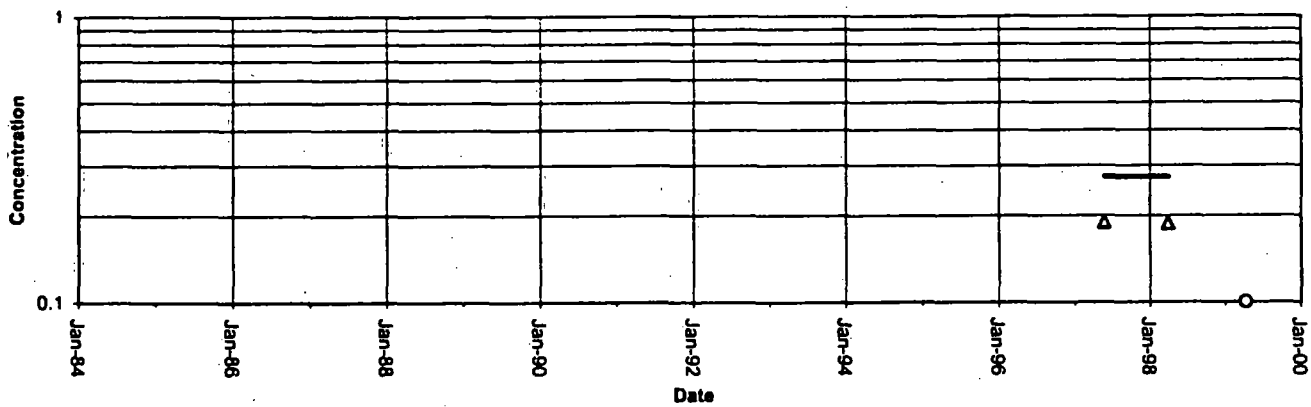
G37D



G37S



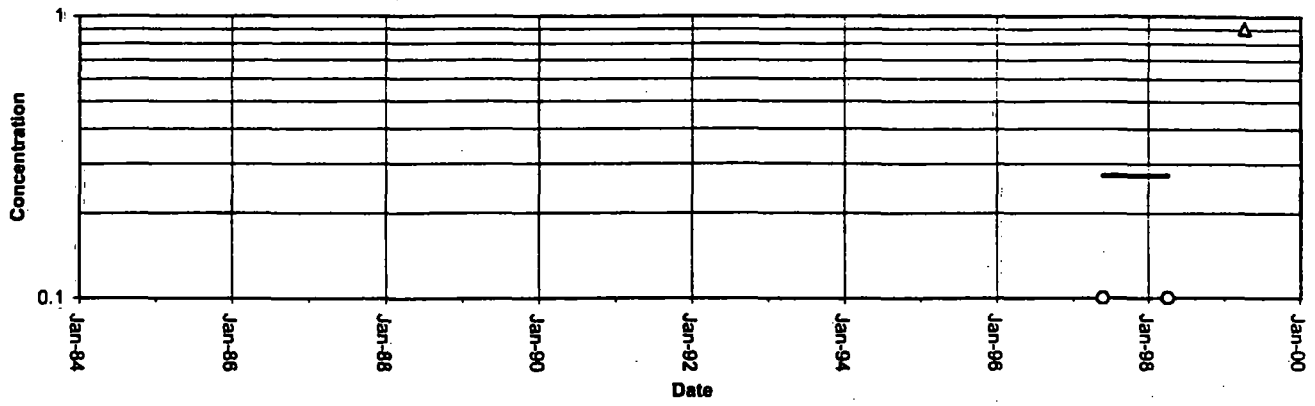
G38



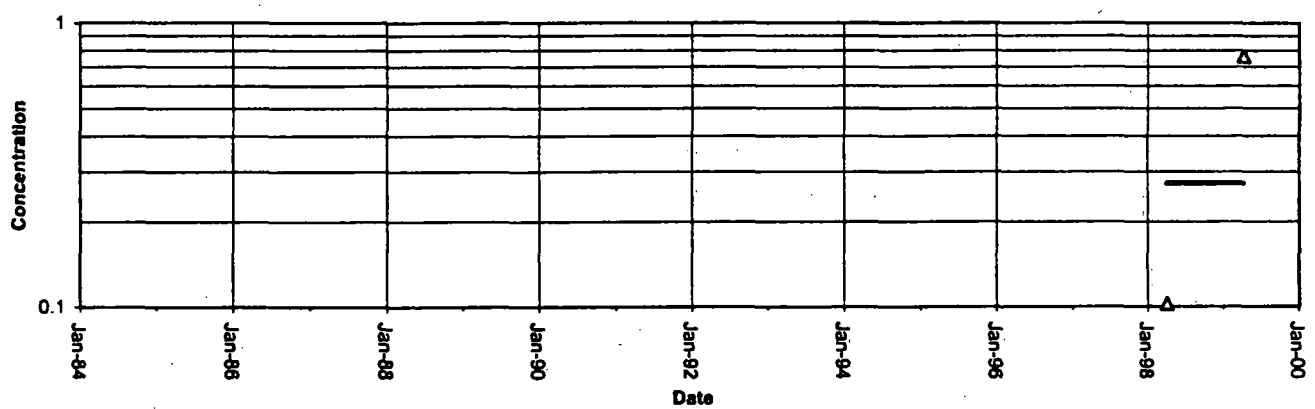
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

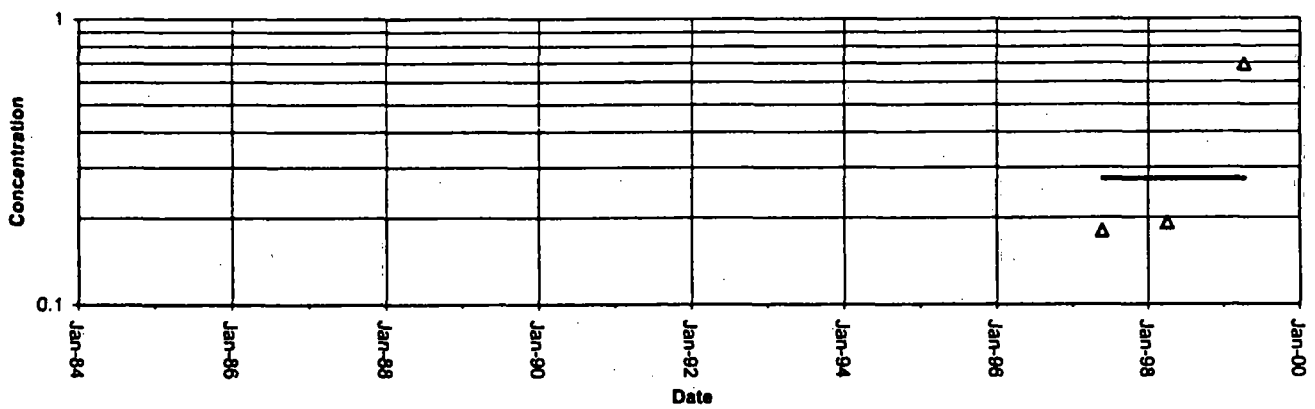
G39



G40



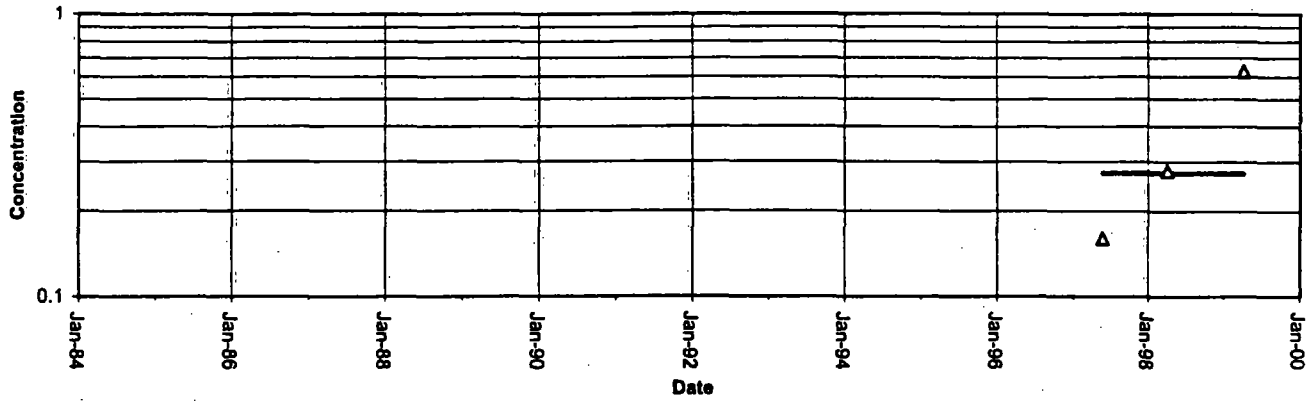
MW106



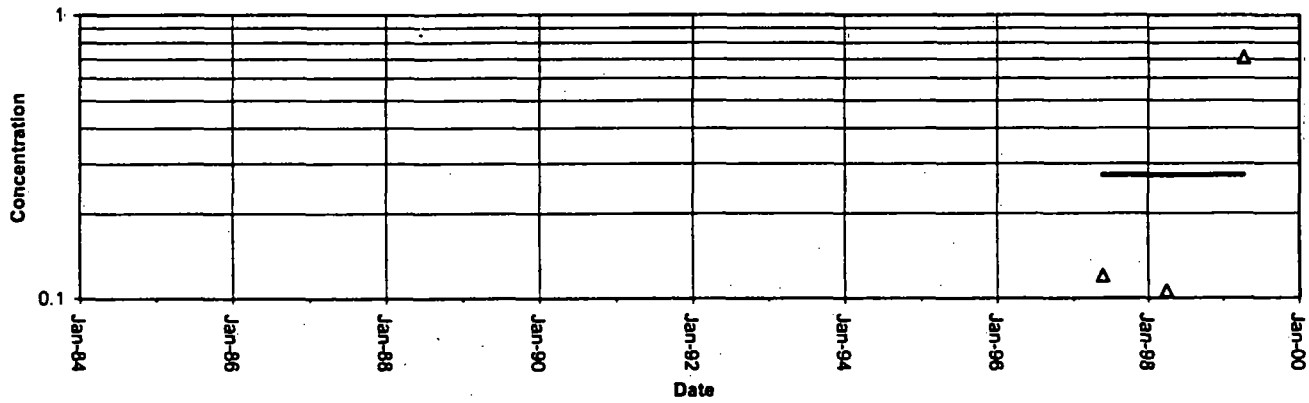
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

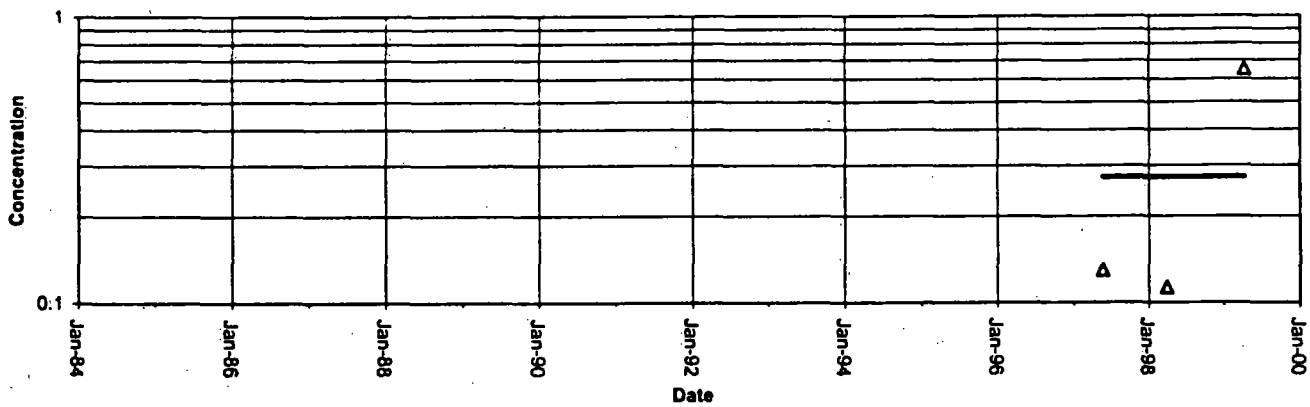
P1



P3R



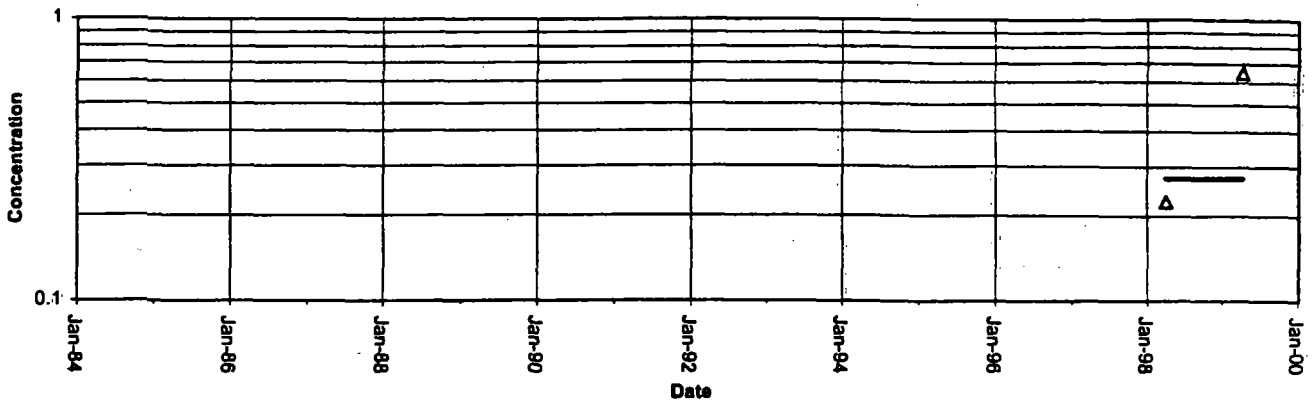
P4R



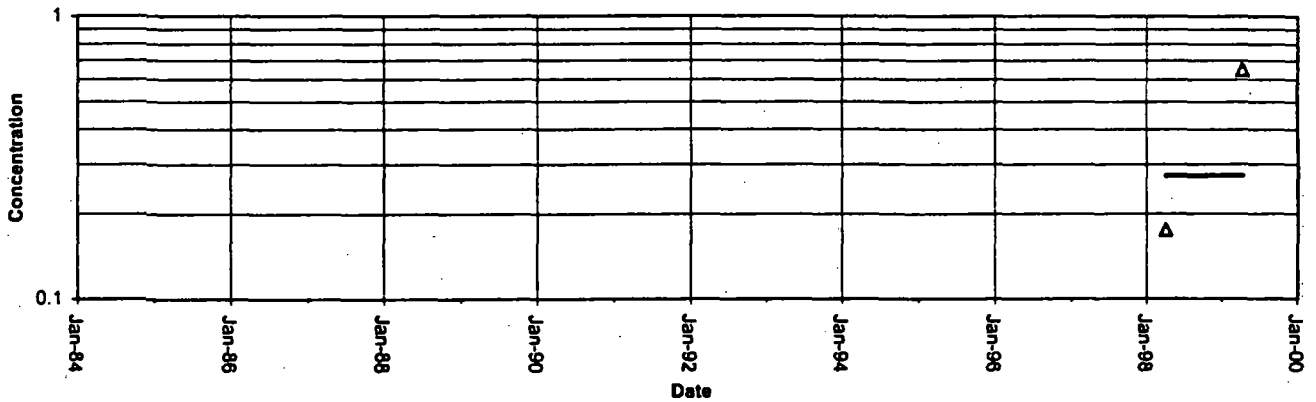
Fluoride (mg/L)

AGQS Δ Concentration O NonDetect

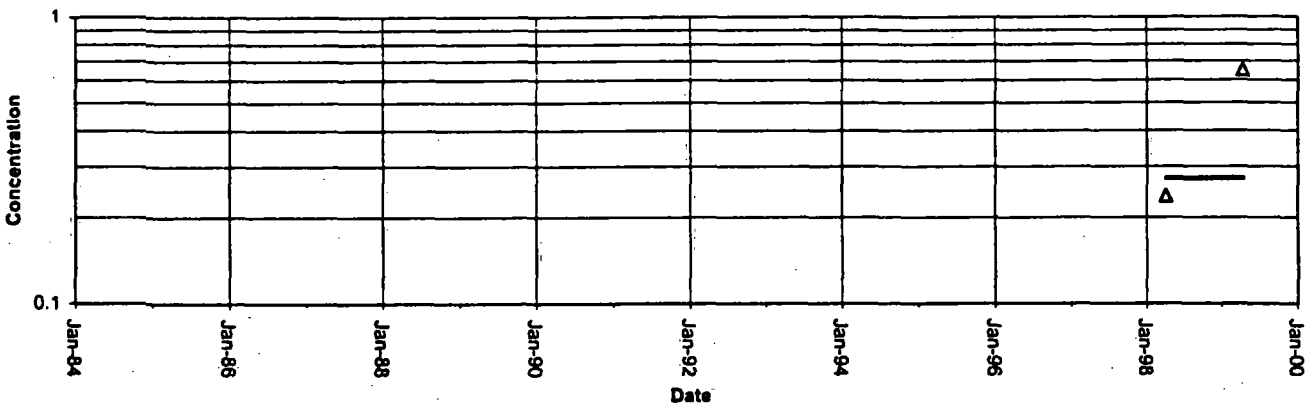
SG1



SG3



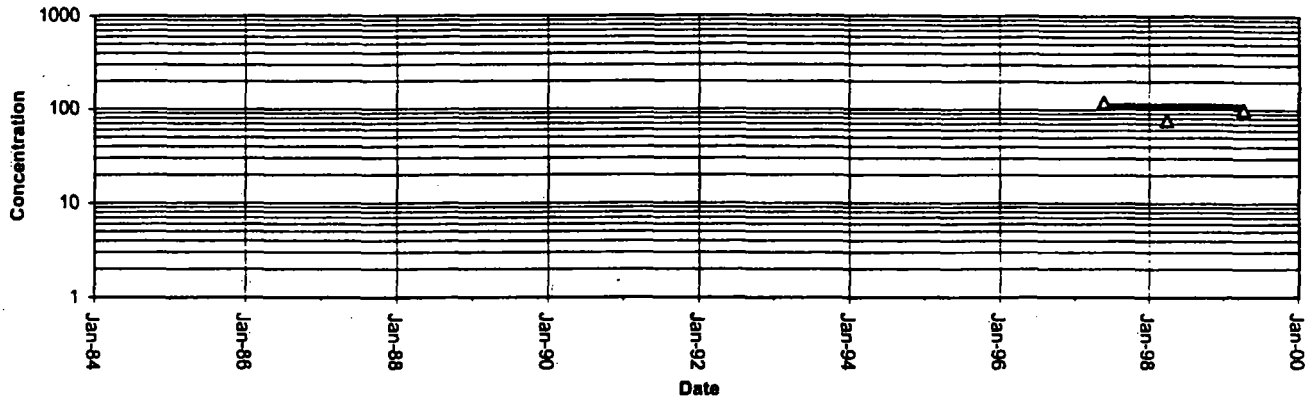
SG4



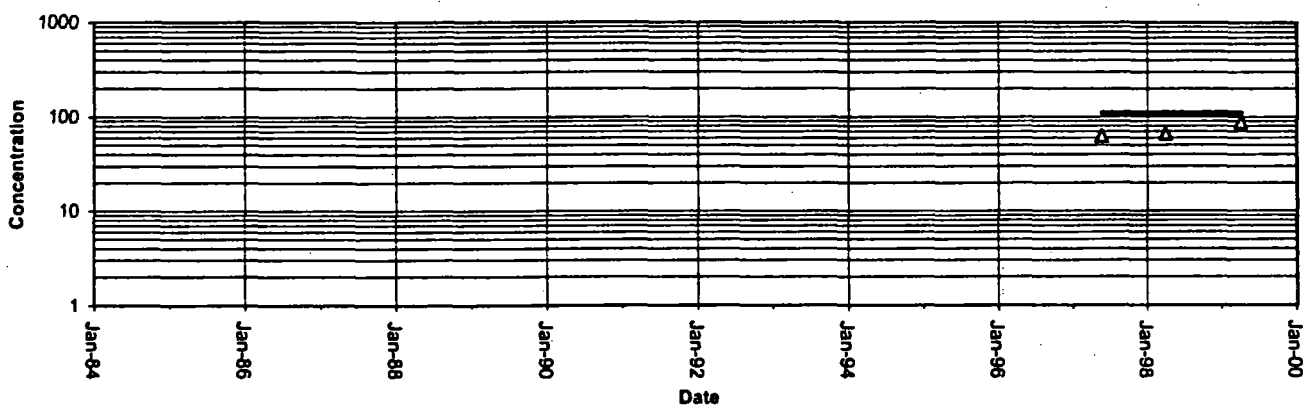
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

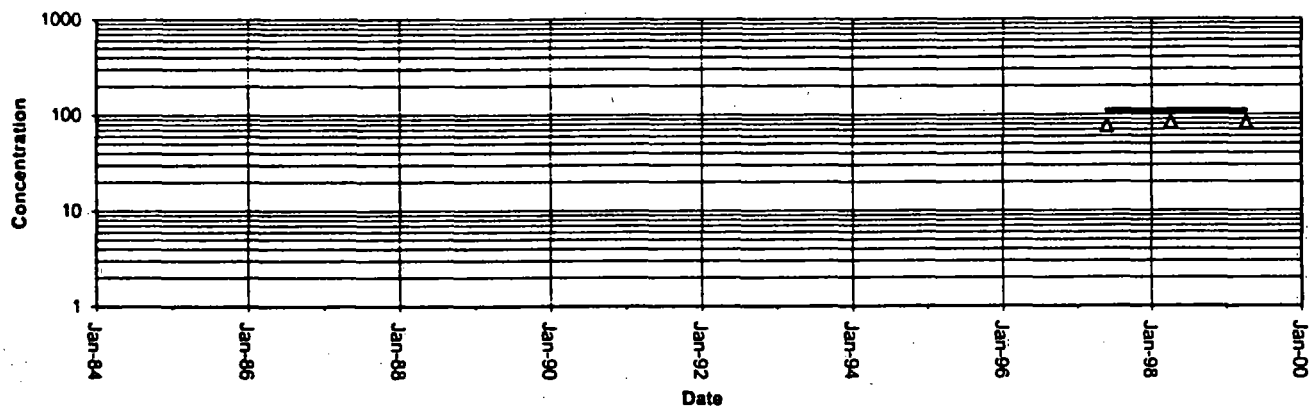
B15R



G109



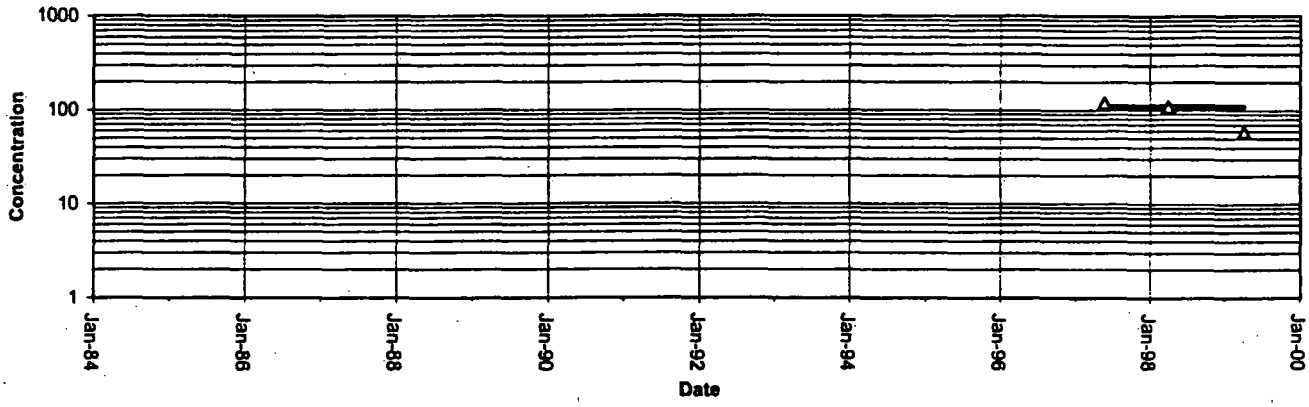
G109A



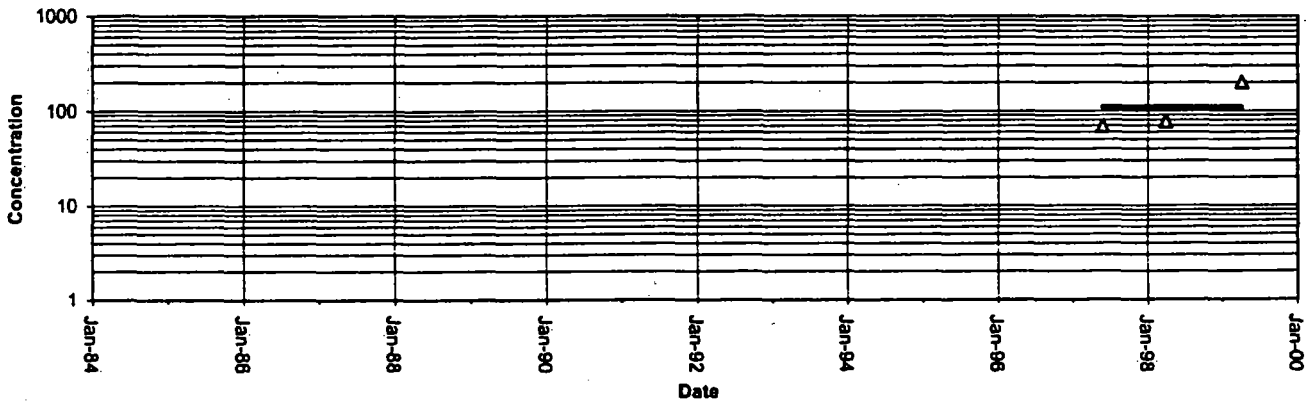
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

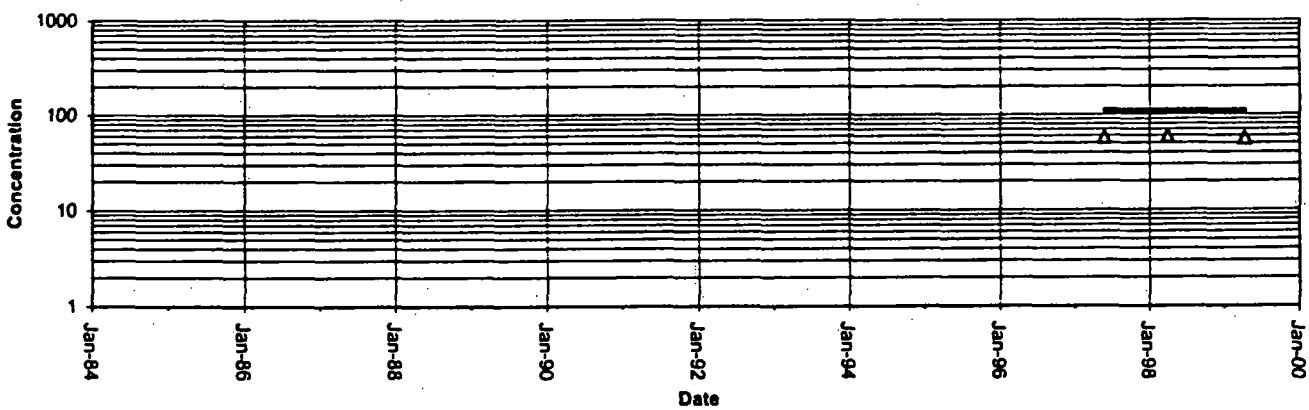
G113



G113A



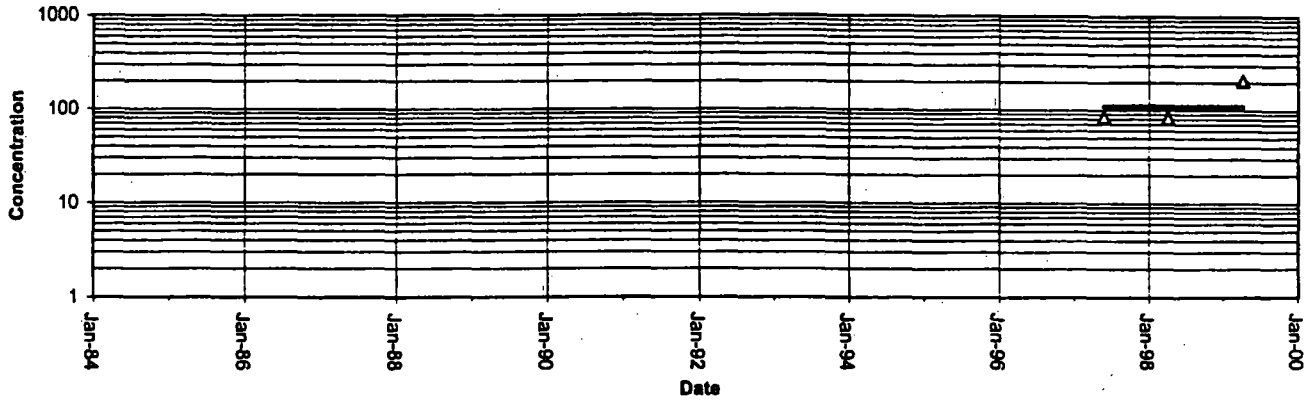
G114



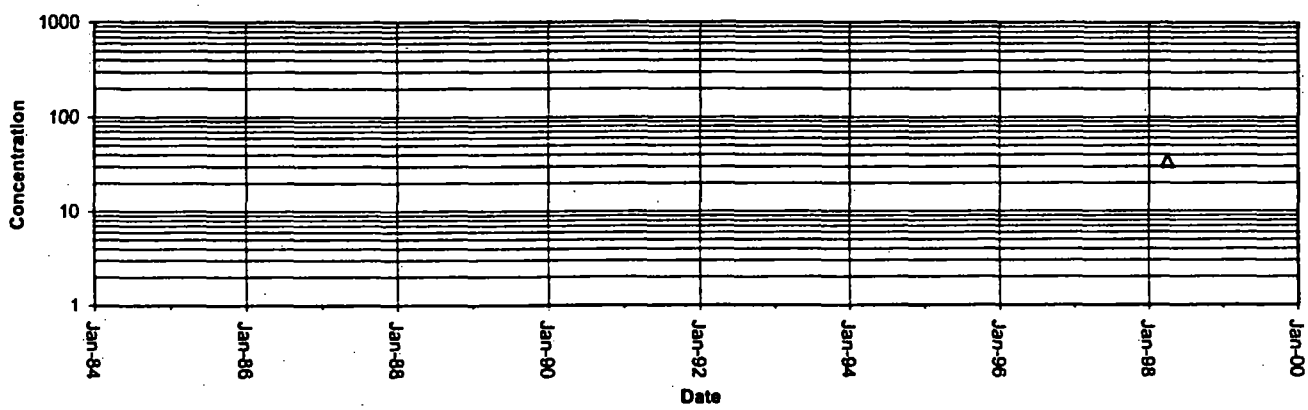
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

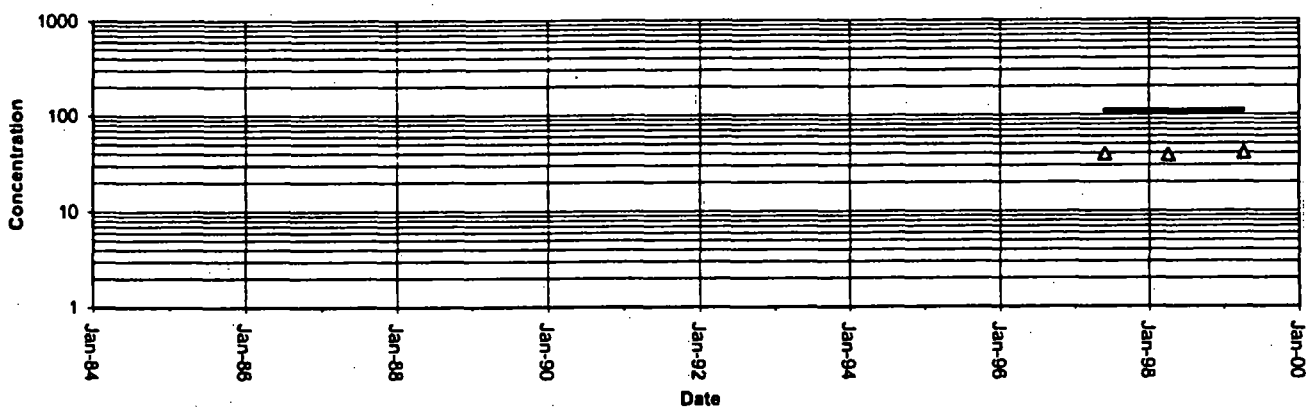
G115



G116



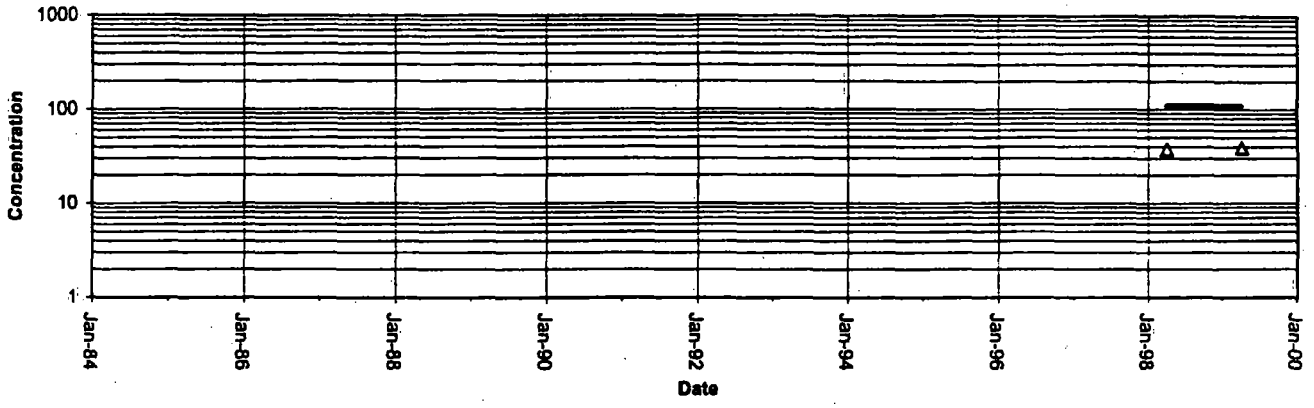
G116A



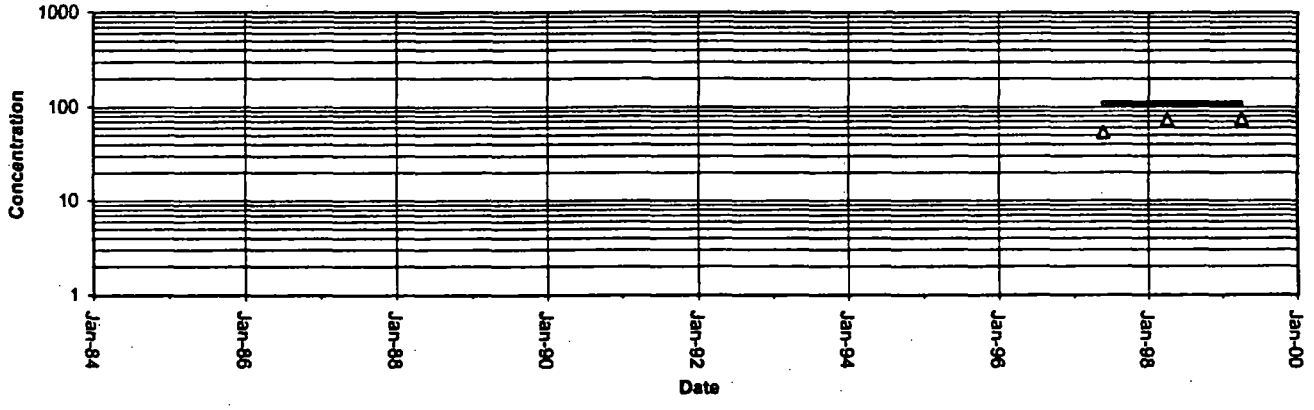
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

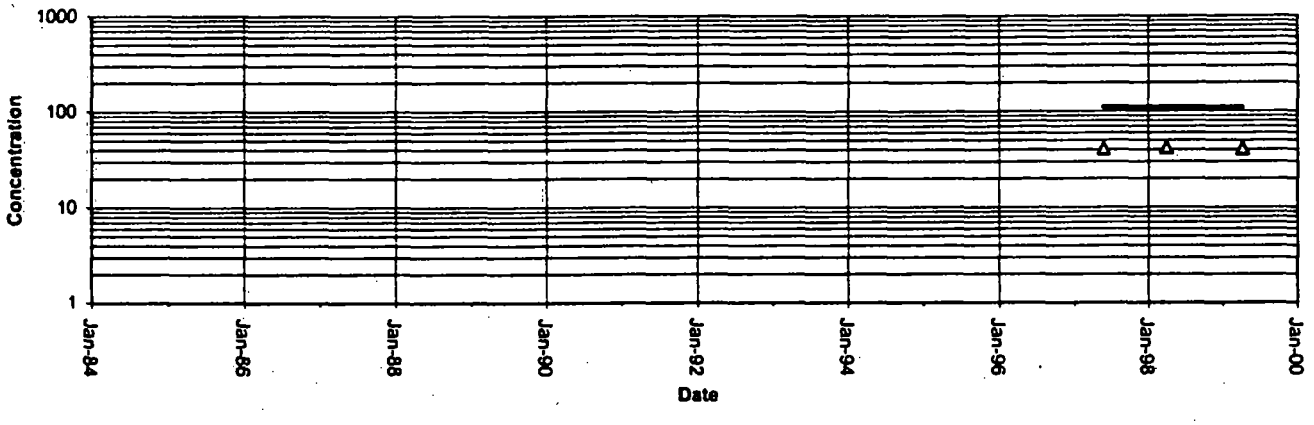
G116D



G117



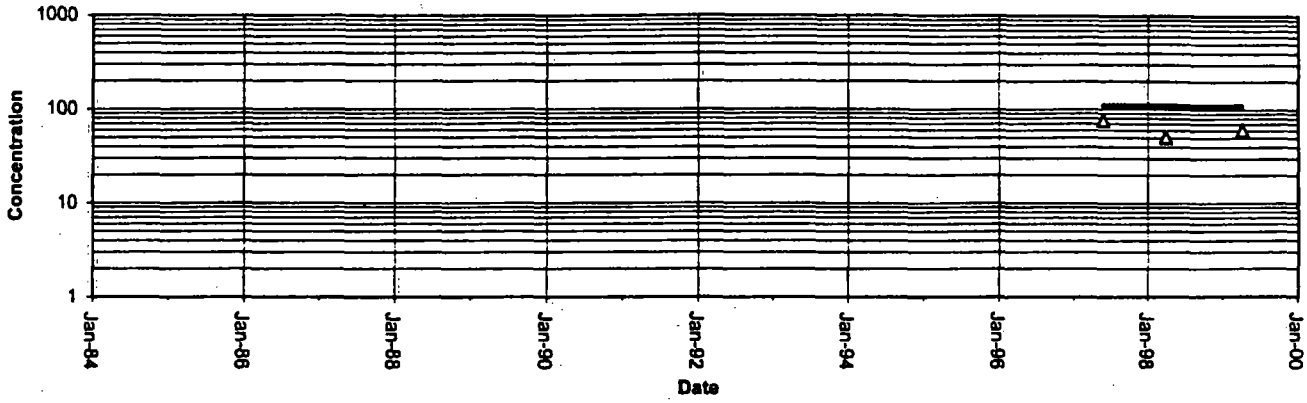
G118A



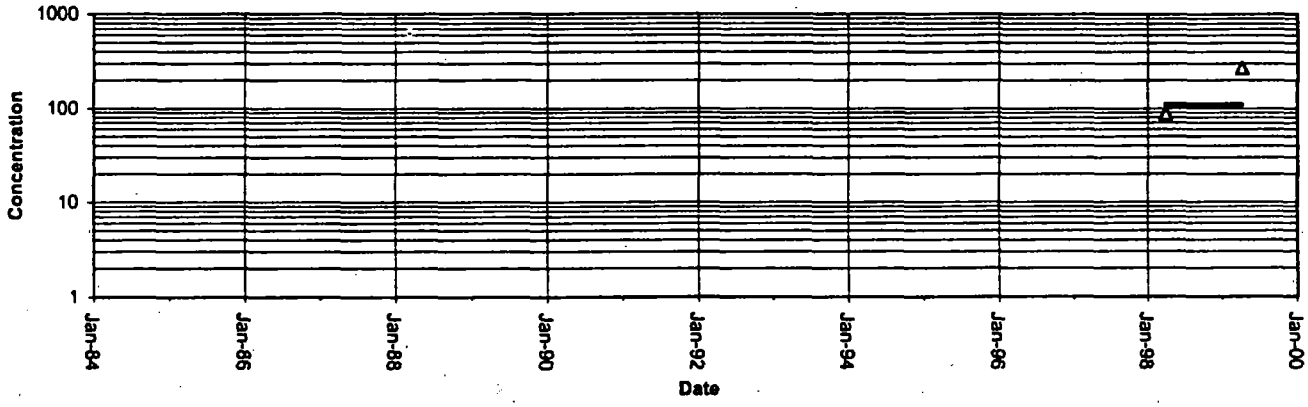
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

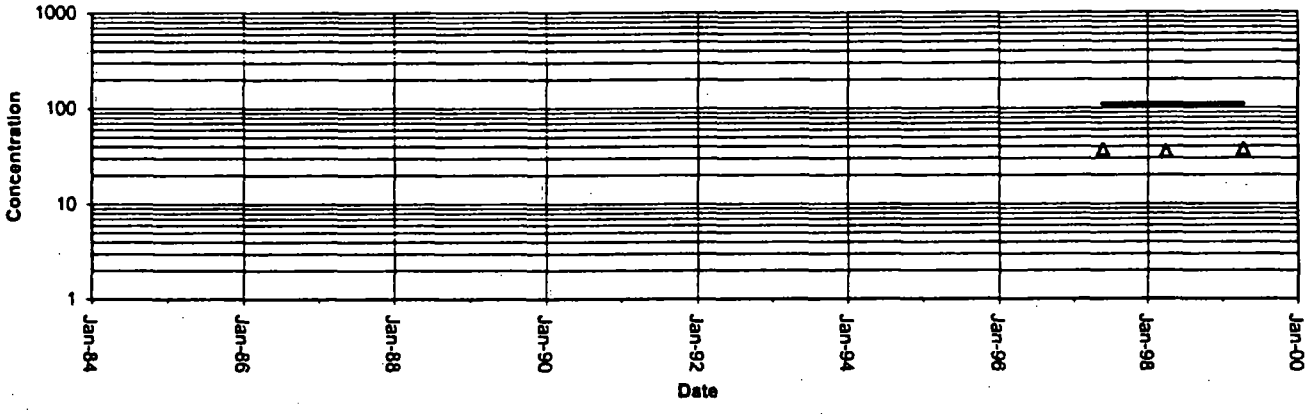
G118R



G119



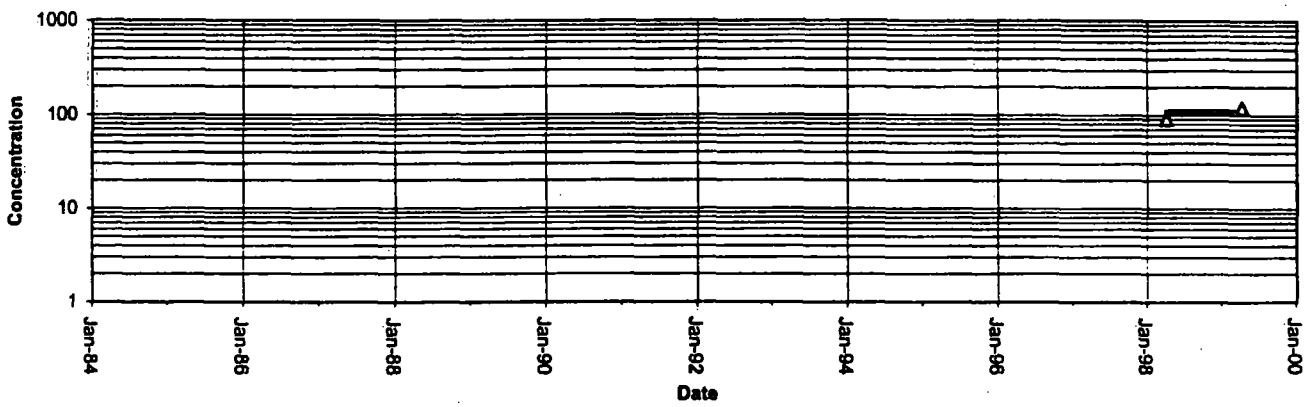
G120B



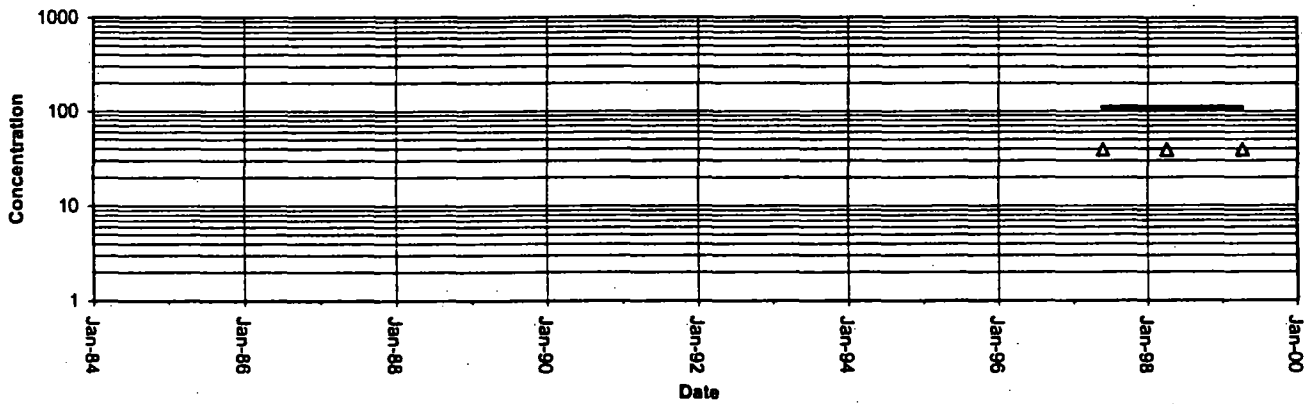
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

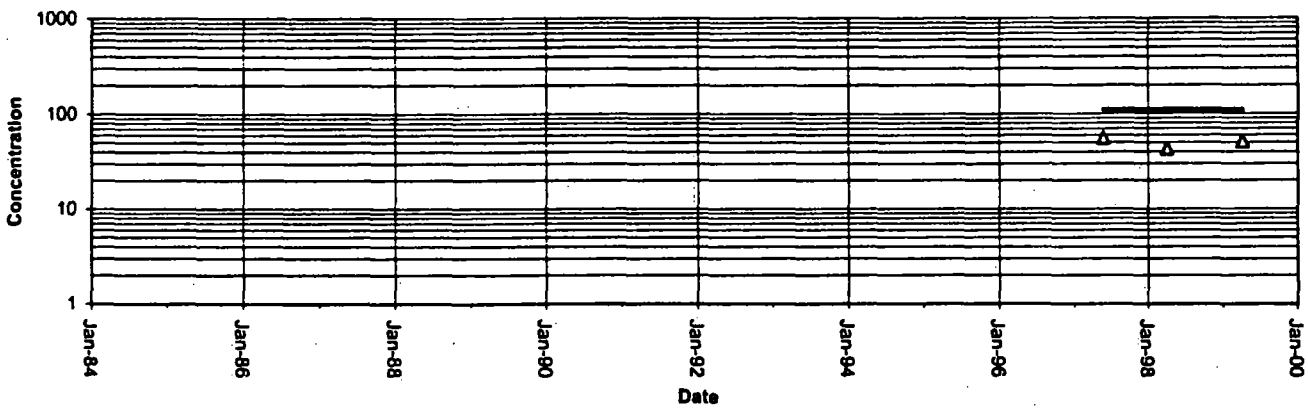
G130



G132



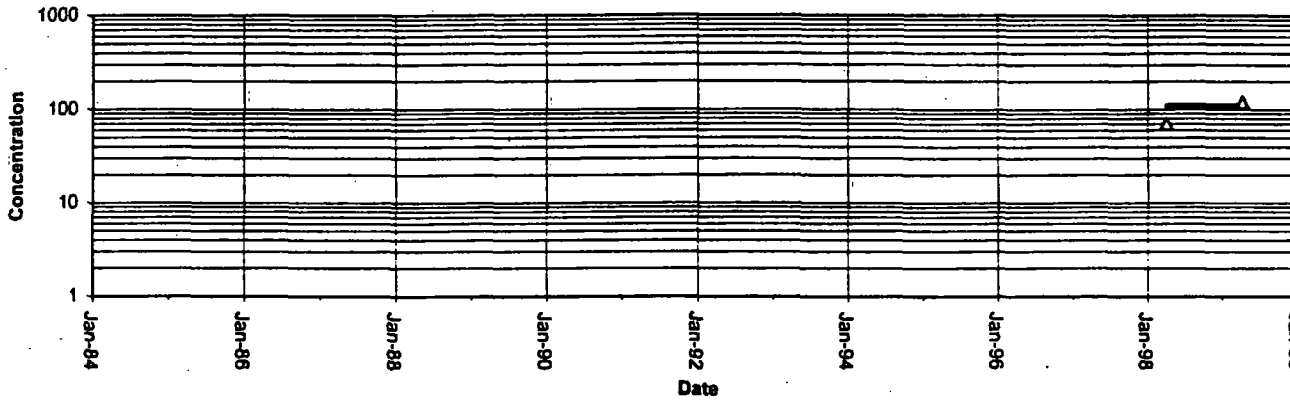
G33D



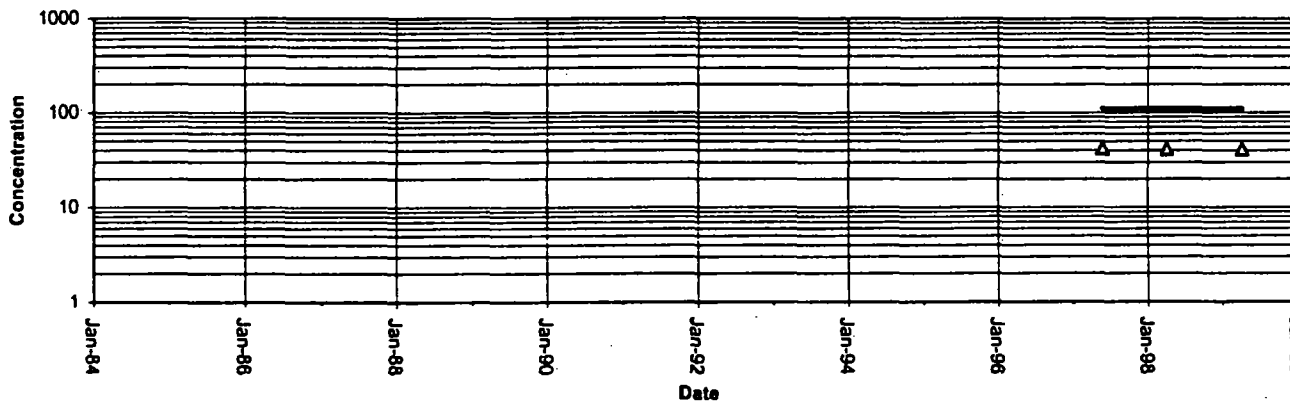
Magnesium (mg/L)

AGQS Concentration NonDetect

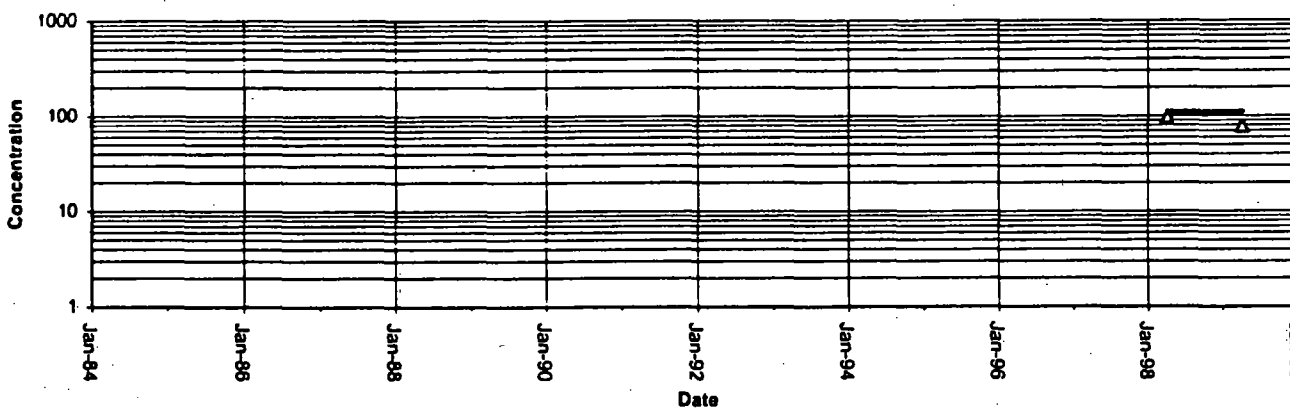
G33S



G34D



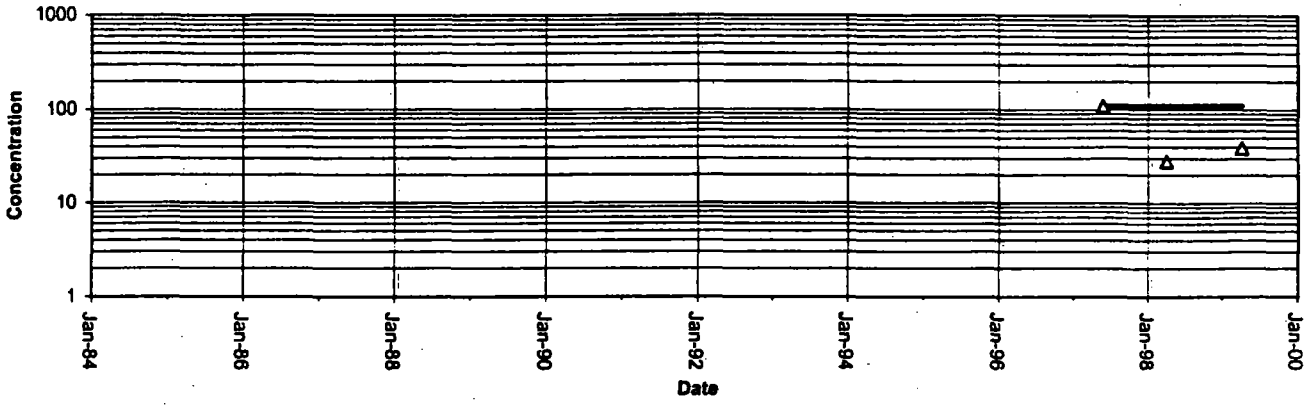
G34S



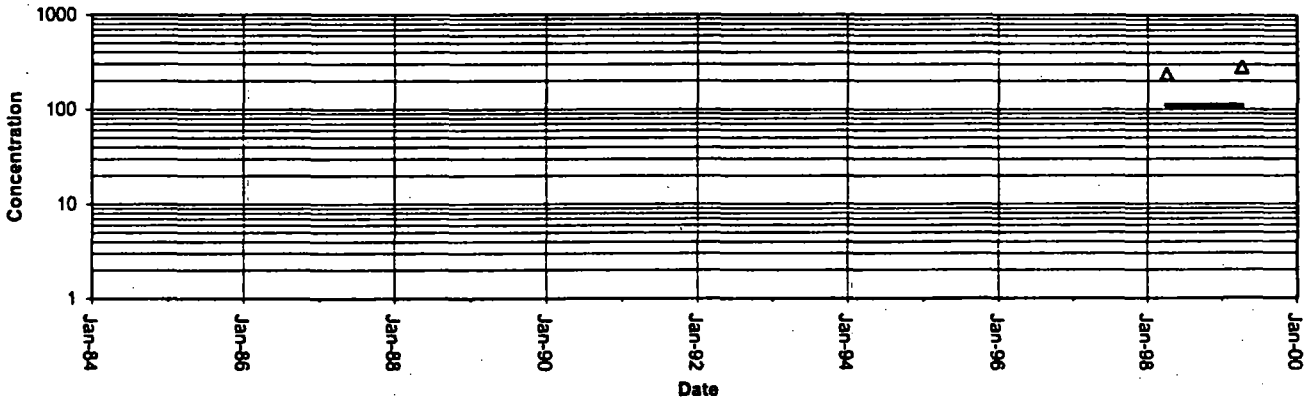
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

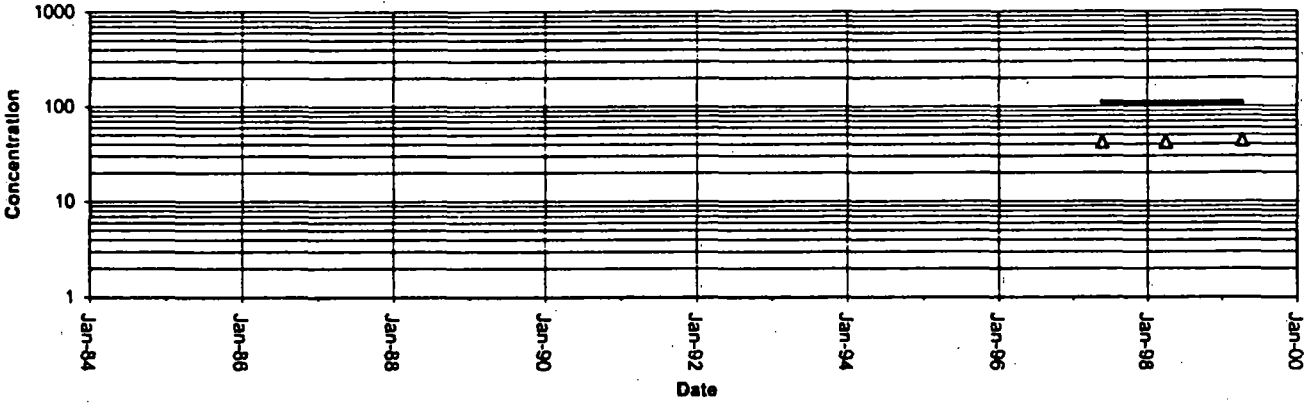
G35D



G35S



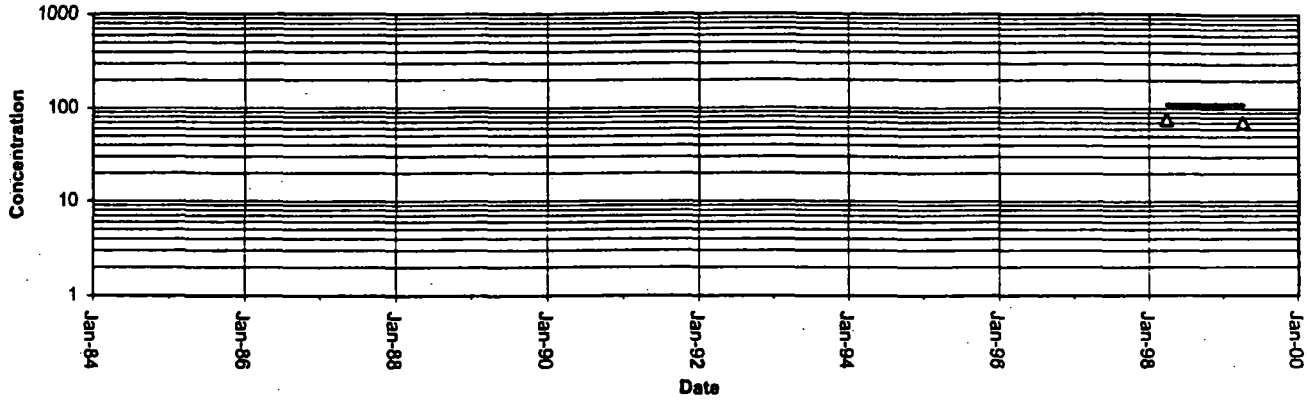
G36



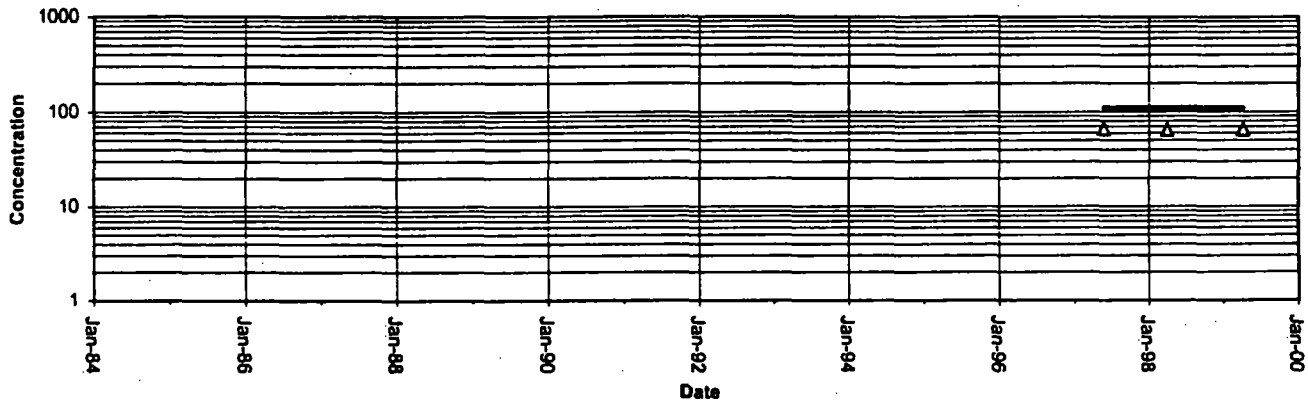
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

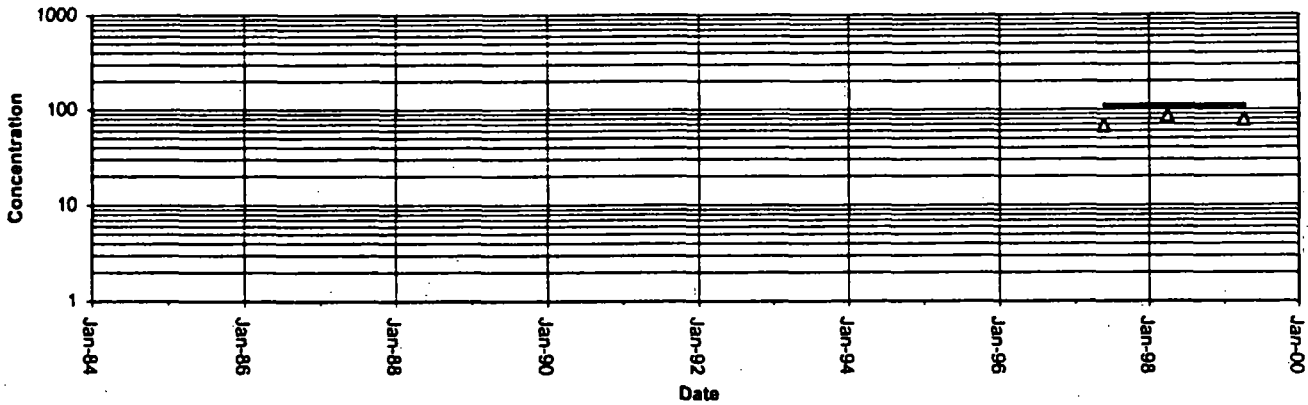
G37D



G37S



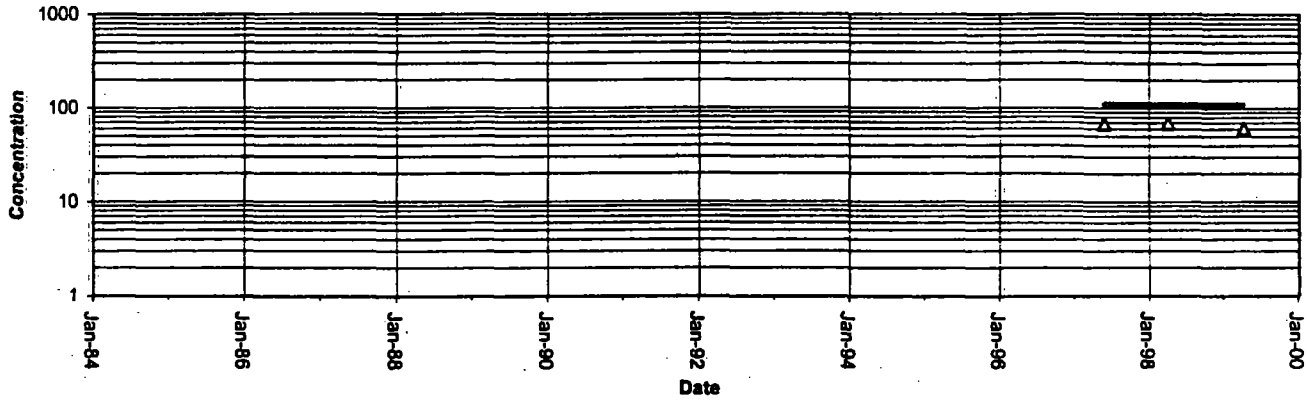
G38



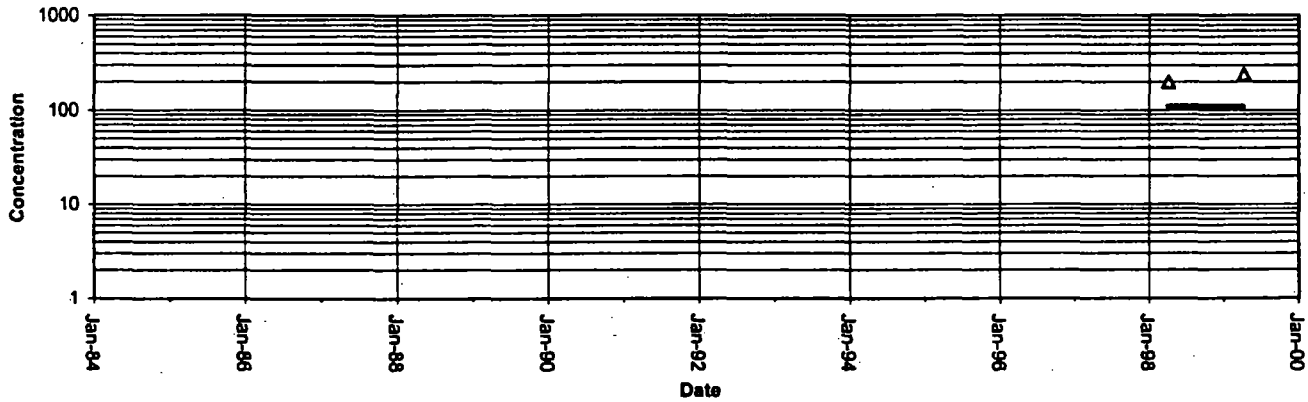
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

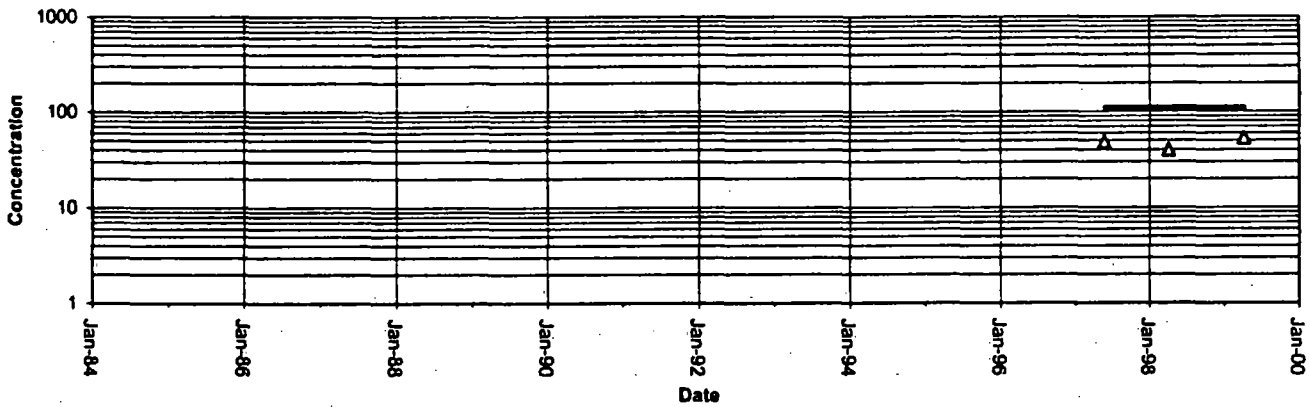
G39



G40



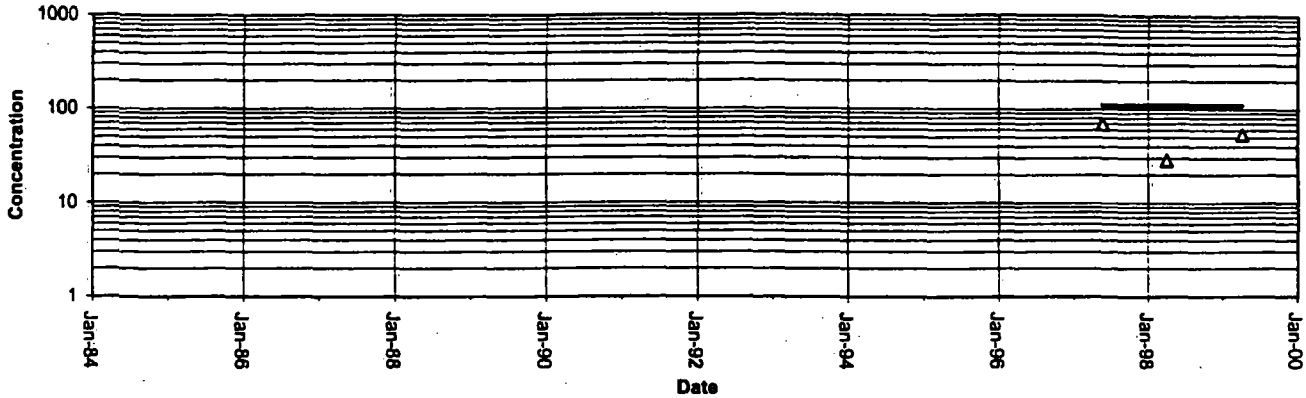
MW106



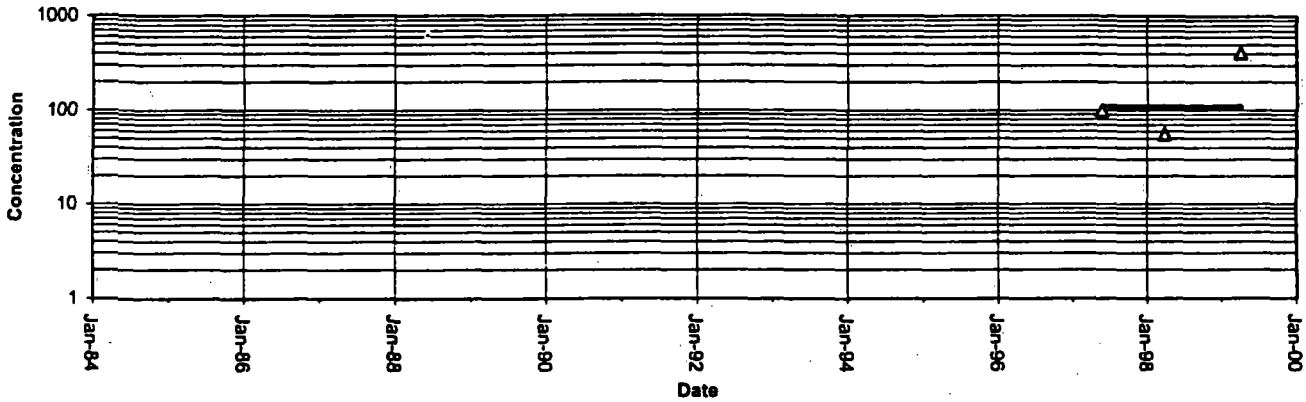
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

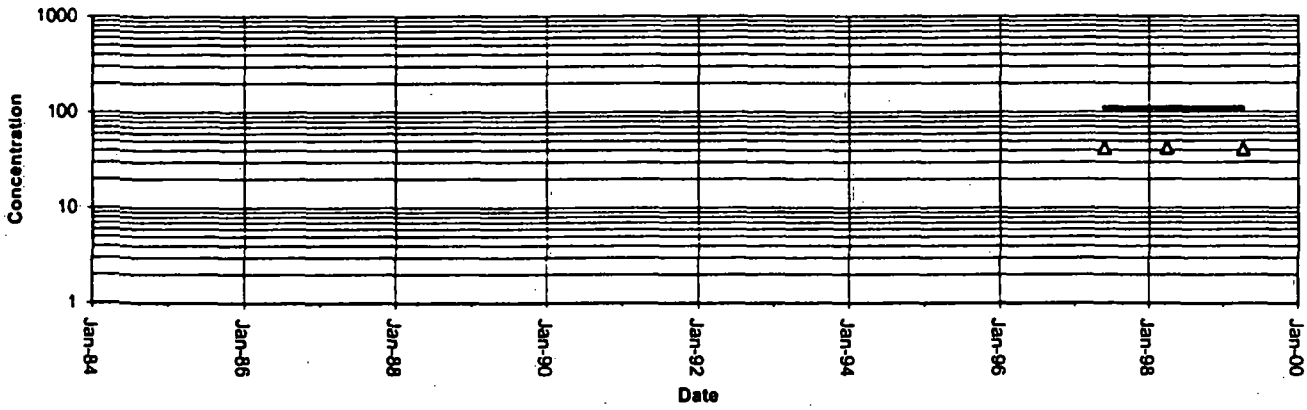
P1



P3R



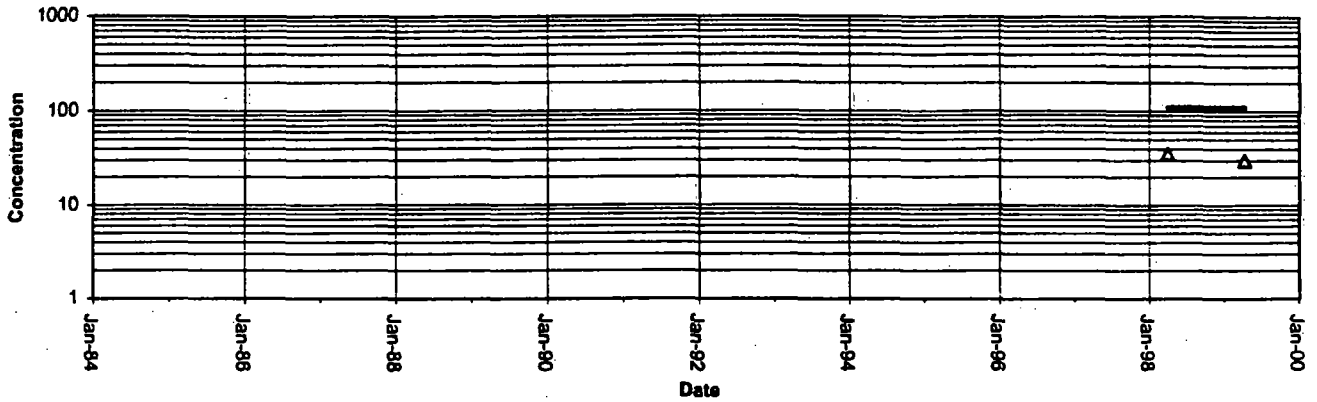
P4R



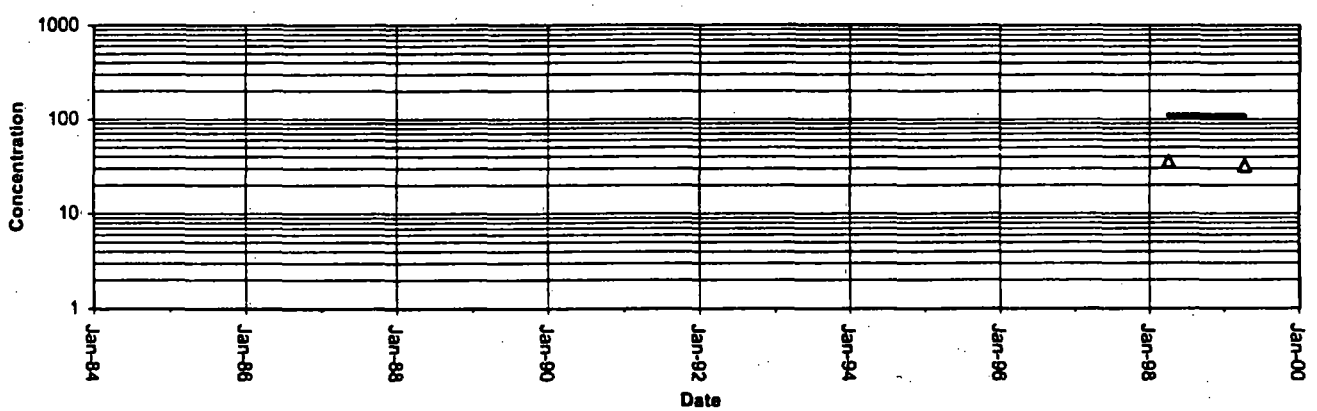
Magnesium (mg/L)

AGQS Δ Concentration O NonDetect

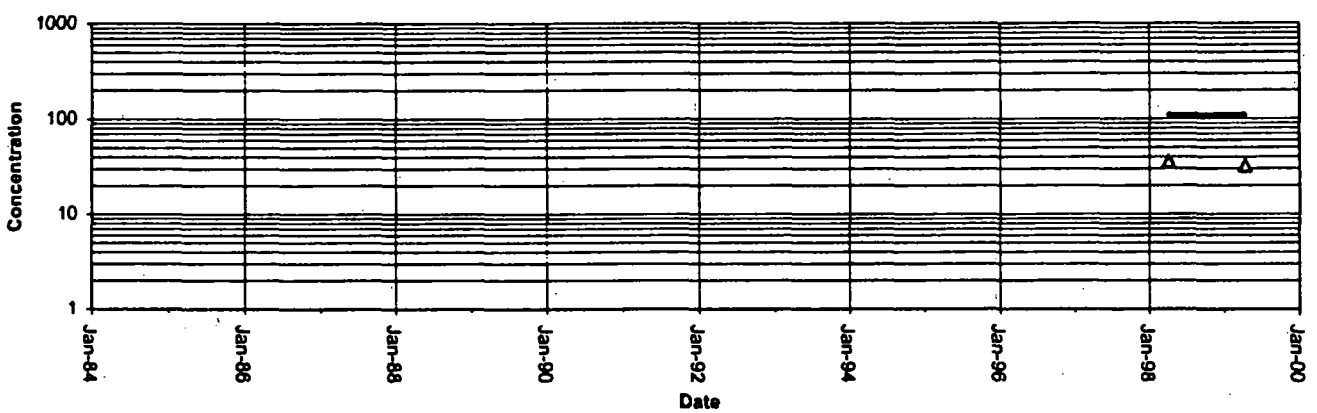
SG1



SG3



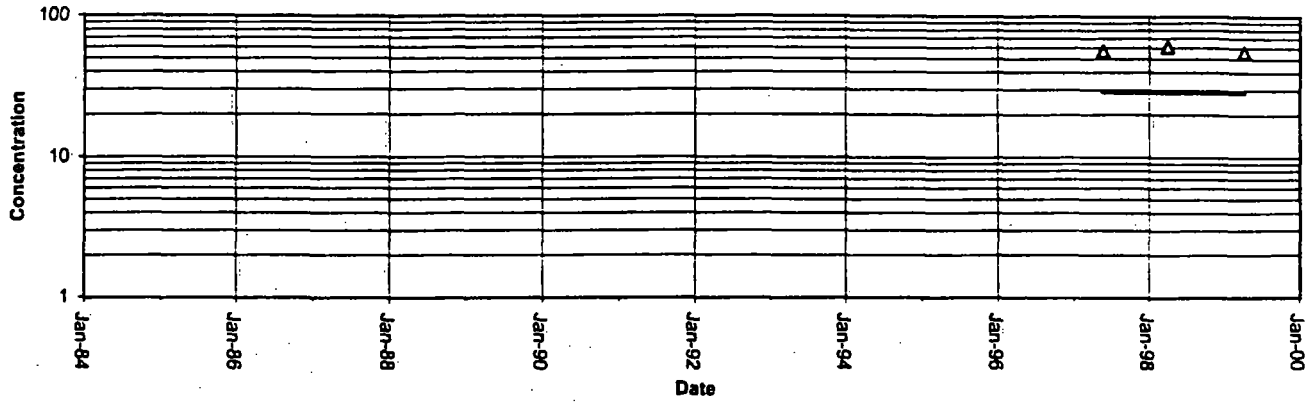
SG4



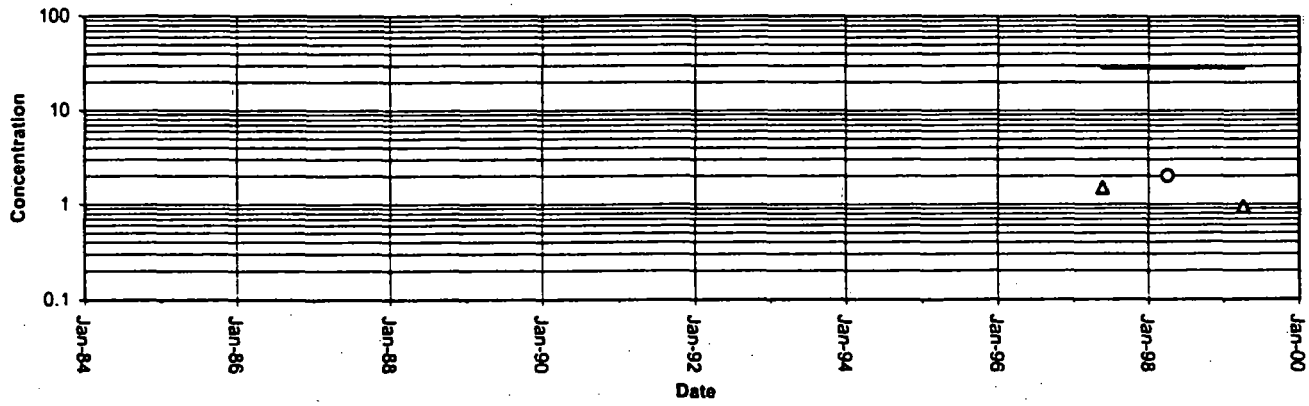
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

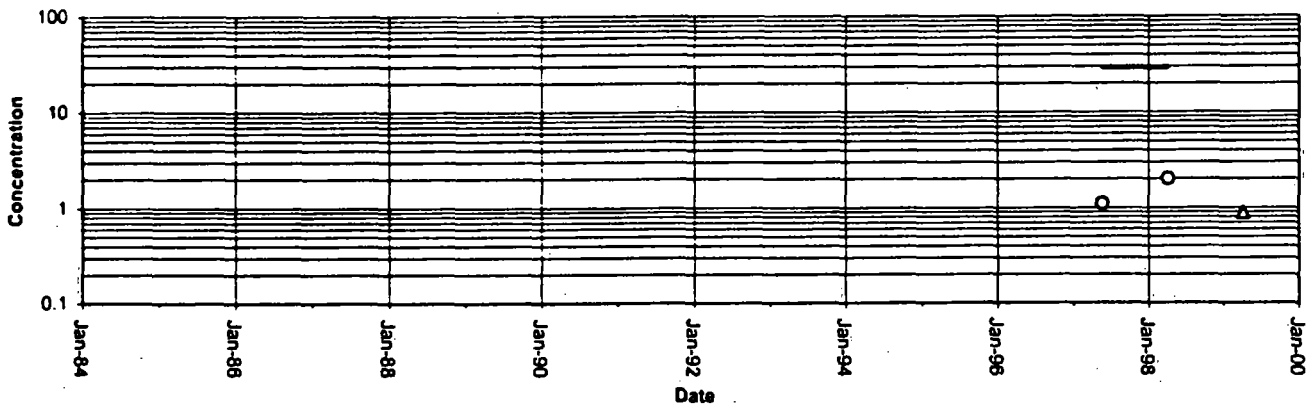
B15R



G109



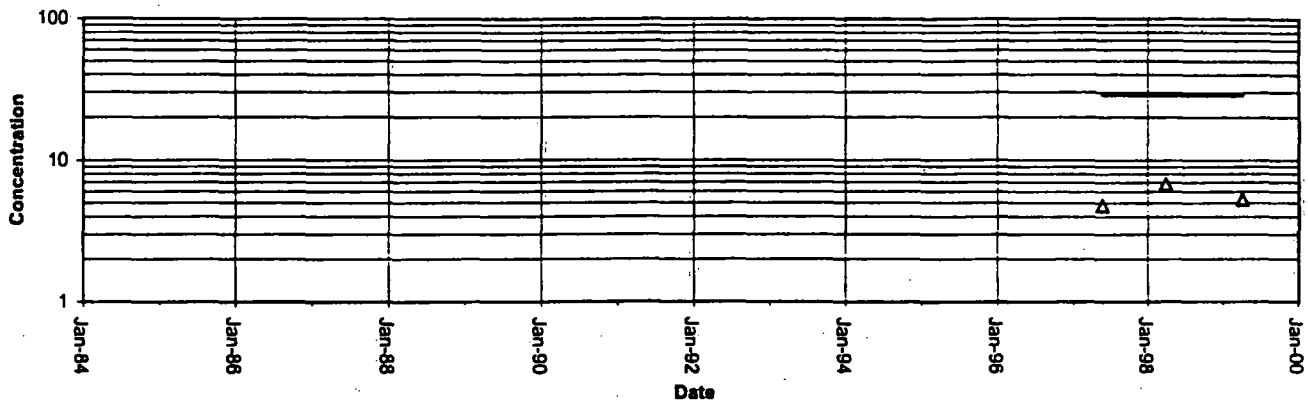
G109A



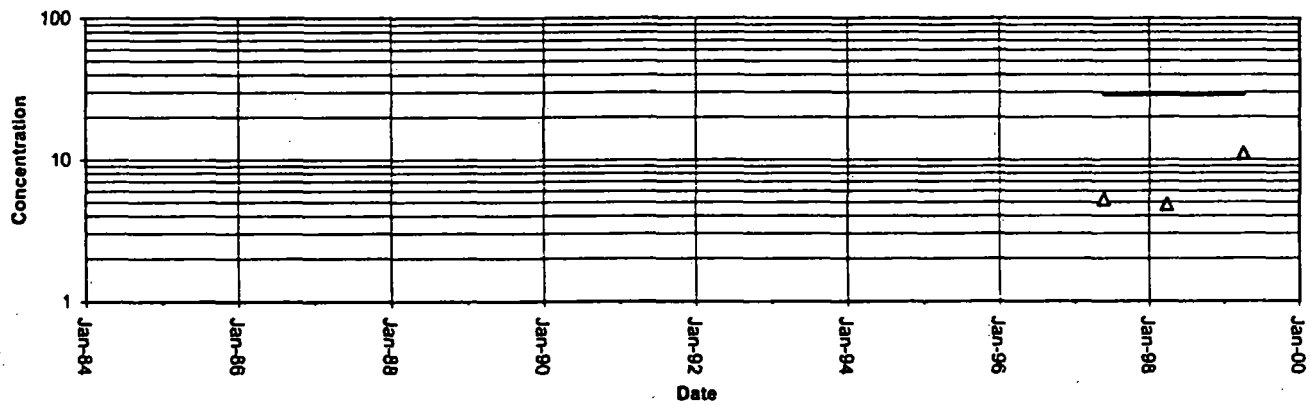
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

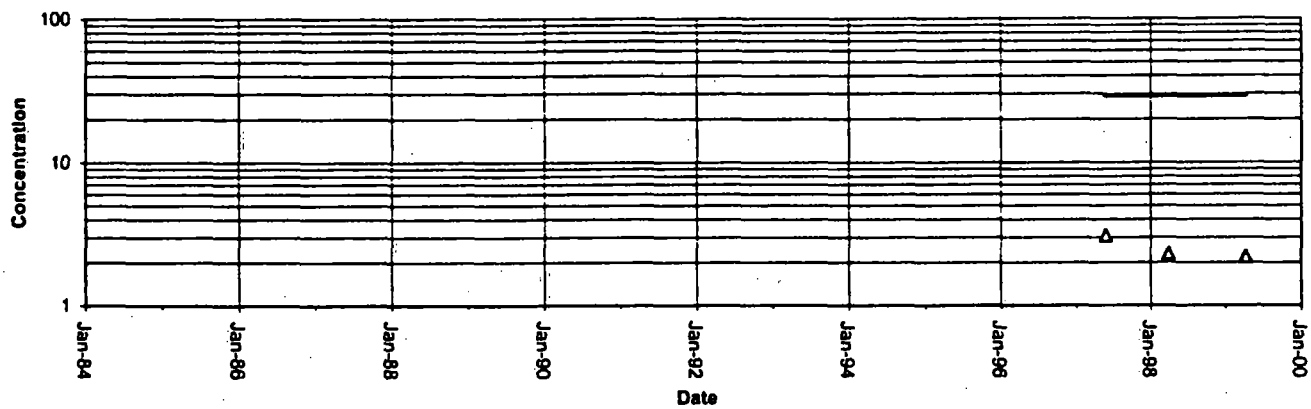
G113



G113A



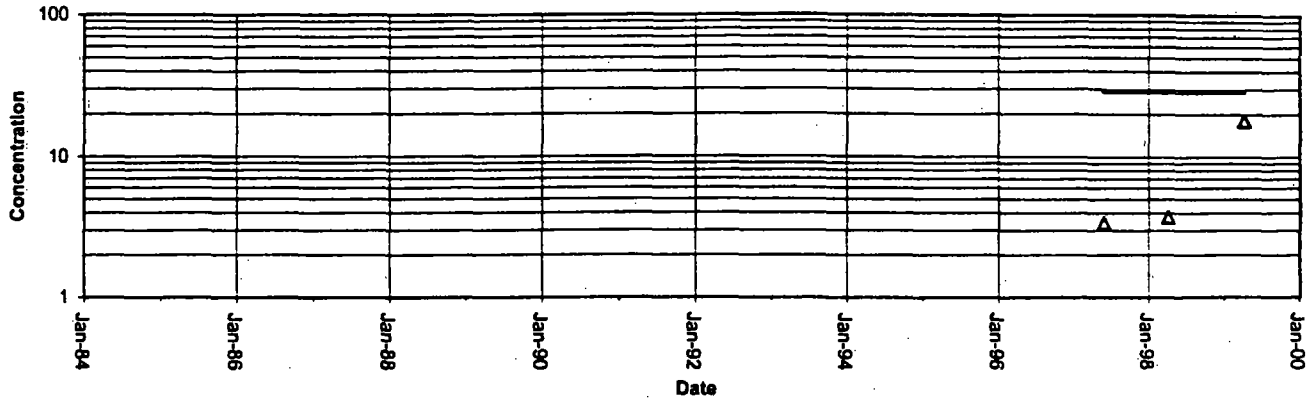
G114



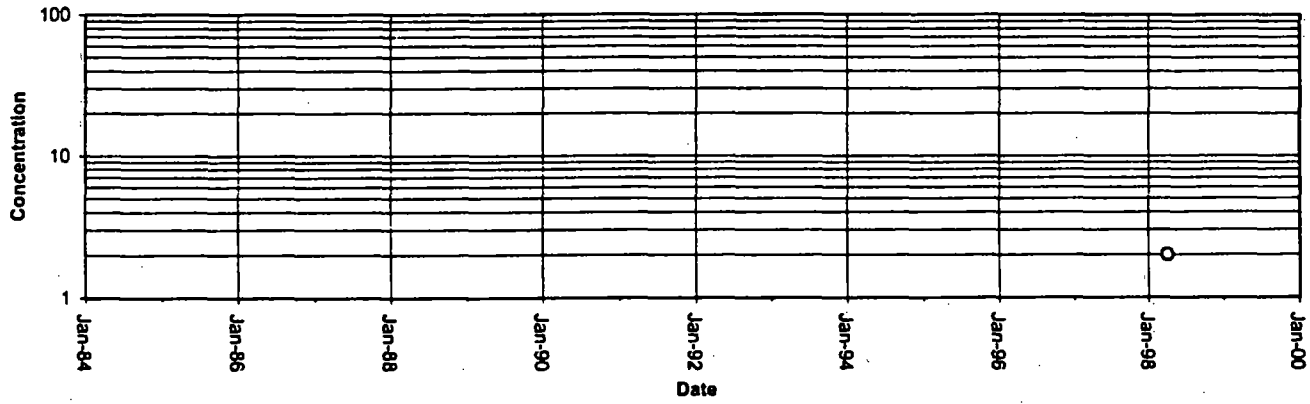
Potassium (mg/L)

AGQS Concentration NonDetect

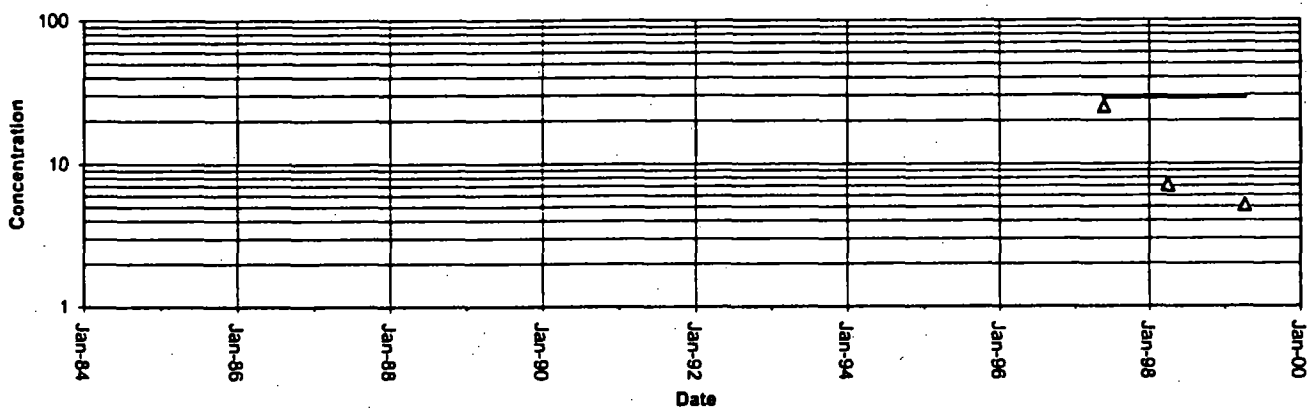
G115



G116



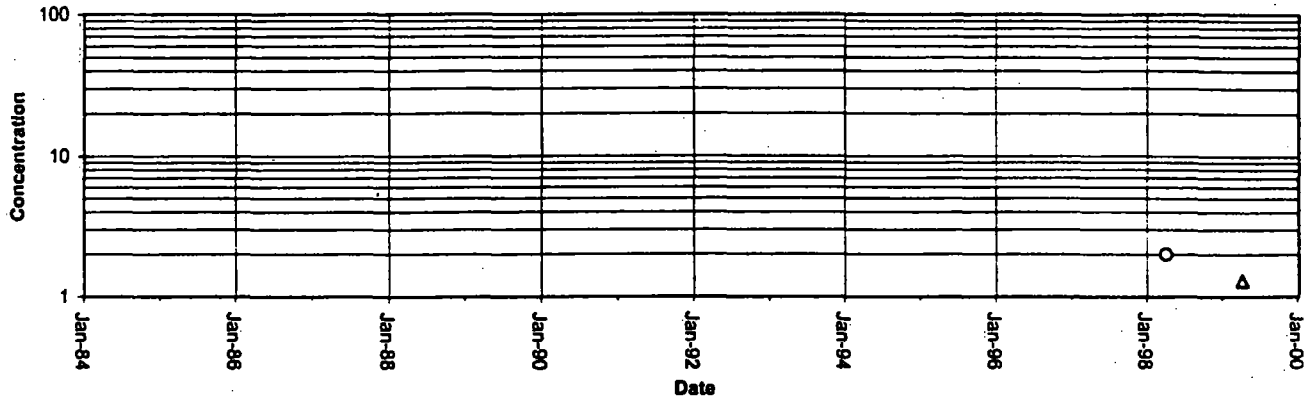
G116A



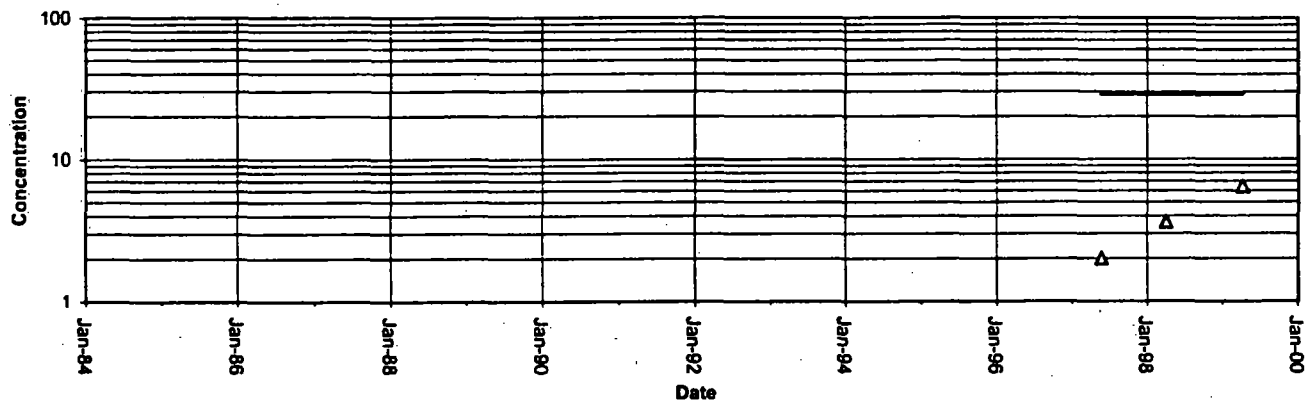
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

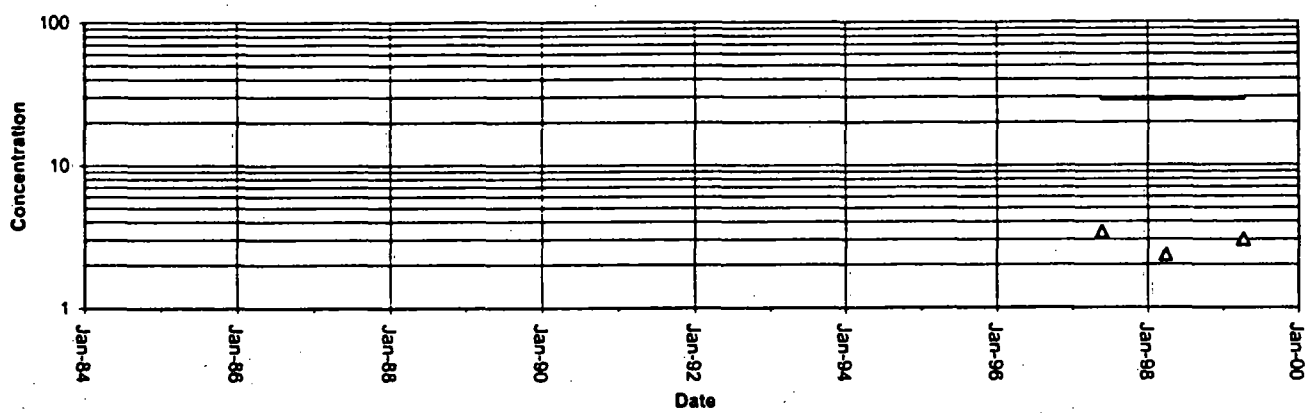
G116D



G117



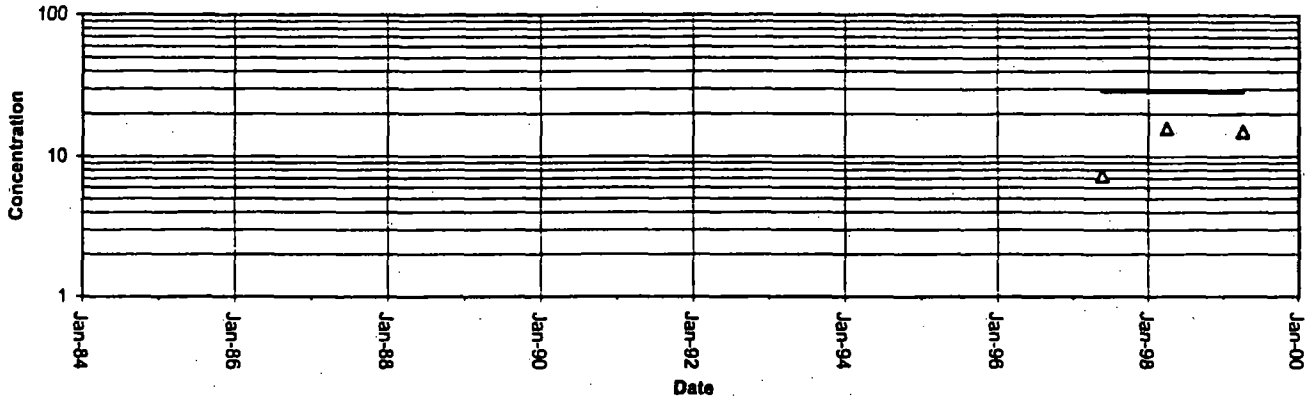
G118A



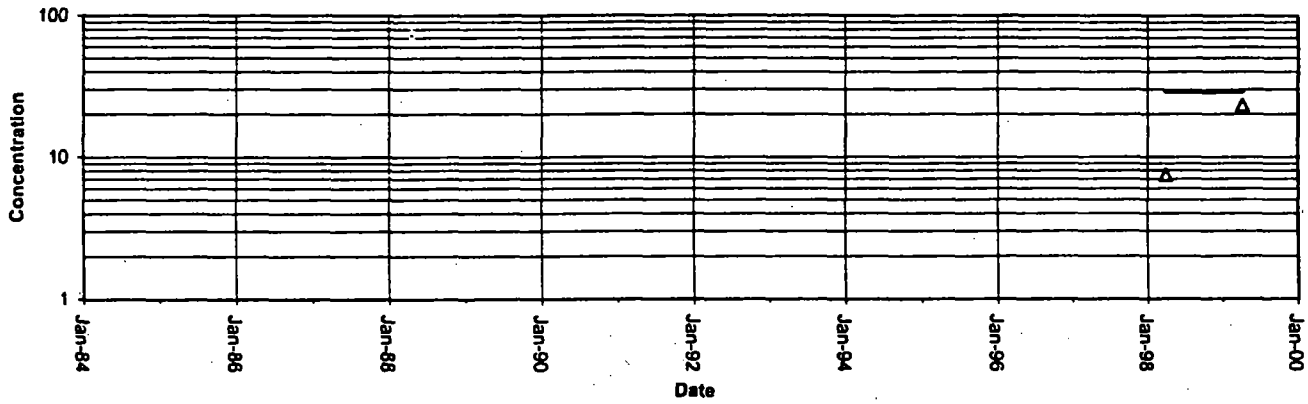
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

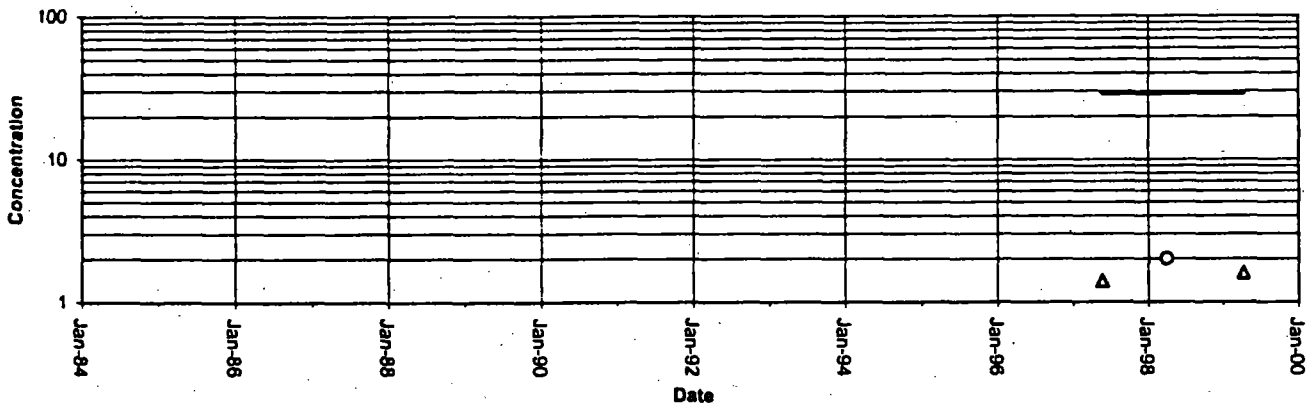
G118R



G119



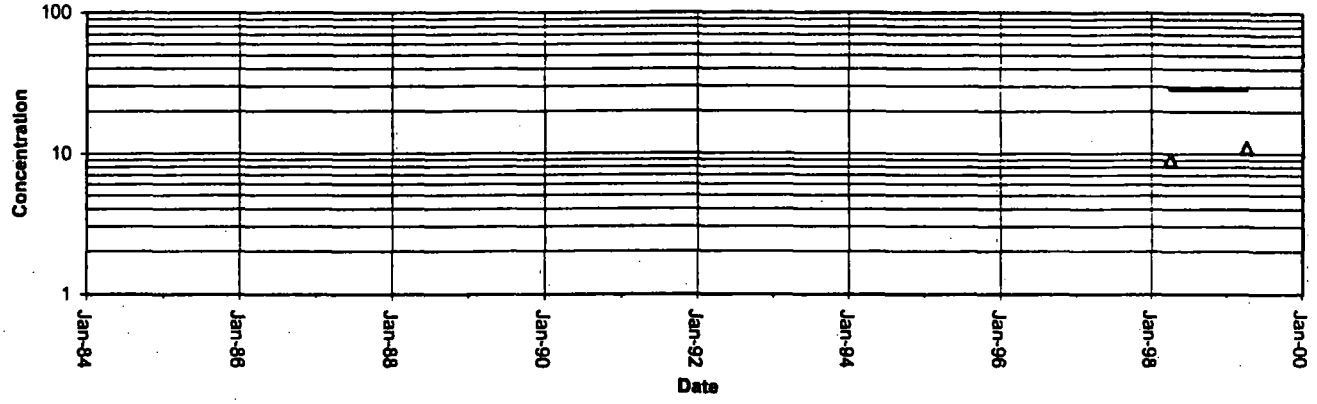
G120B



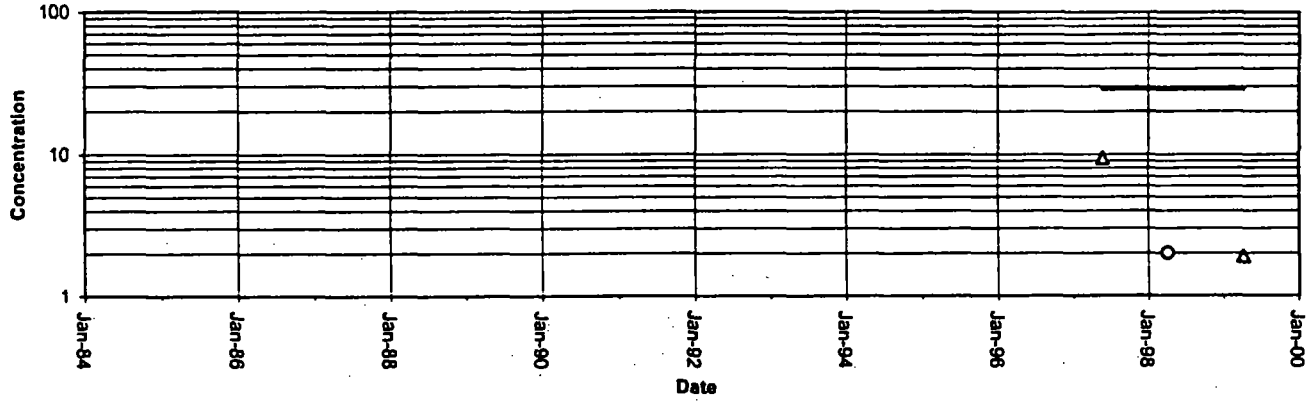
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

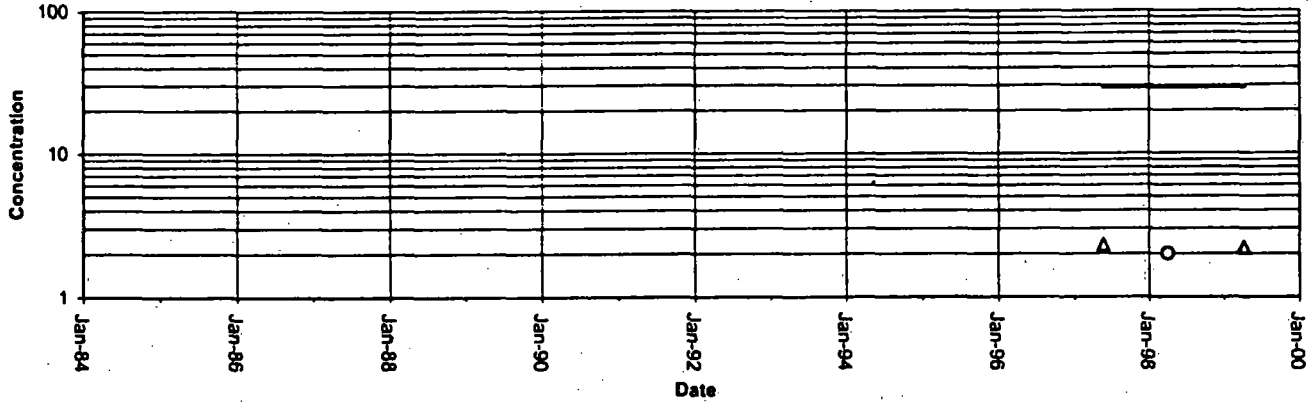
G130



G132



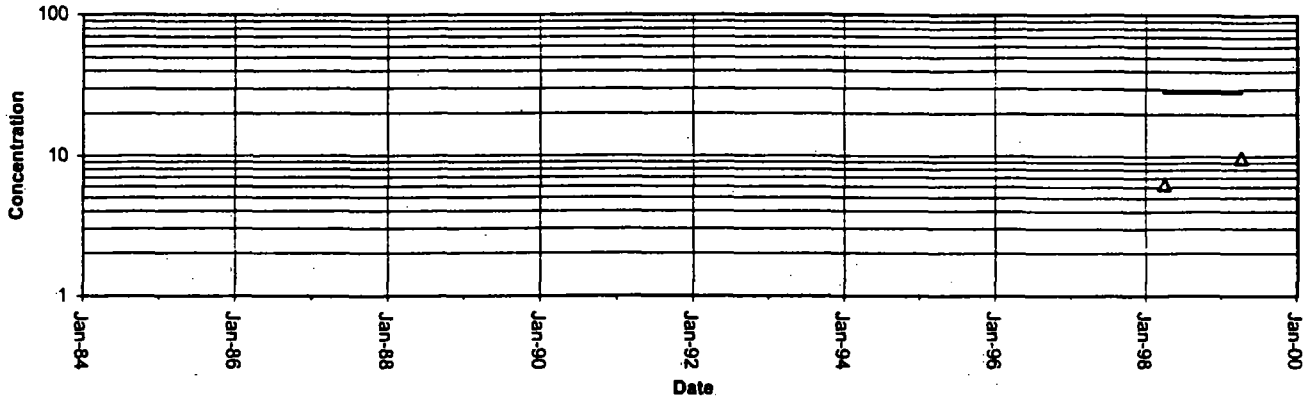
G33D



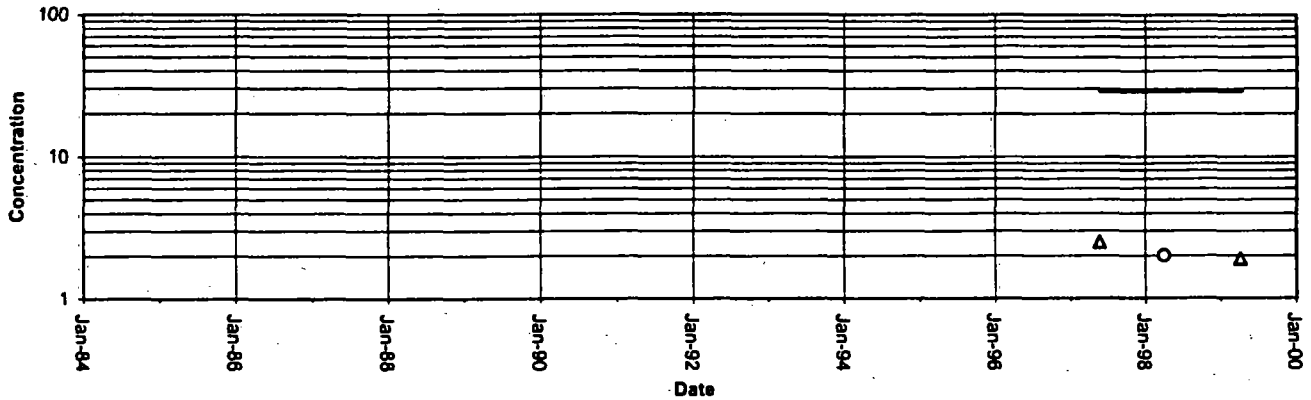
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

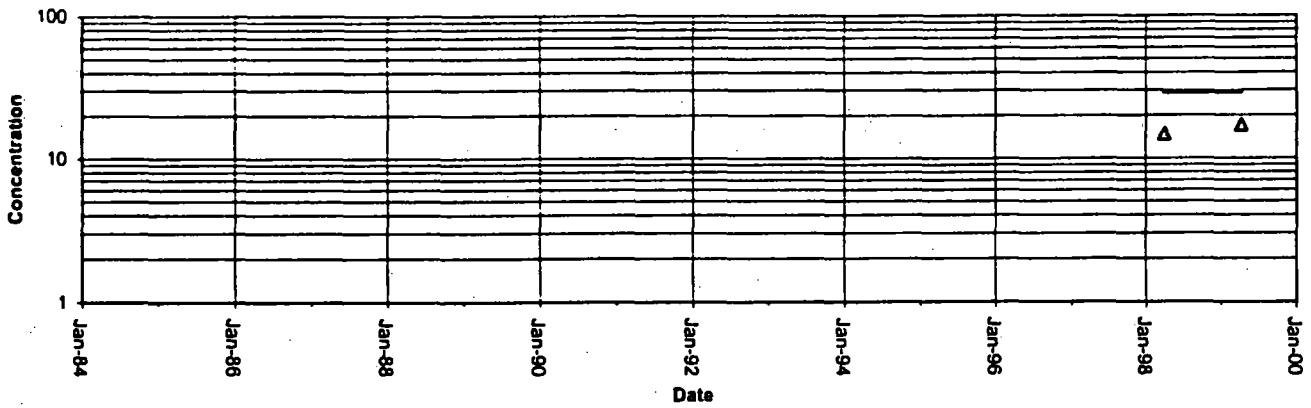
G33S



G34D



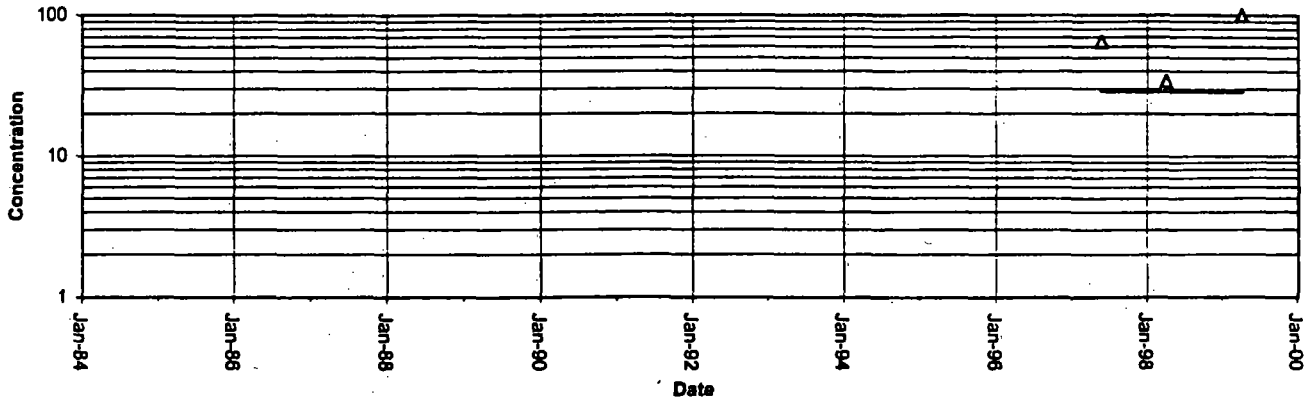
G34S



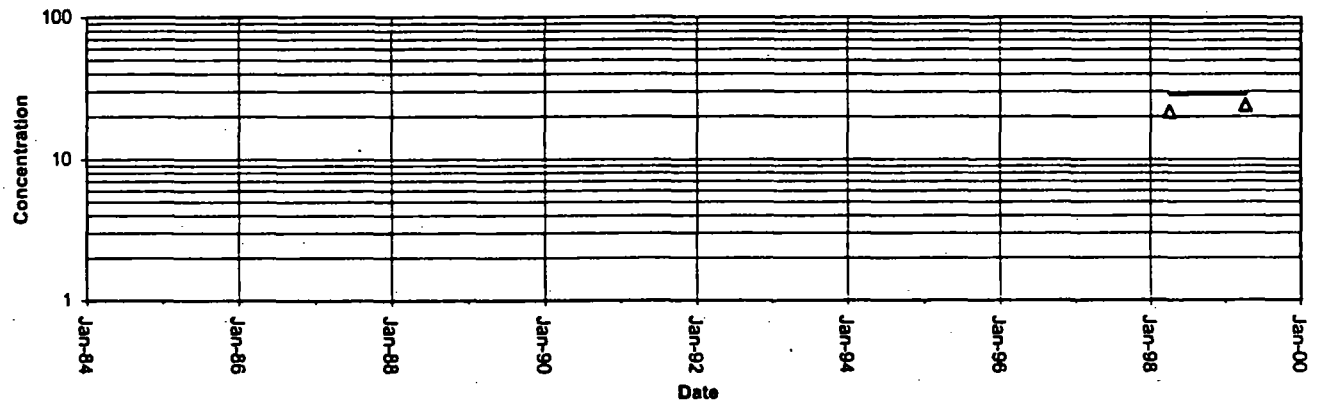
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

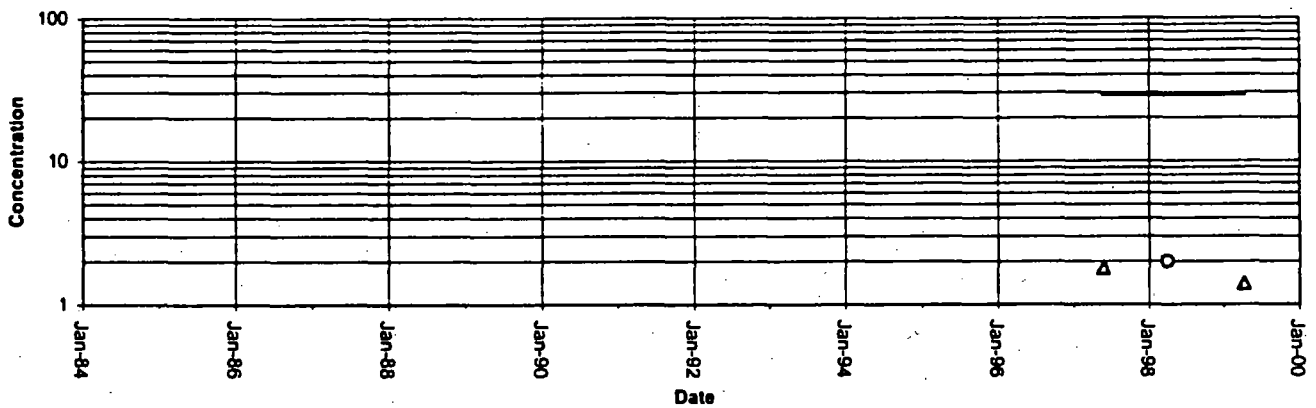
G35D



G35S



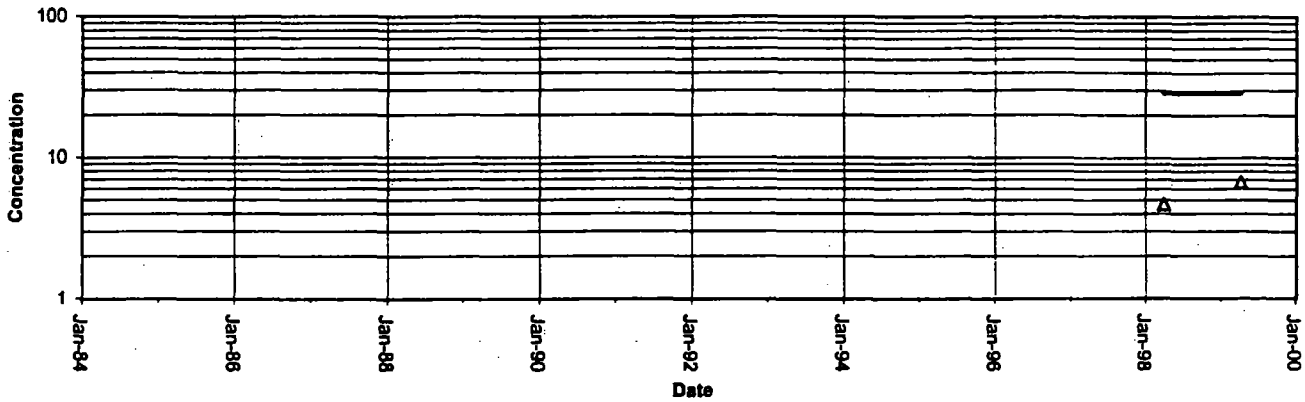
G36



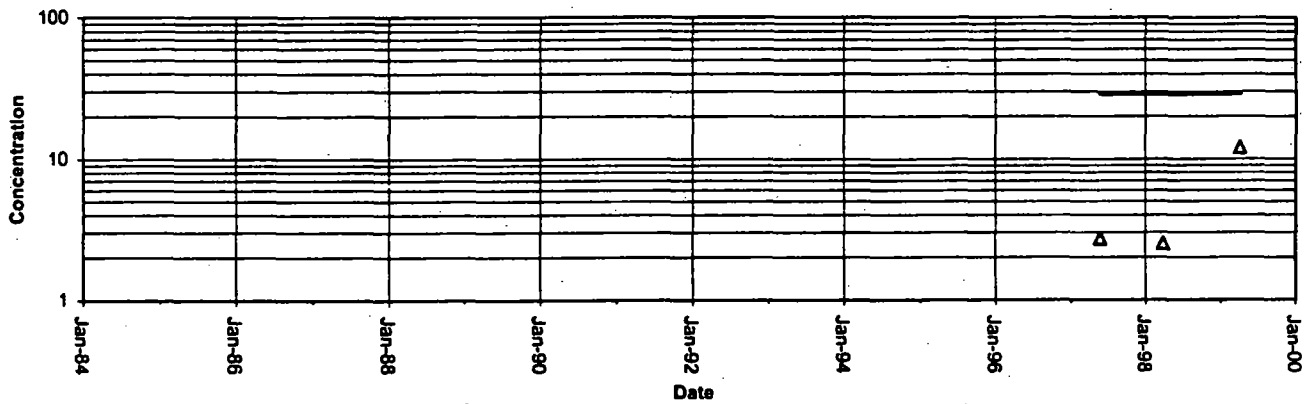
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

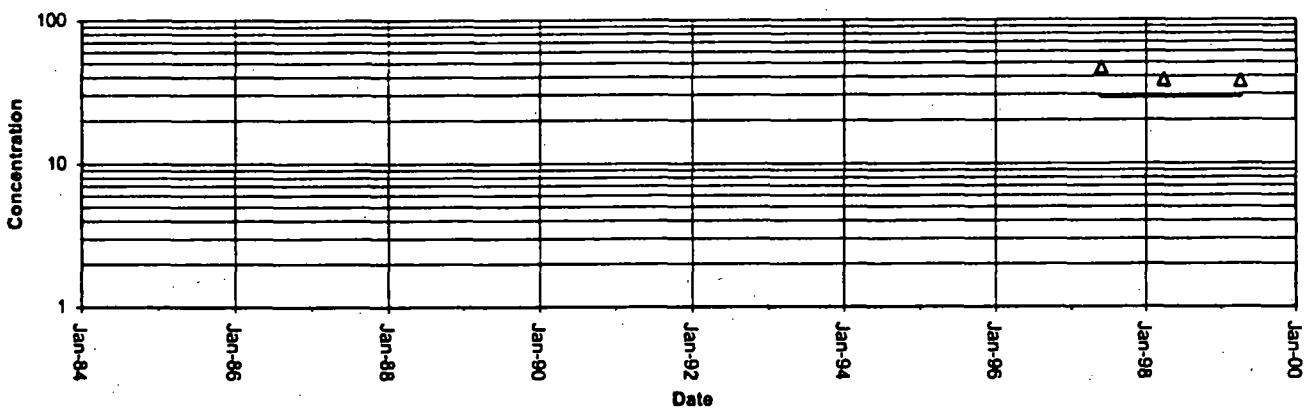
G37D



G37S



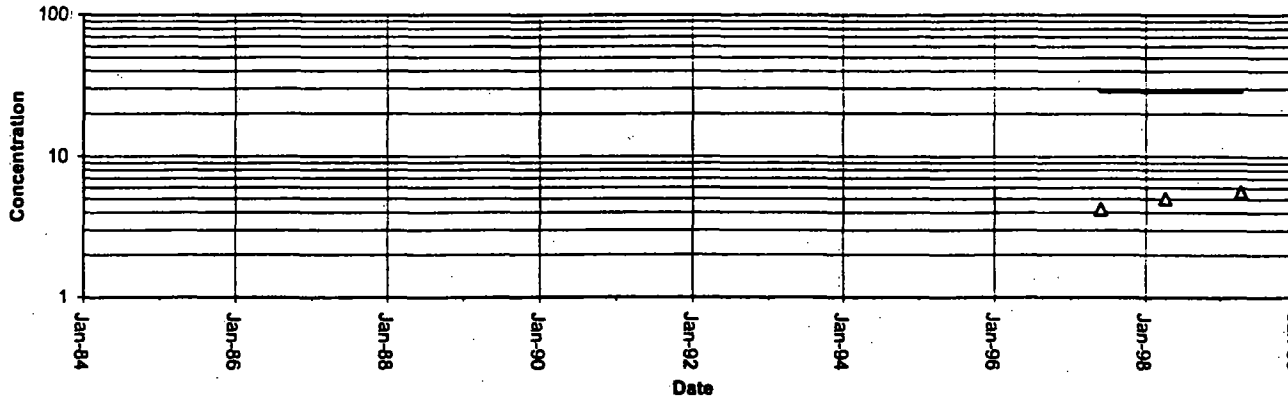
G38



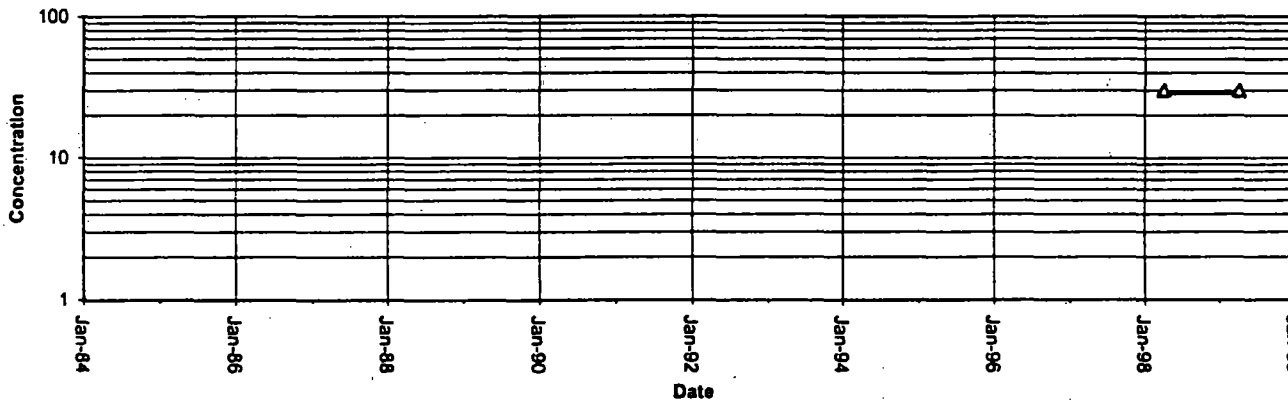
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

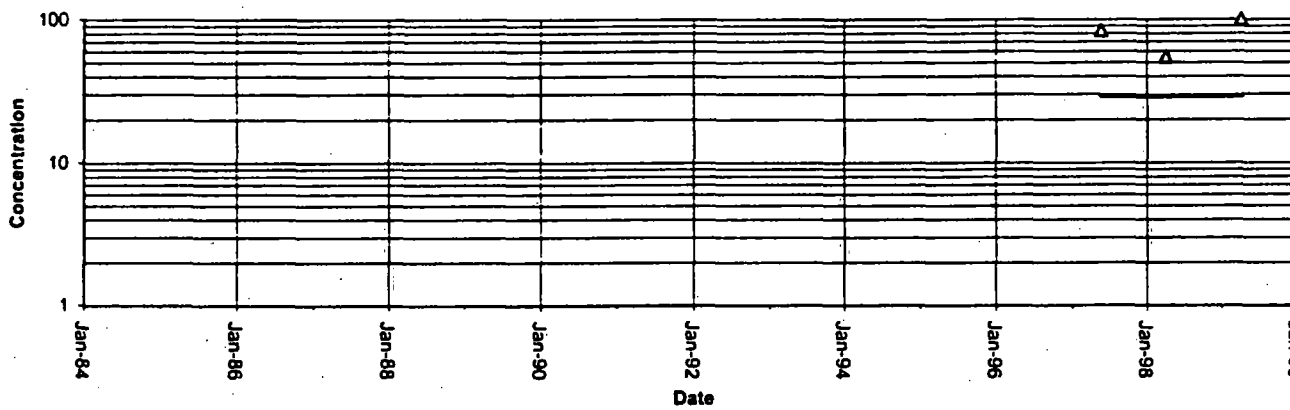
G39



G40



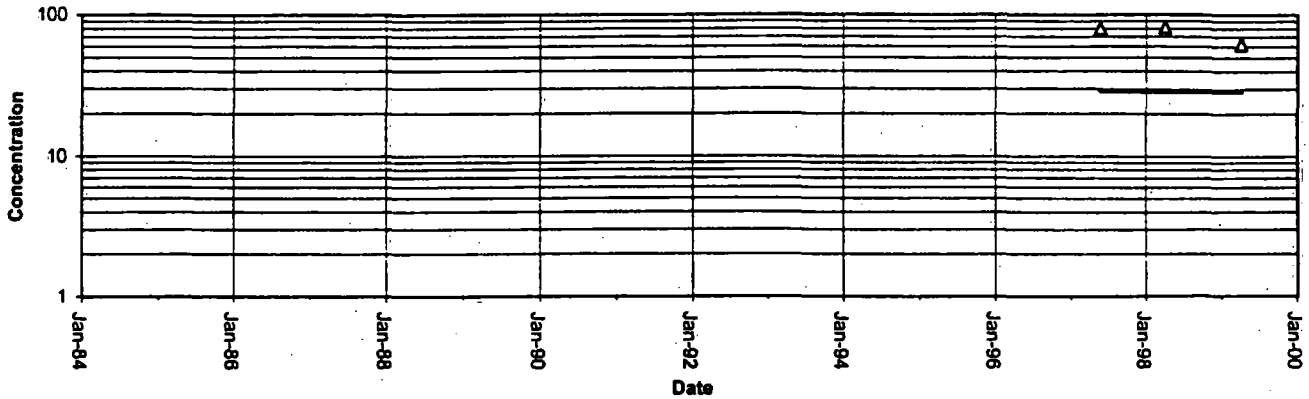
MW106



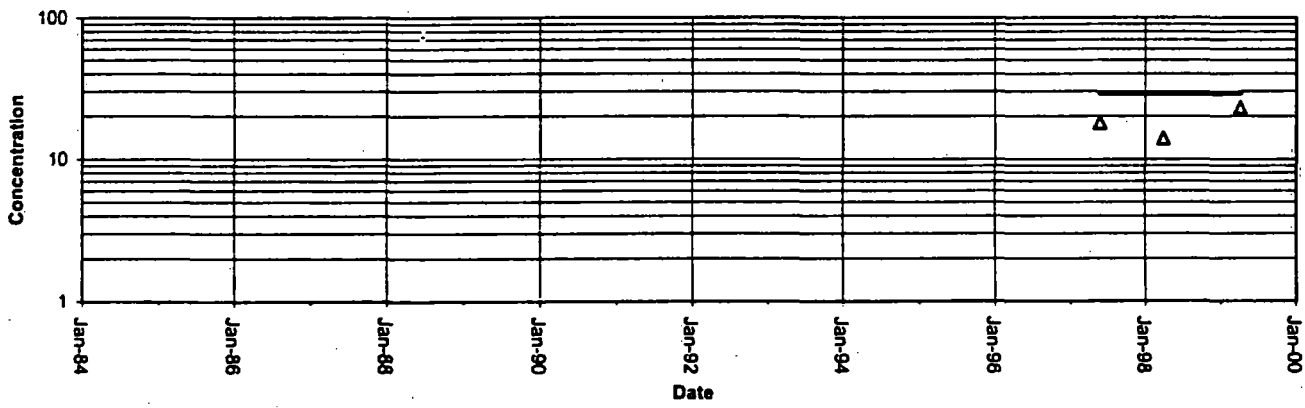
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

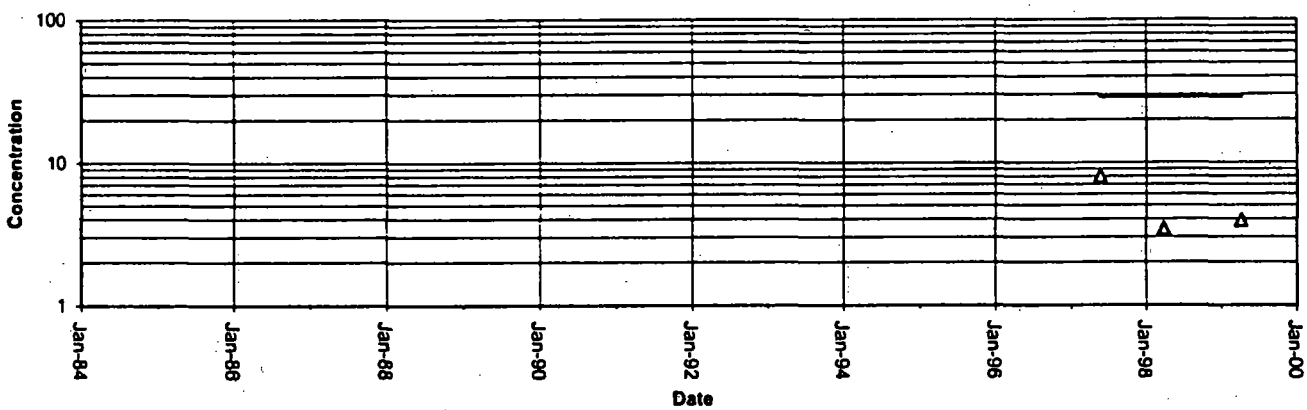
P1



P3R



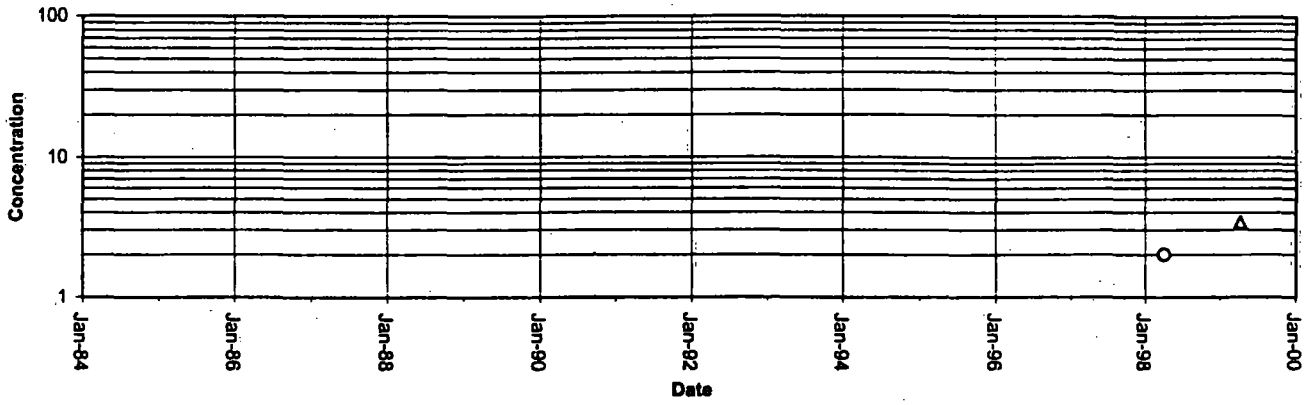
P4R



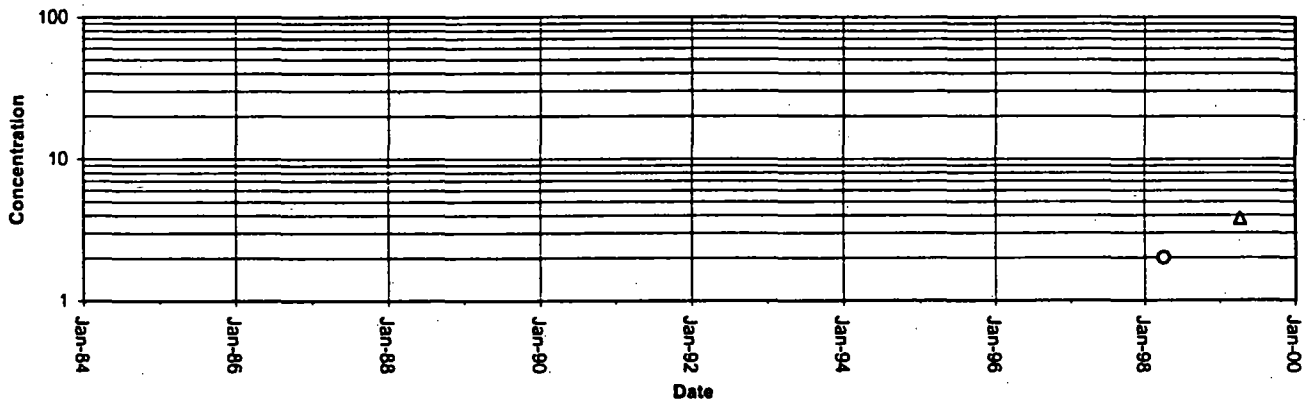
Potassium (mg/L)

AGQS Δ Concentration O NonDetect

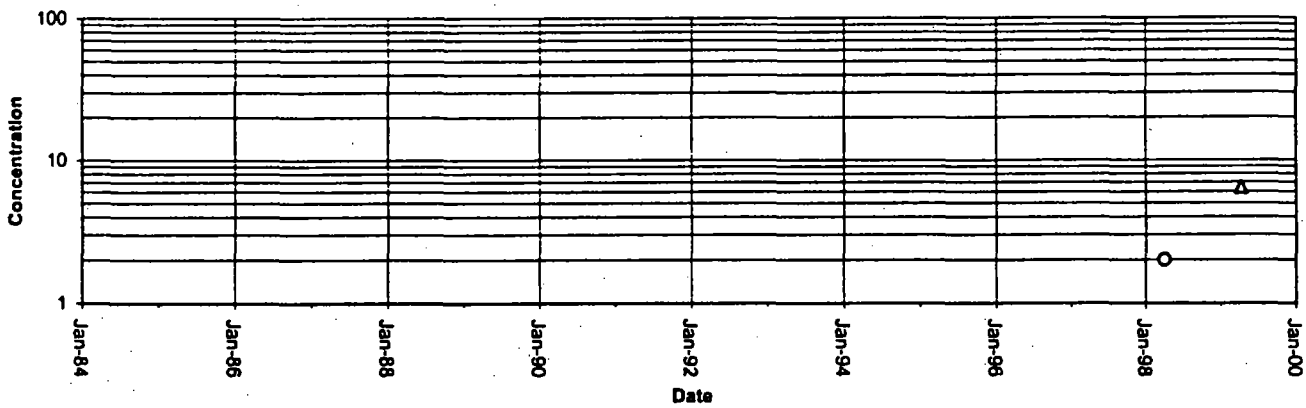
SG1



SG3



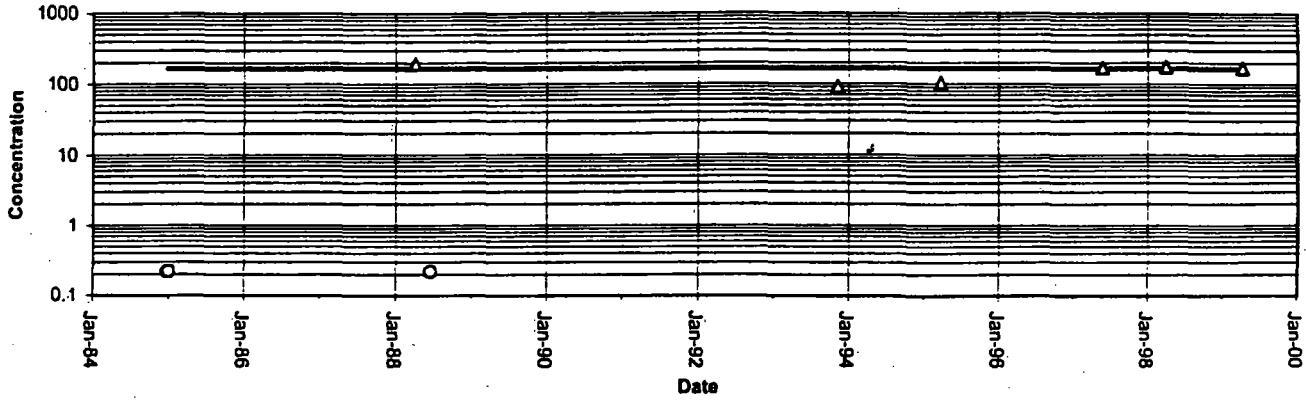
SG4



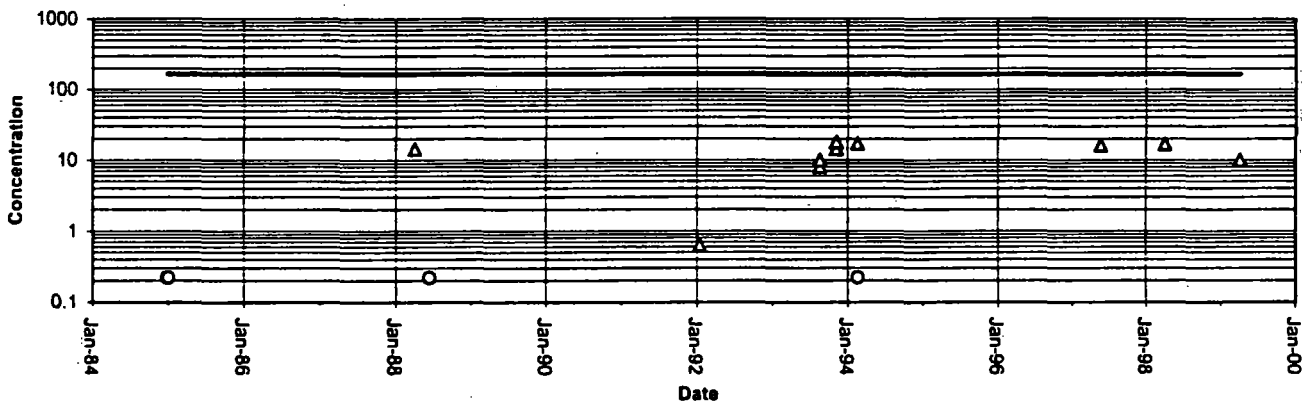
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

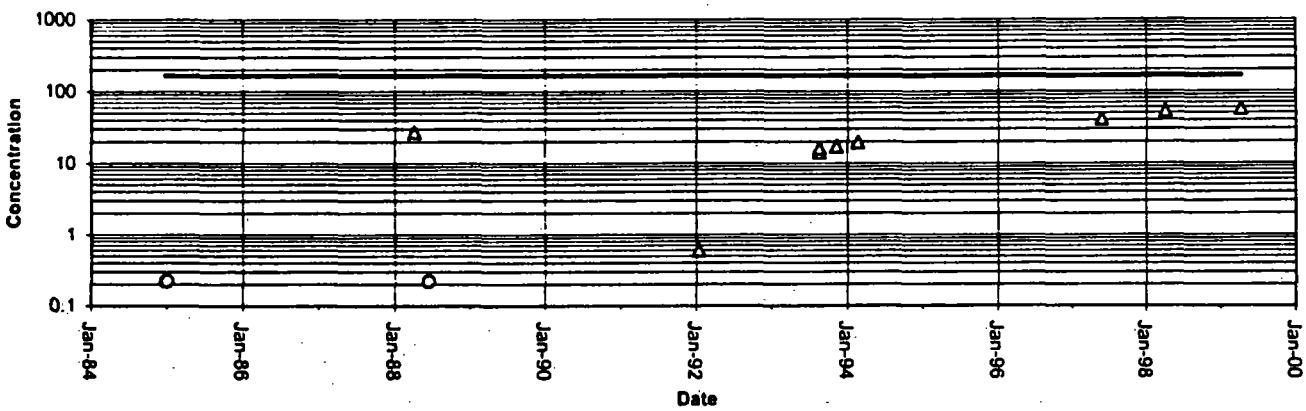
B15R



G109



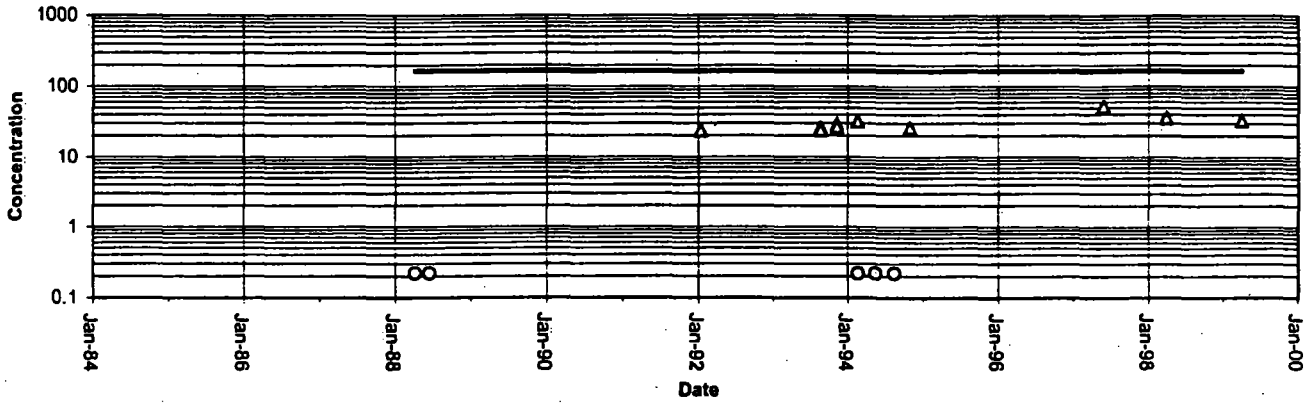
G109A



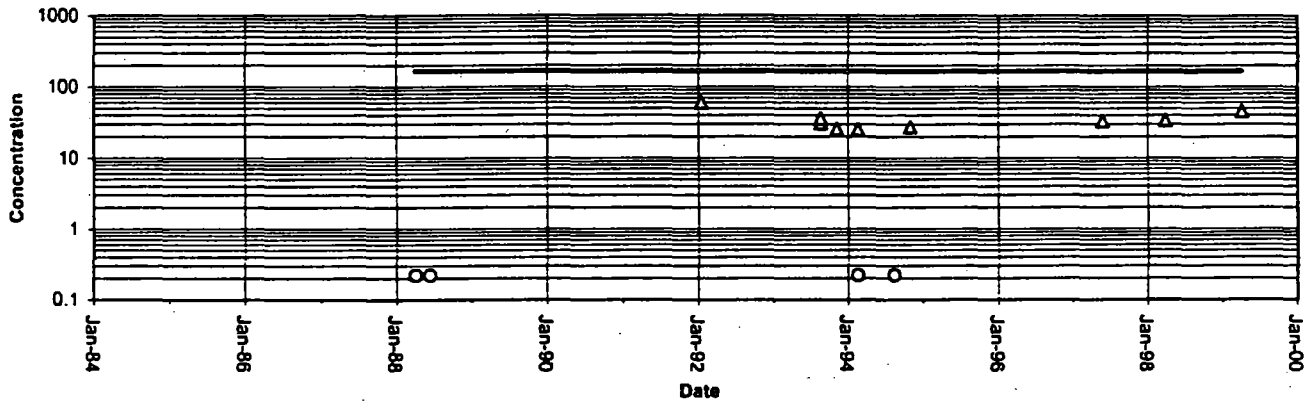
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

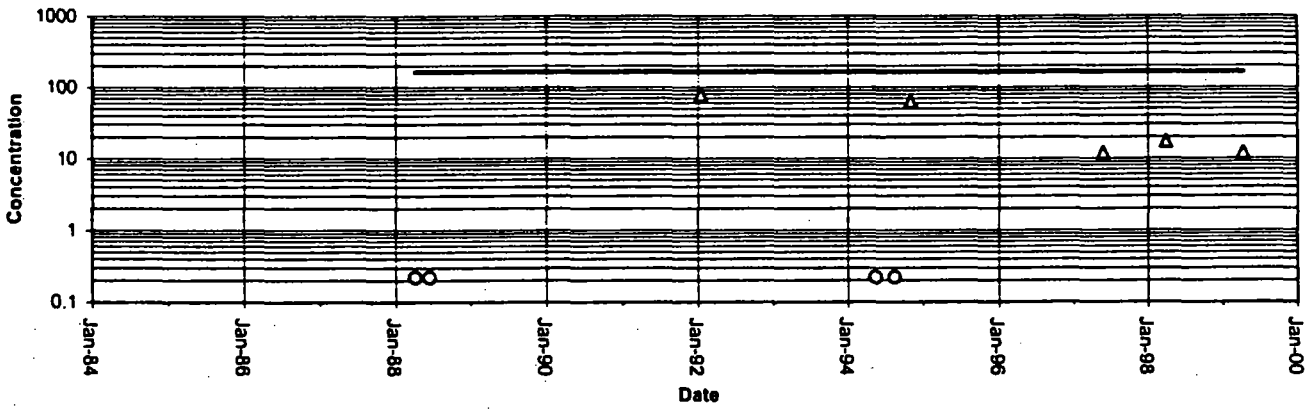
G113



G113A



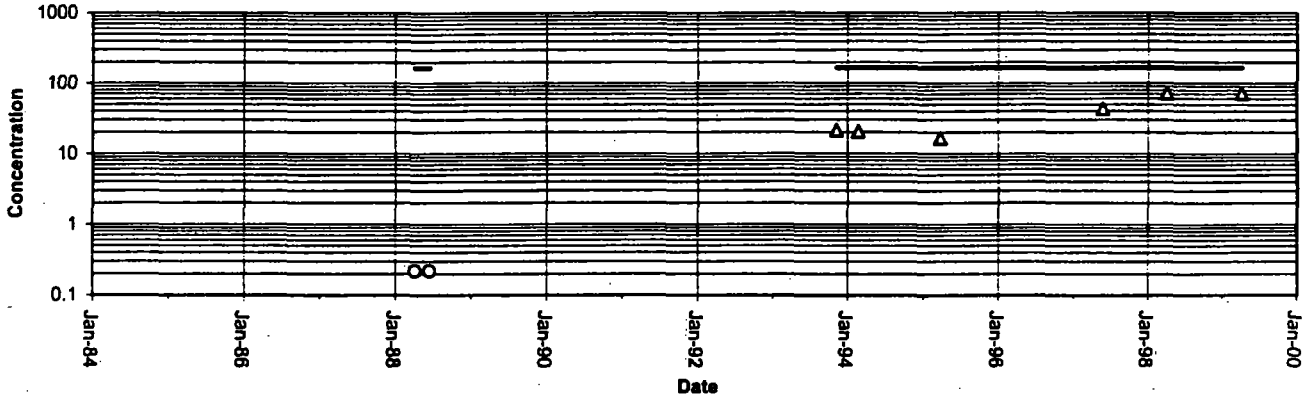
G114



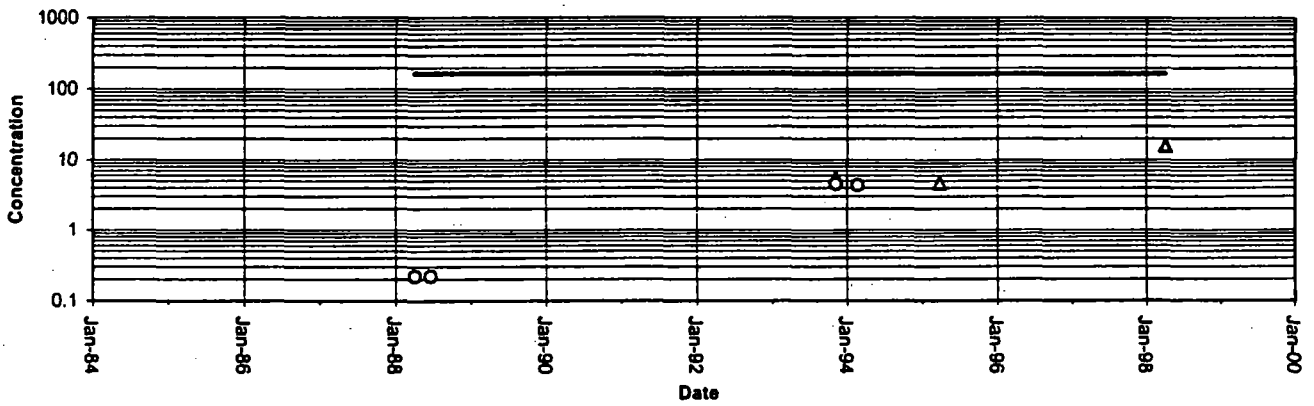
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

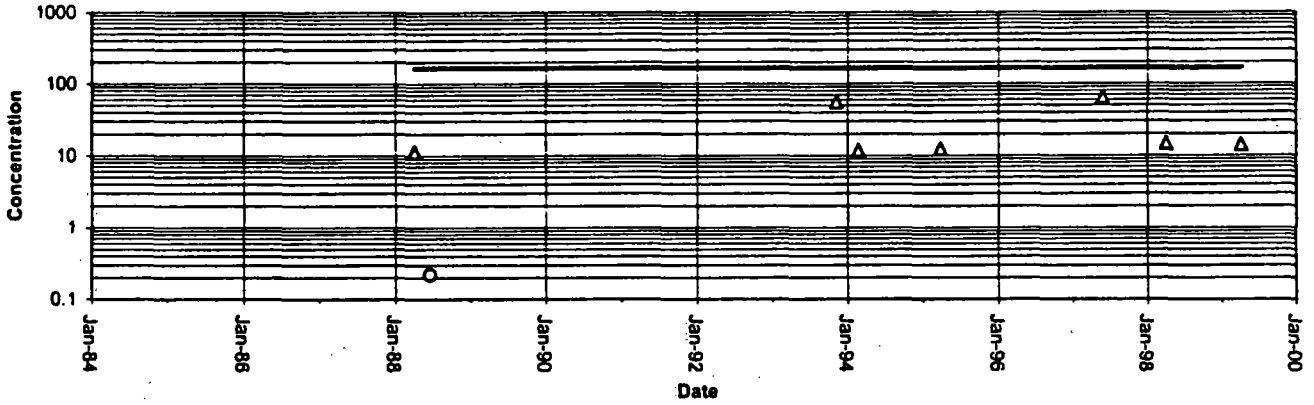
G115



G116



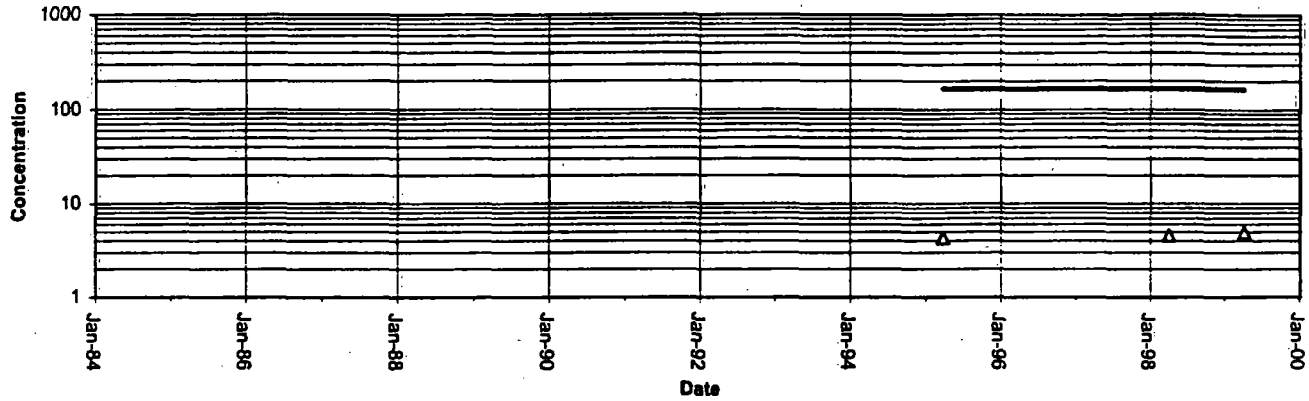
G116A



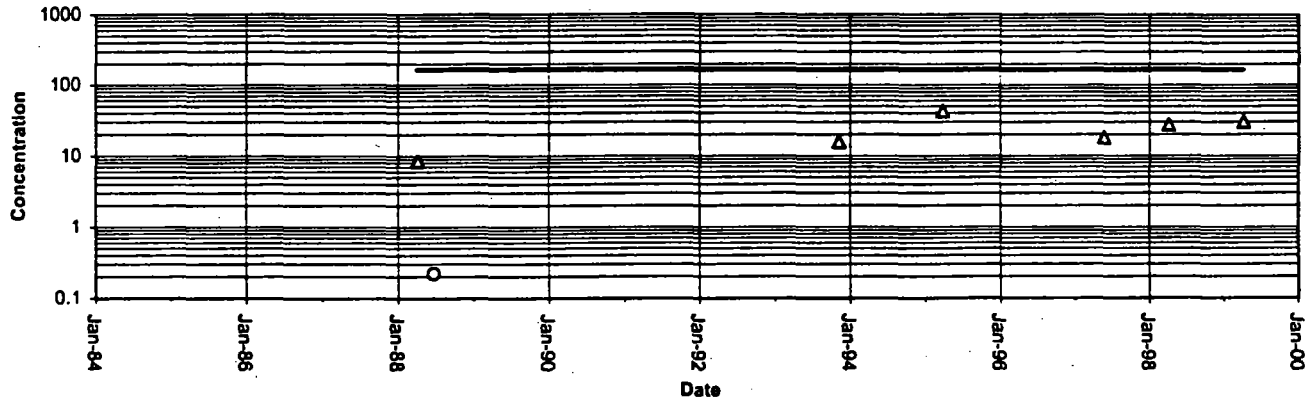
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

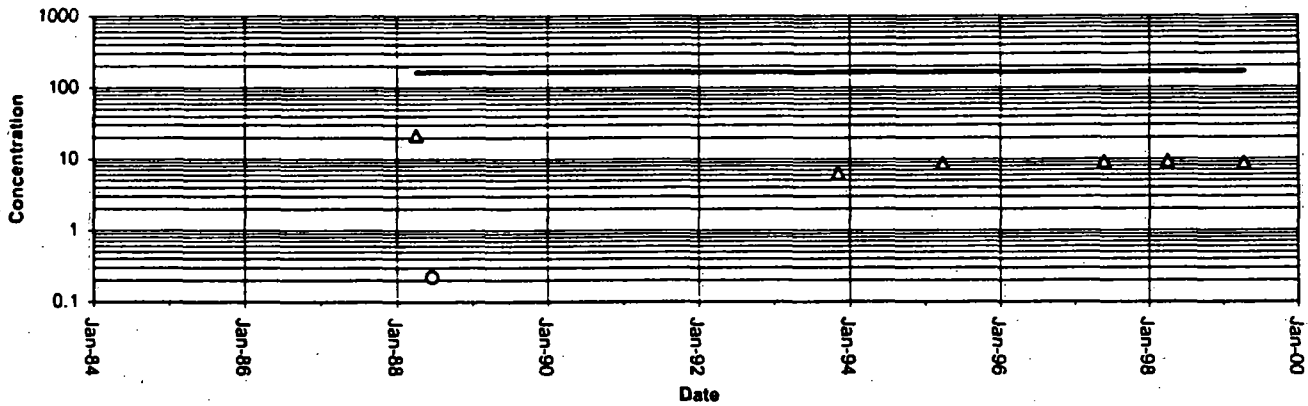
G116D



G117



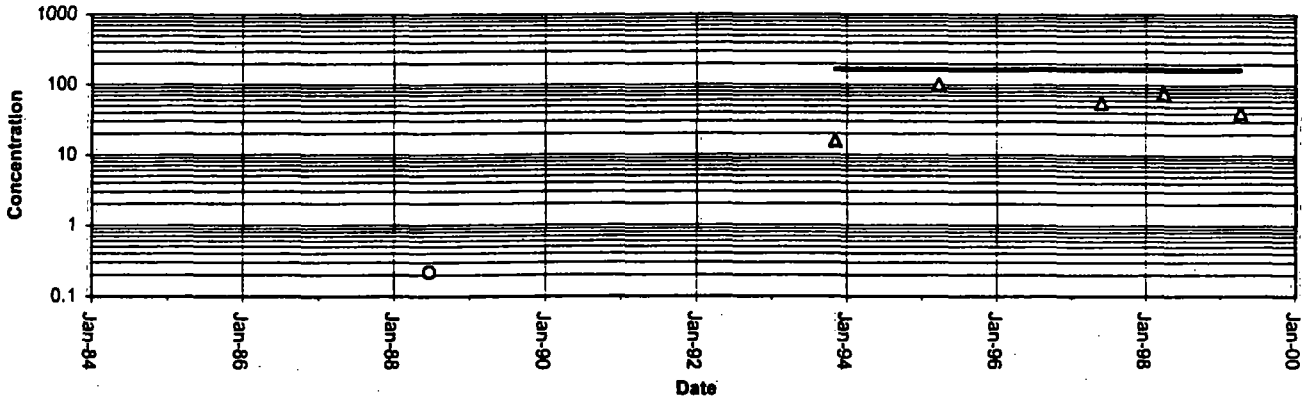
G118A



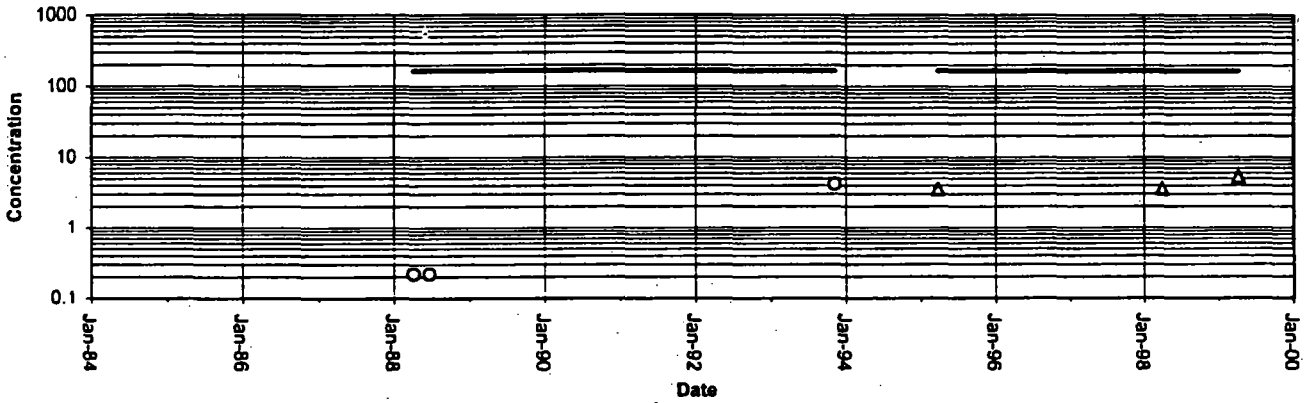
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

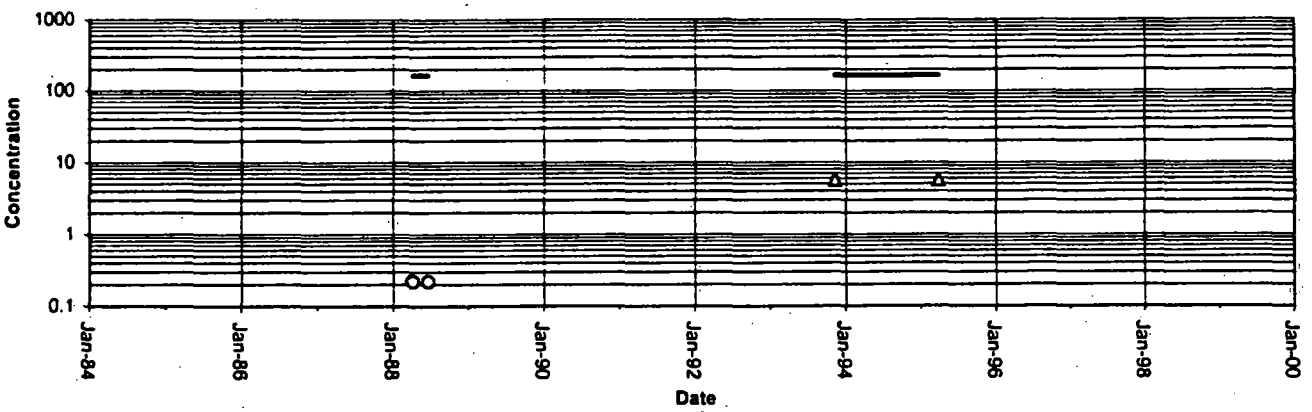
G118R



G119



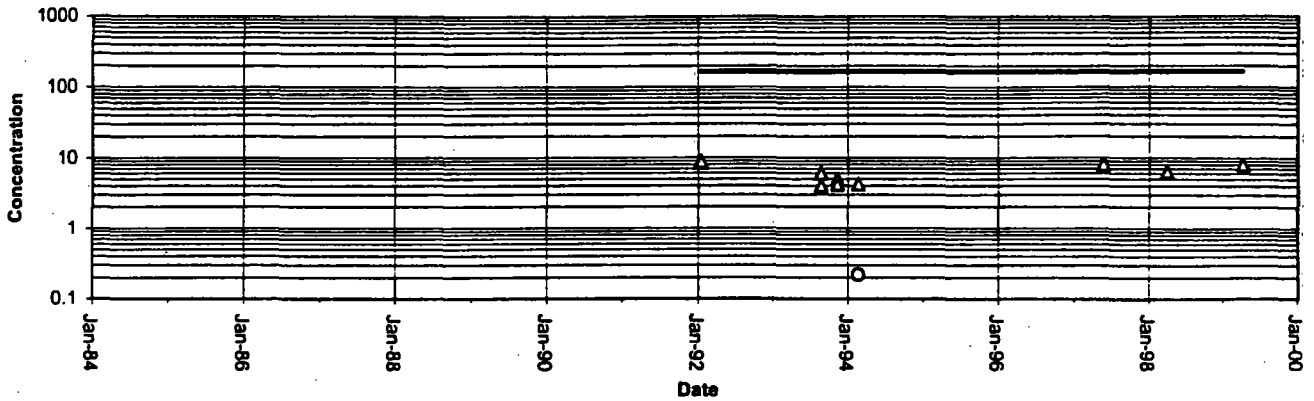
G119A



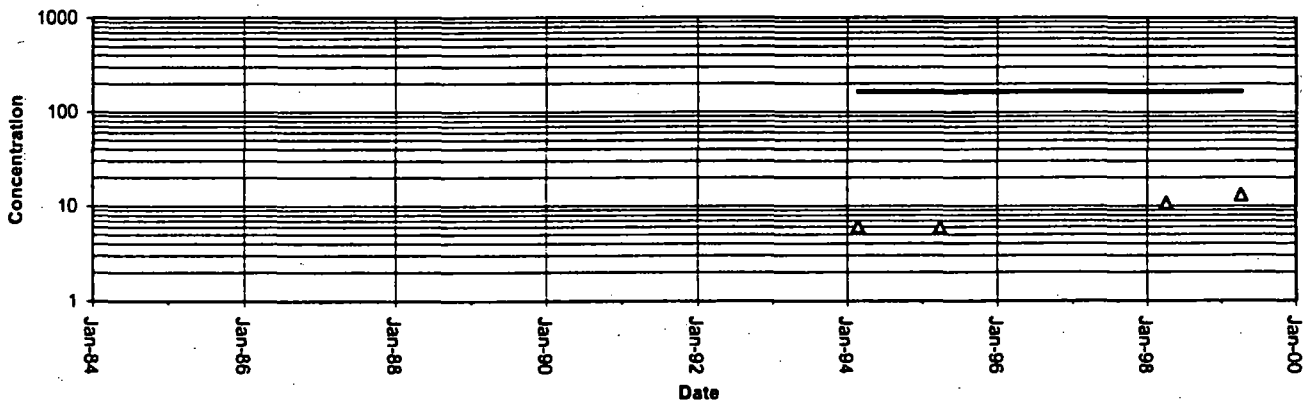
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

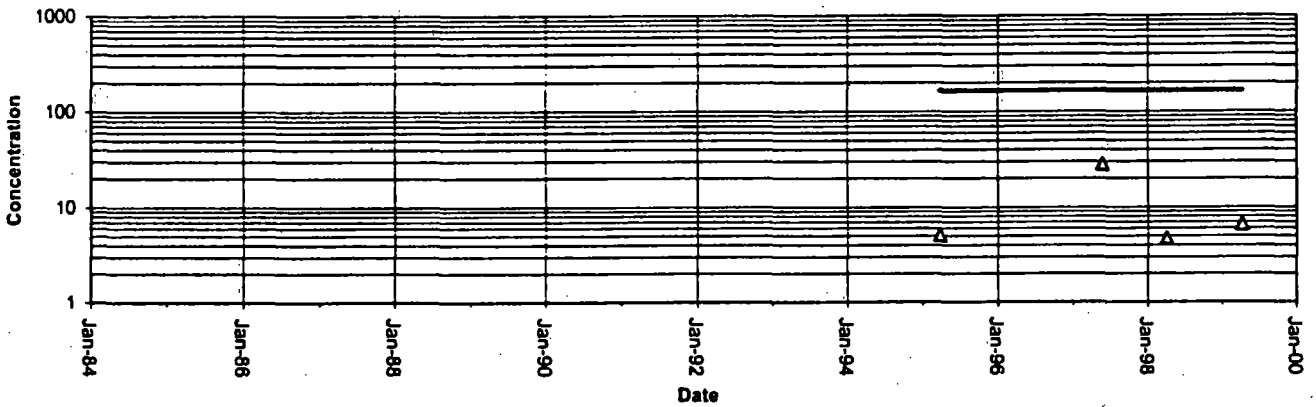
G120B



G130



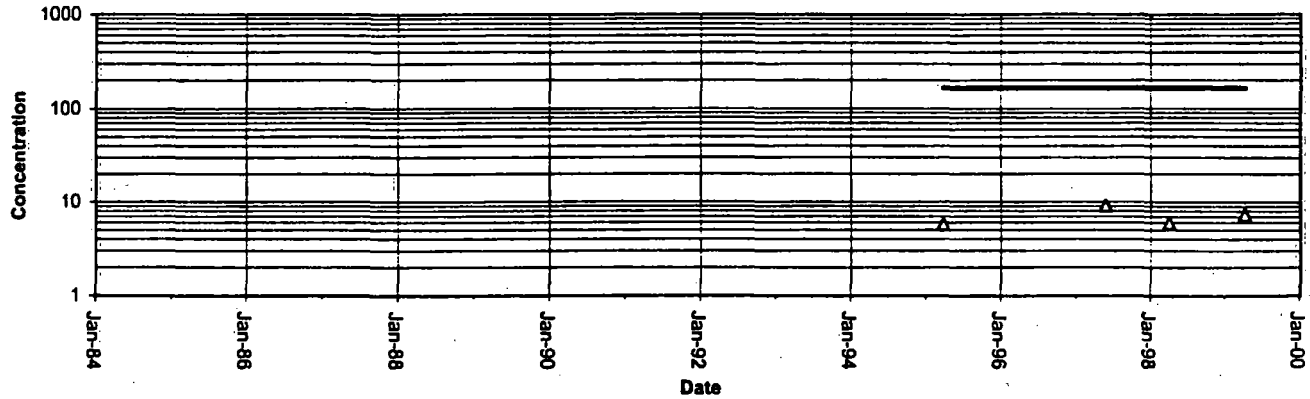
G132



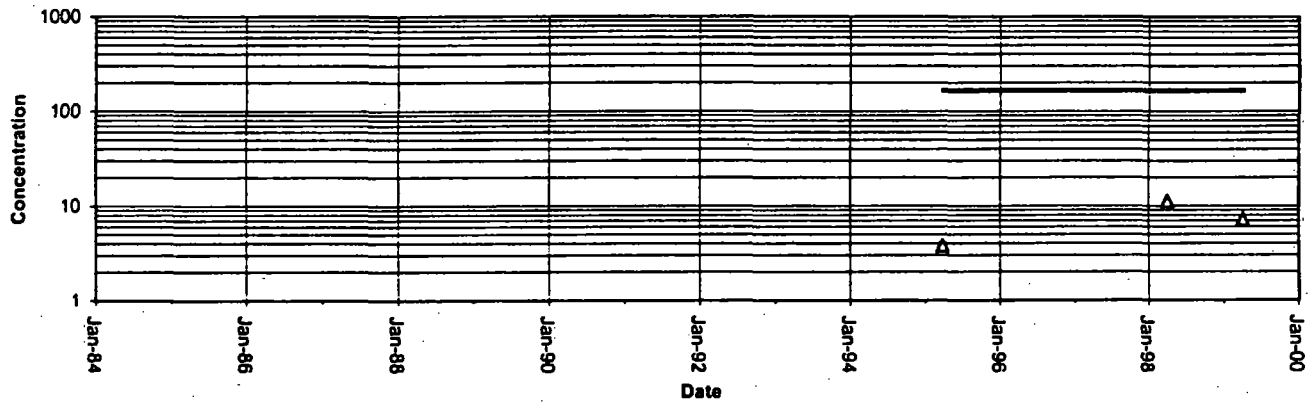
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

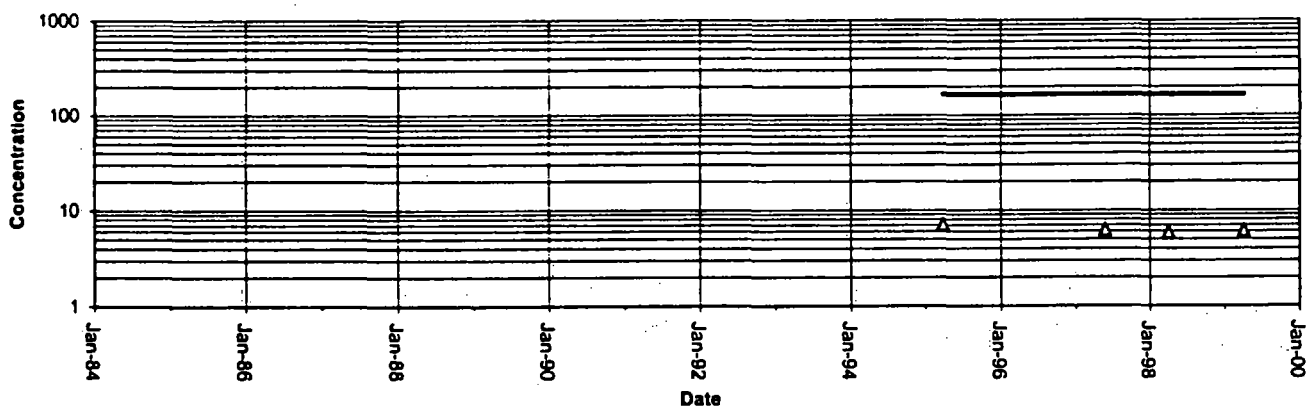
G33D



G33S



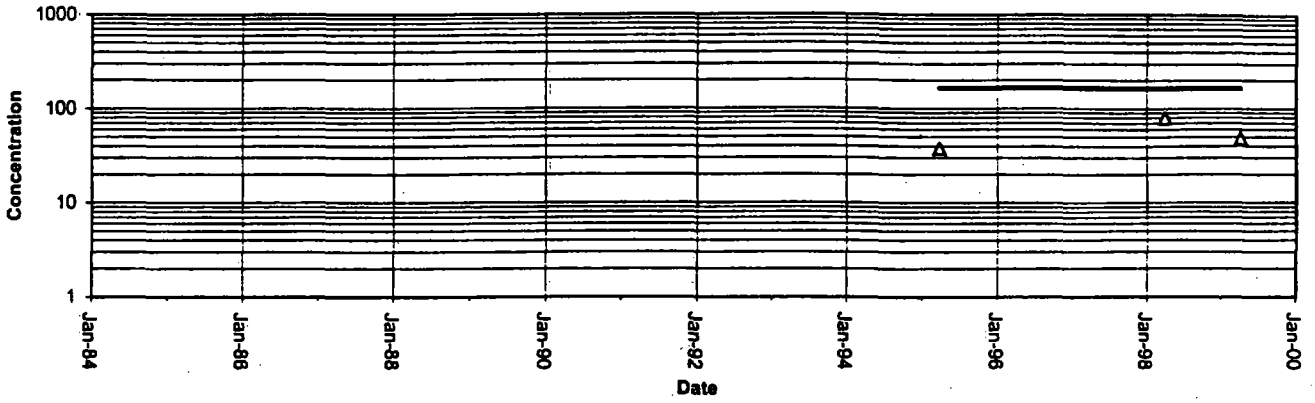
G34D



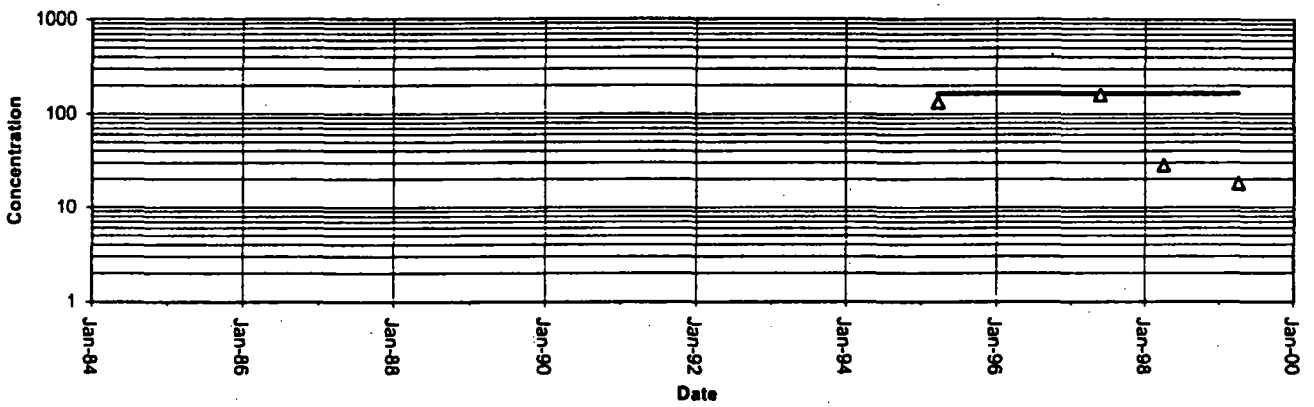
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

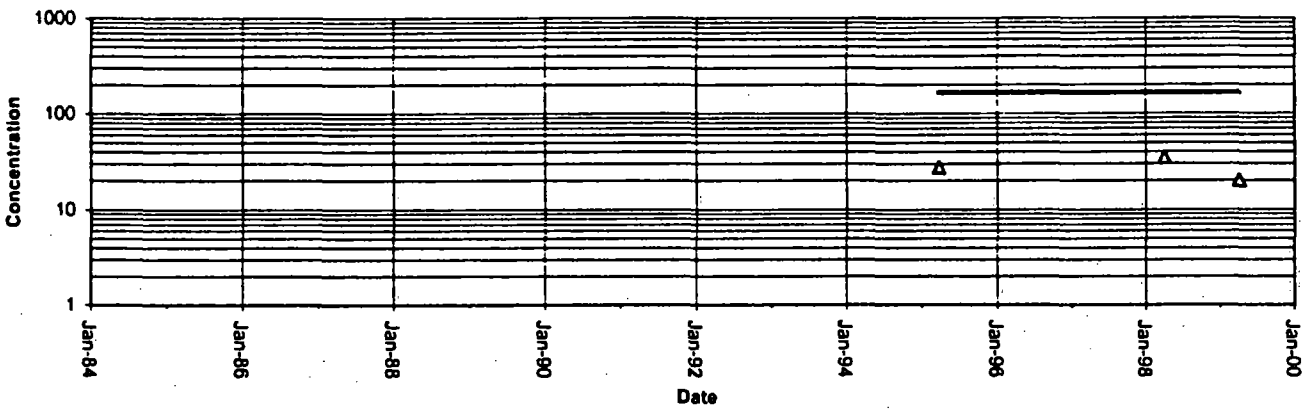
G34S



G35D



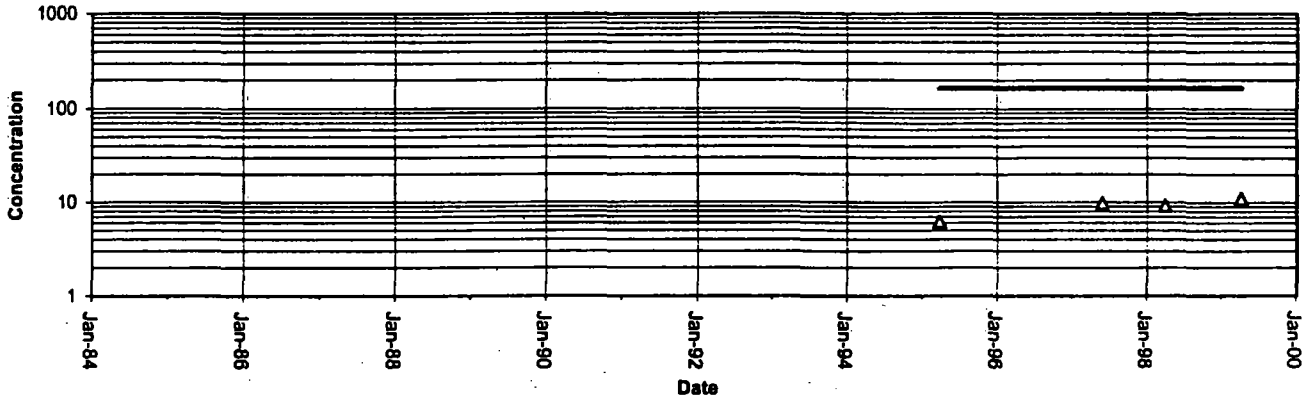
G35S



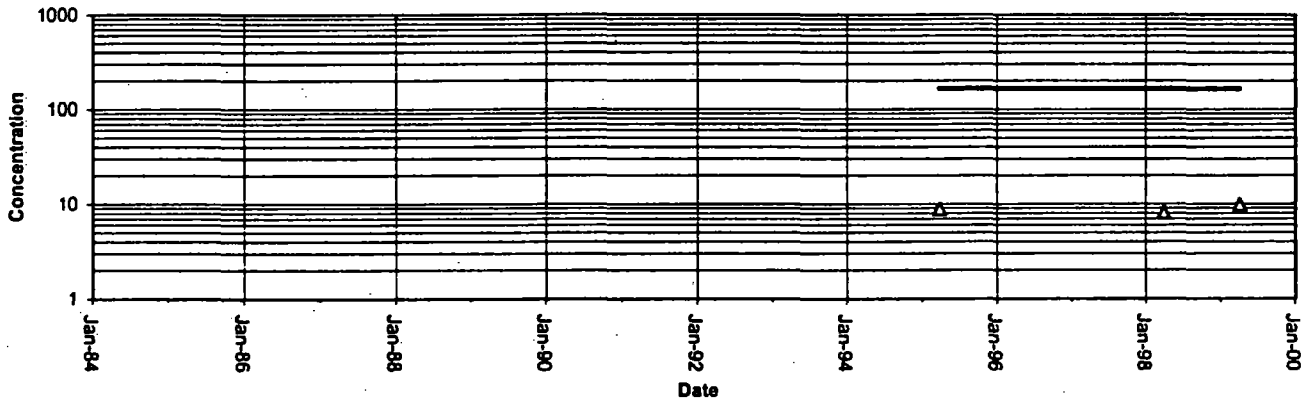
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

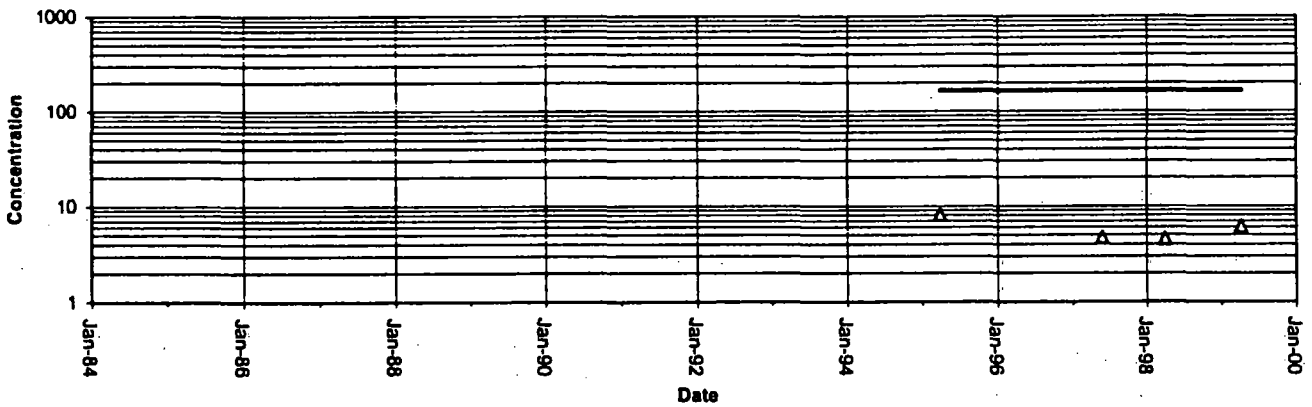
G36



G37D



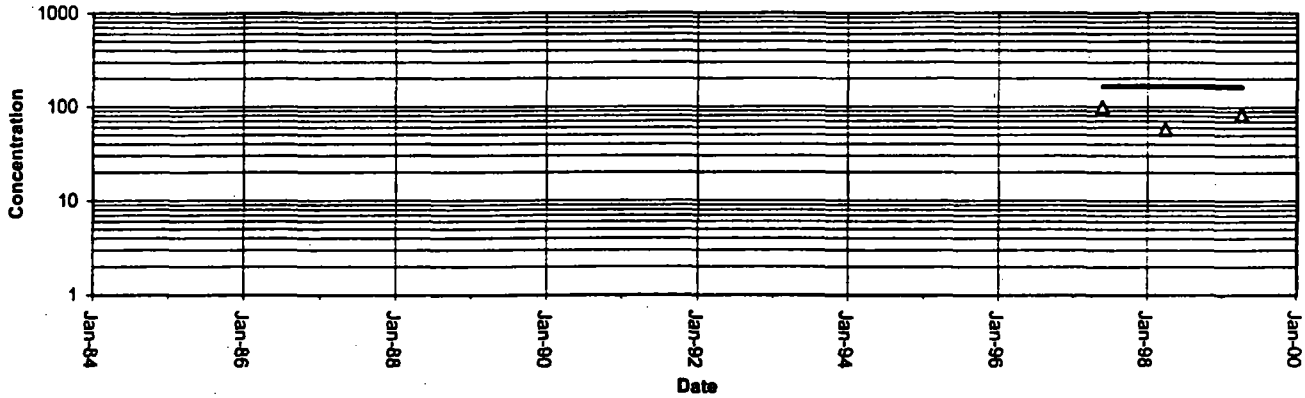
G37S



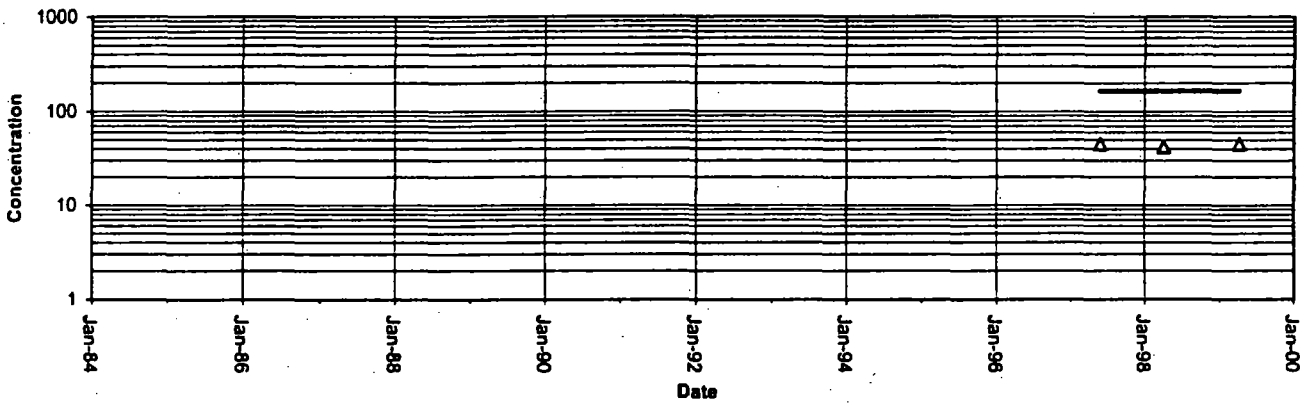
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

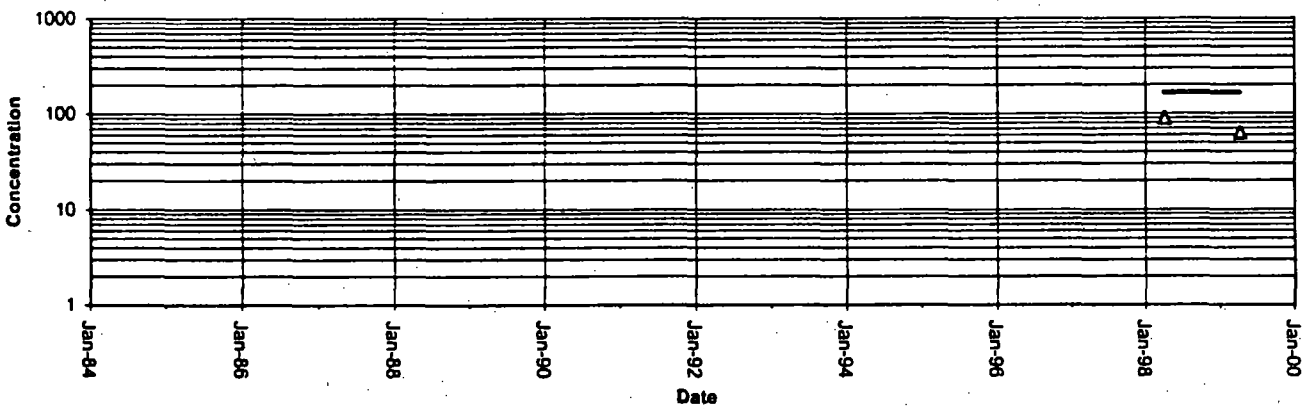
G38



G39



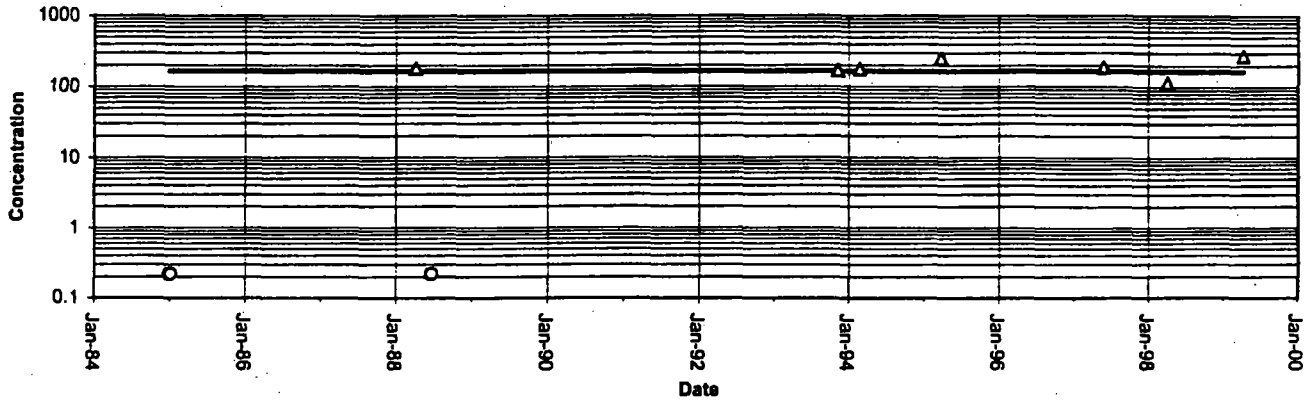
G40



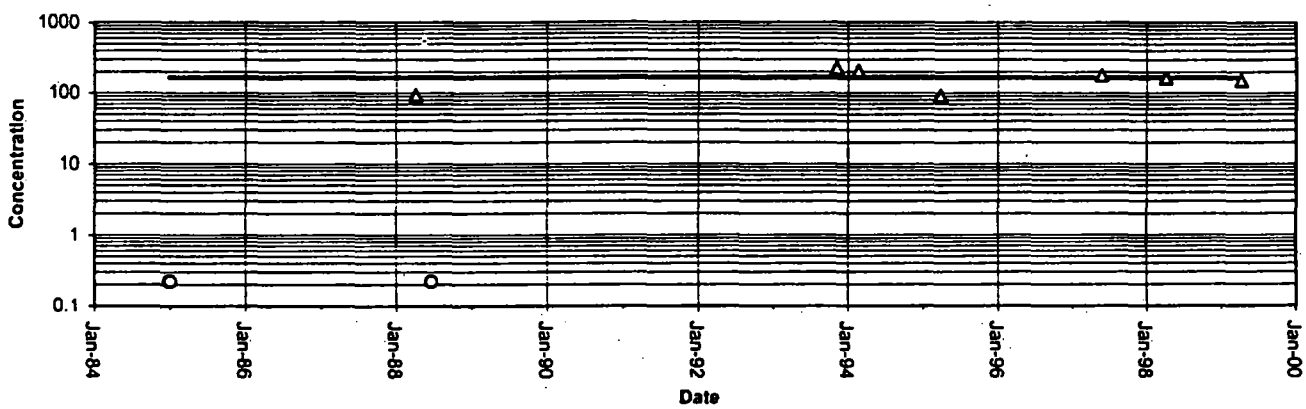
Sodium (mg/L)

AGQS Δ Concentration O NonDetect

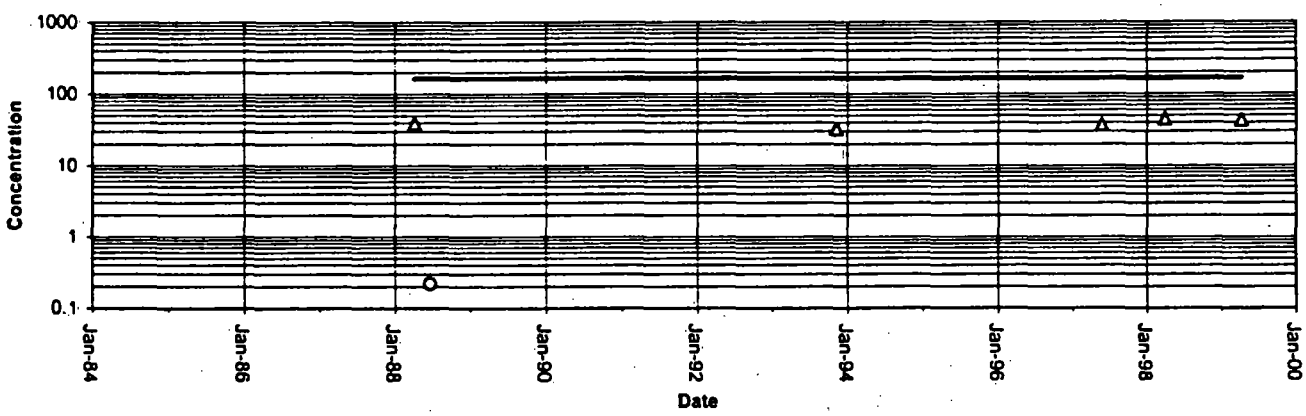
MW106



P1



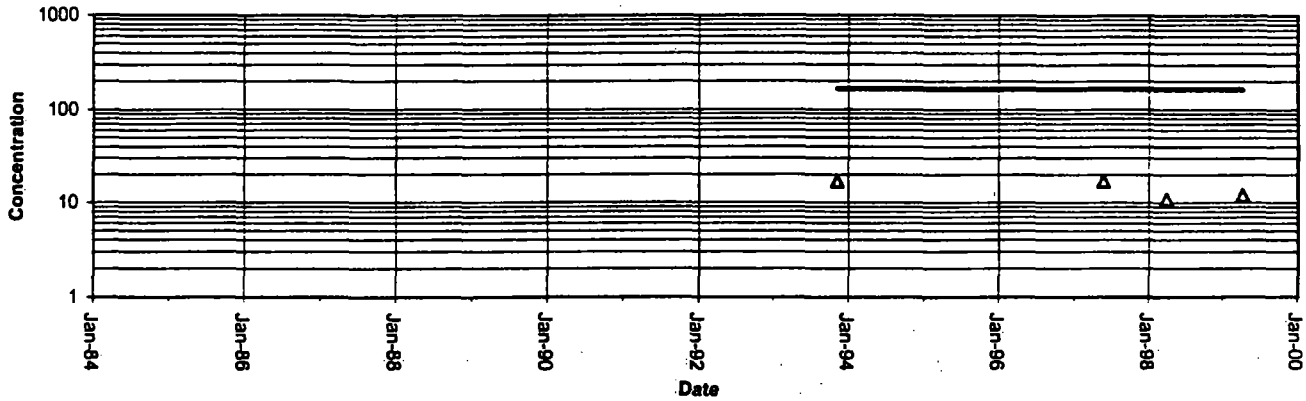
P3R



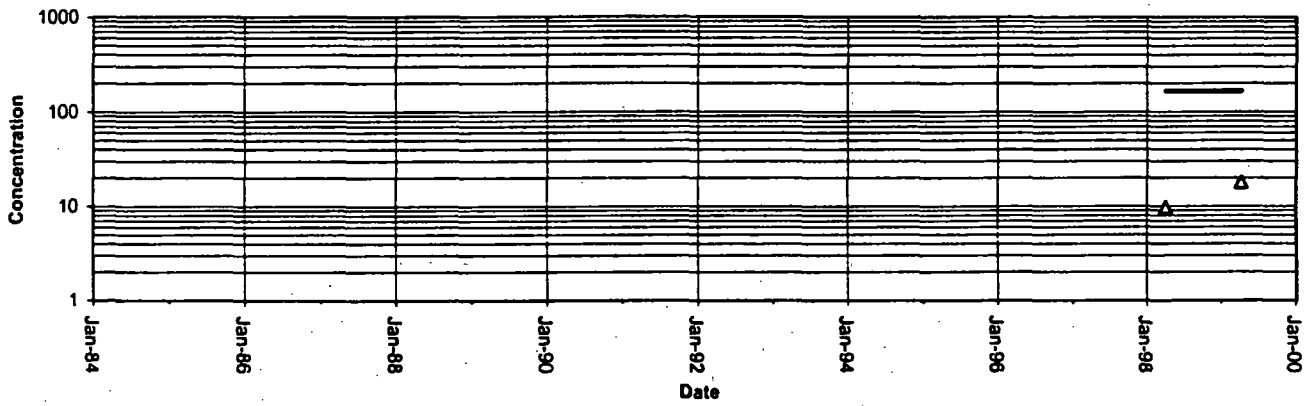
Sodium (mg/L)

AGQS Concentration NonDetect

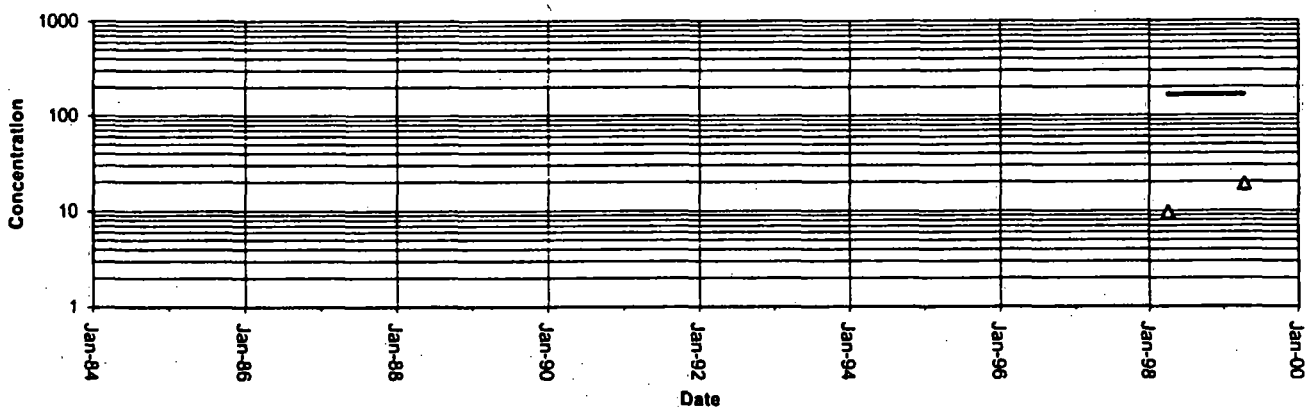
P4R

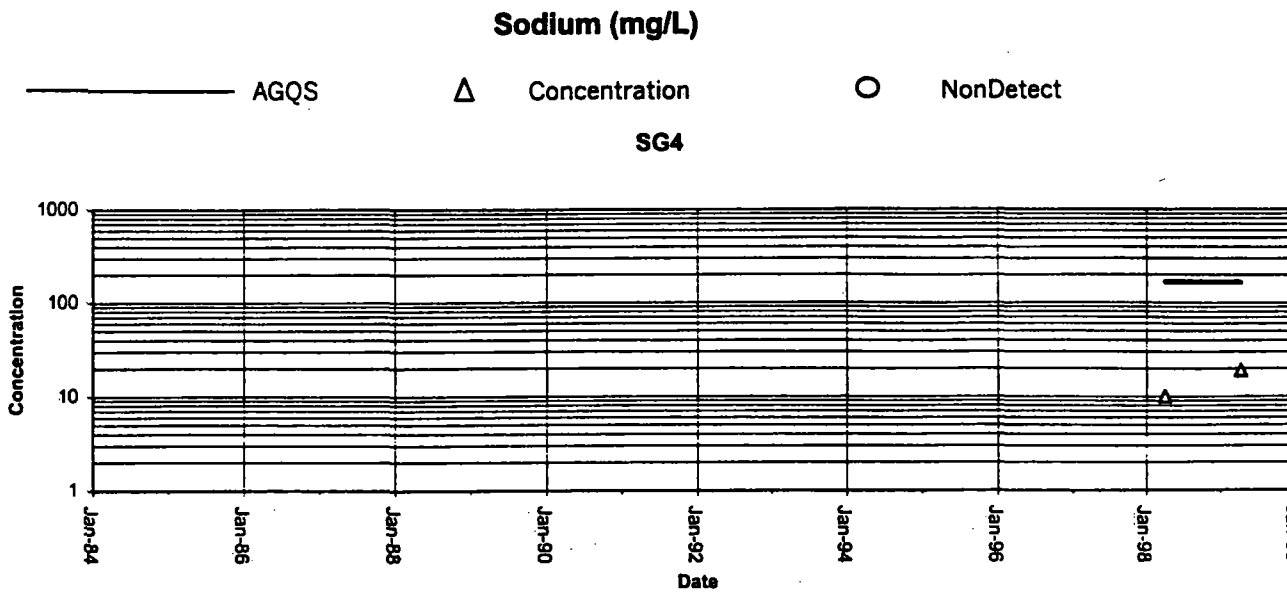


SG1



SG3

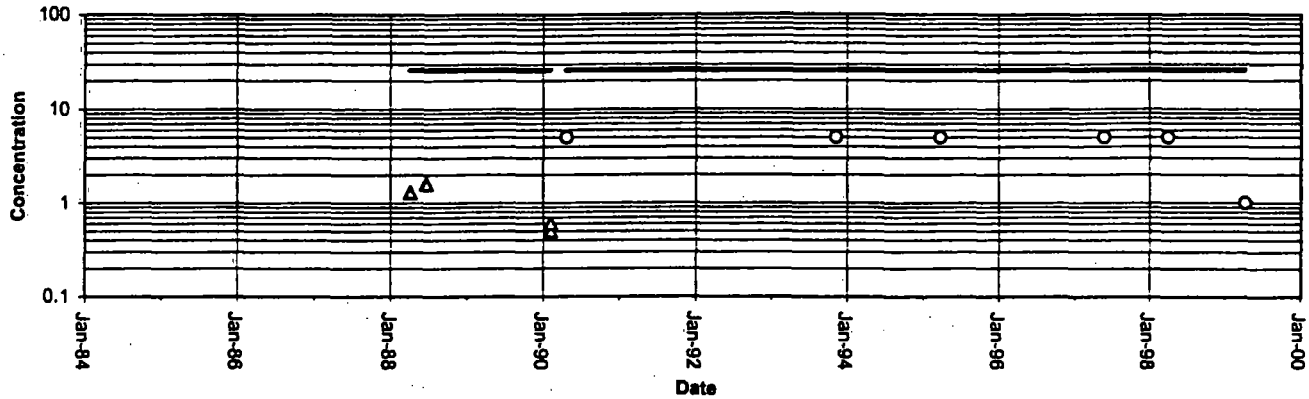



Sodium (mg/L)
AGQS
Concentration
NonDetect
SG4
1000
100
10
1
Concentration
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Date

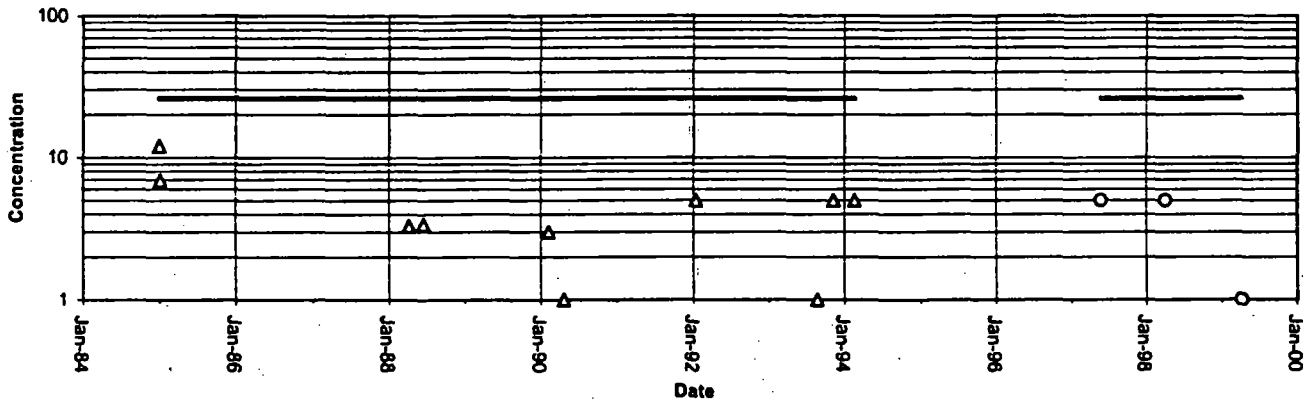
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

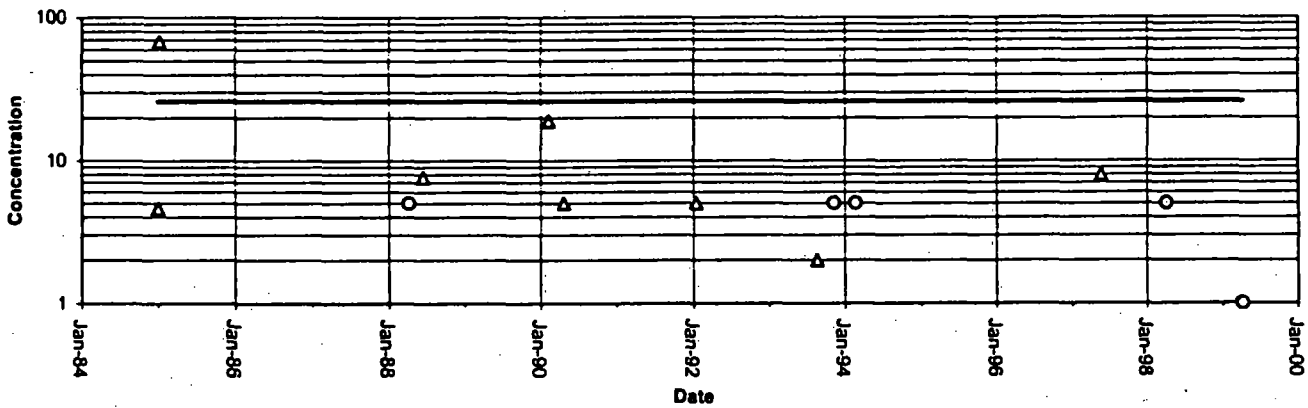
B15R



G109



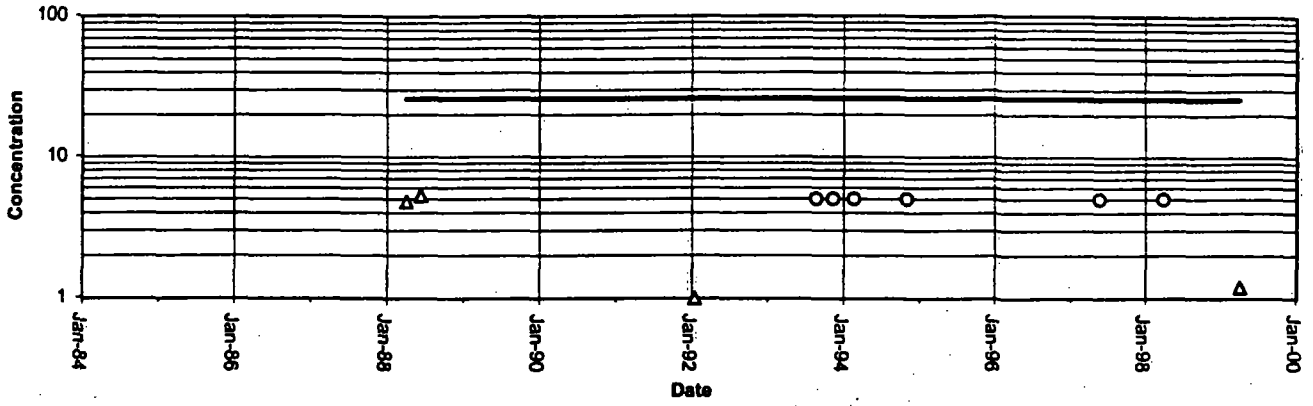
G109A



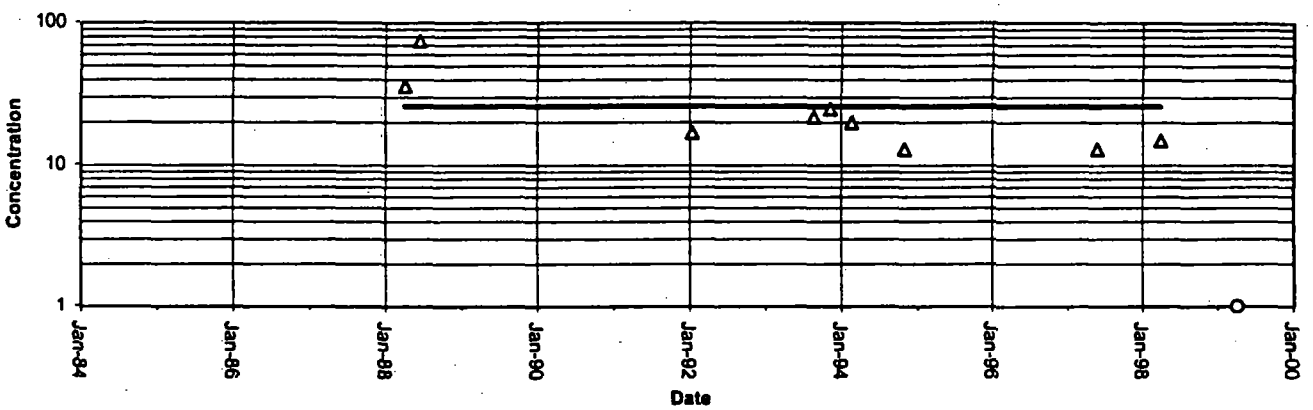
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

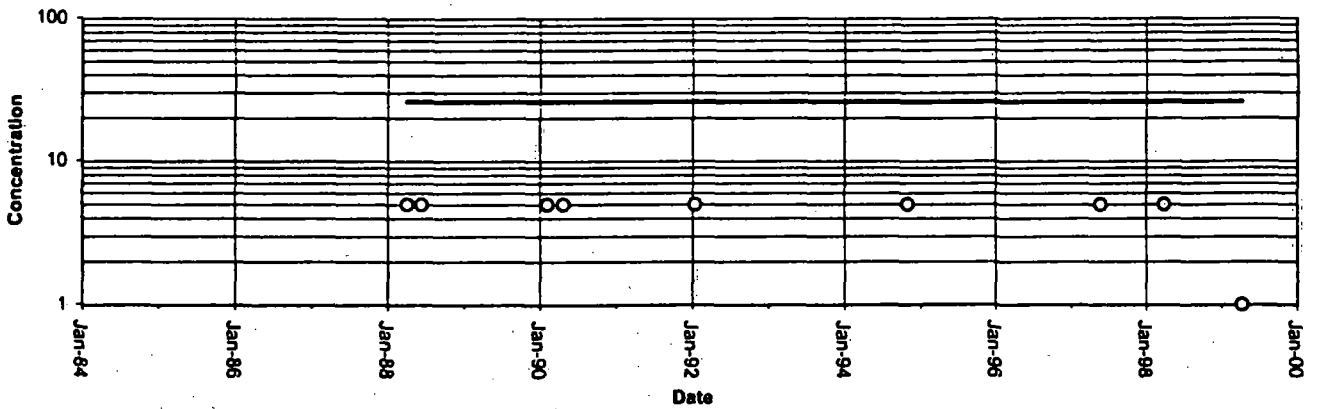
G113



G113A



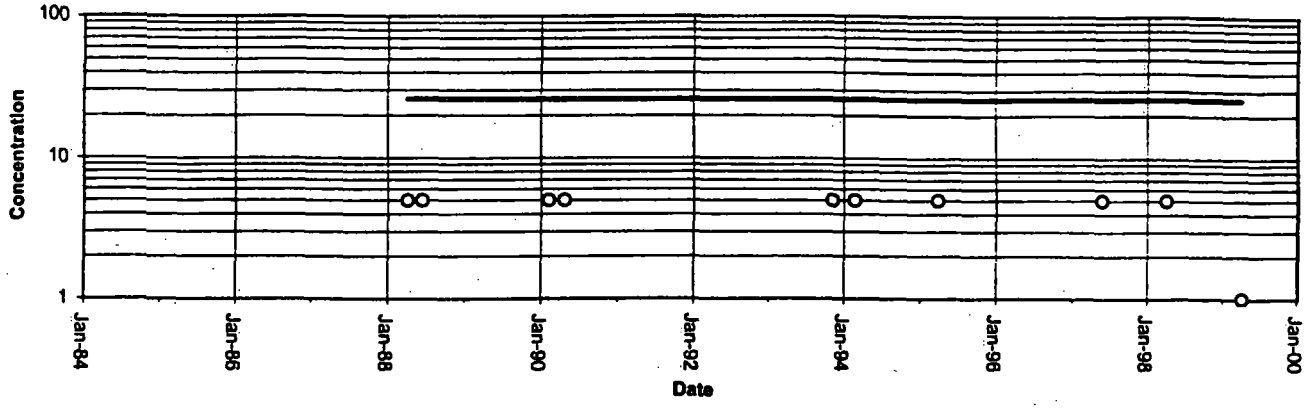
G114



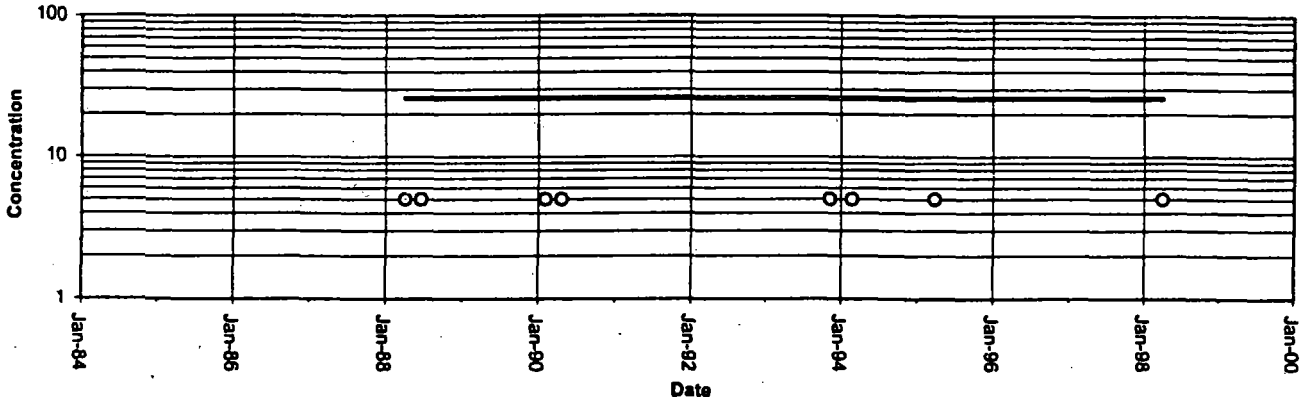
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

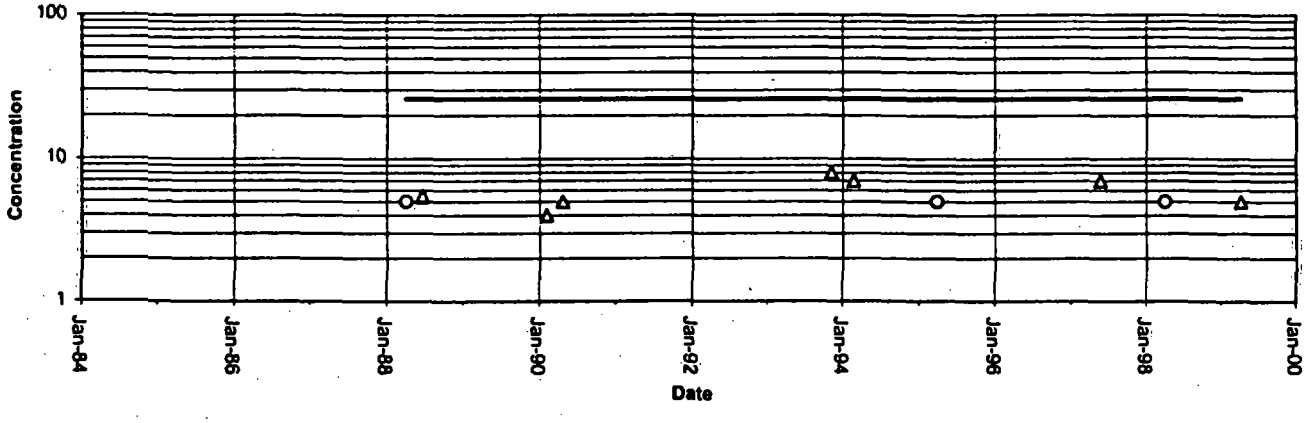
G115



G116



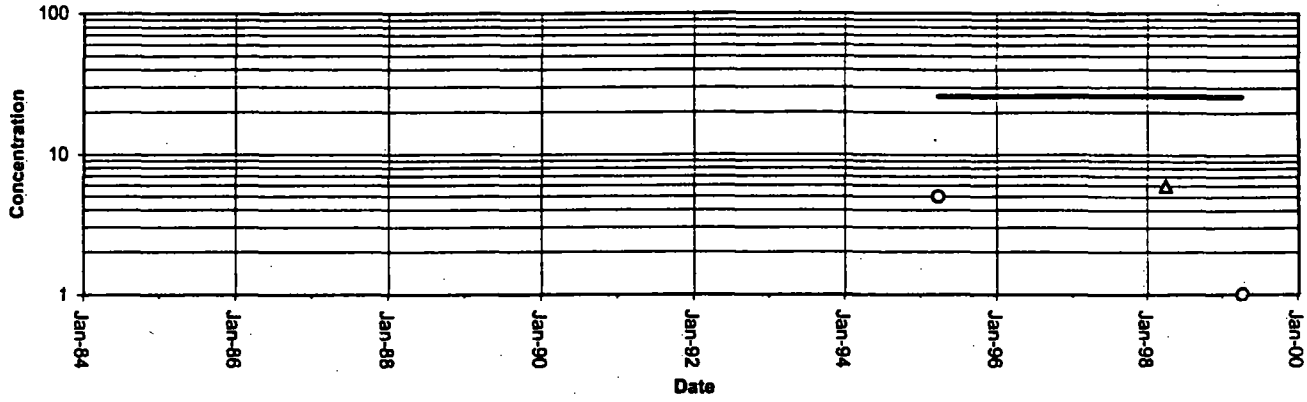
G116A



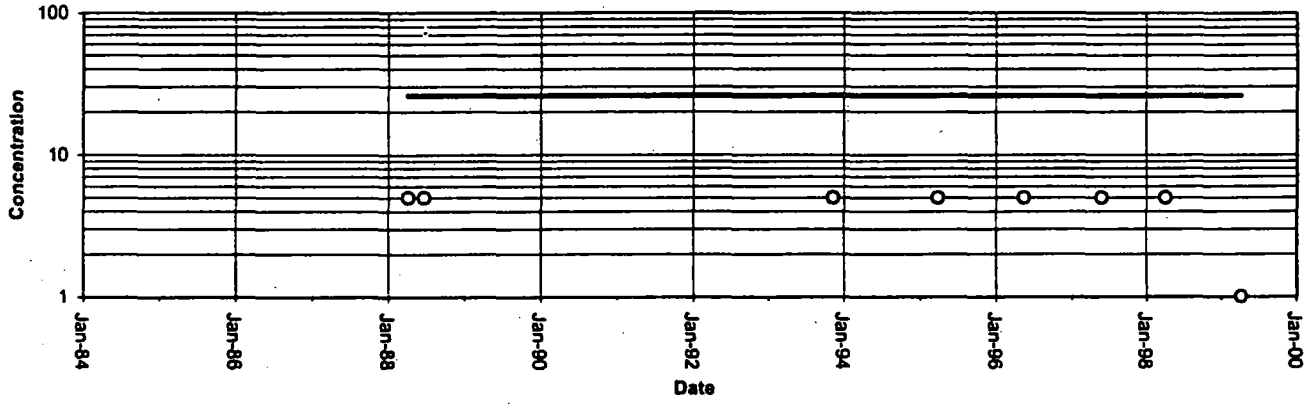
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

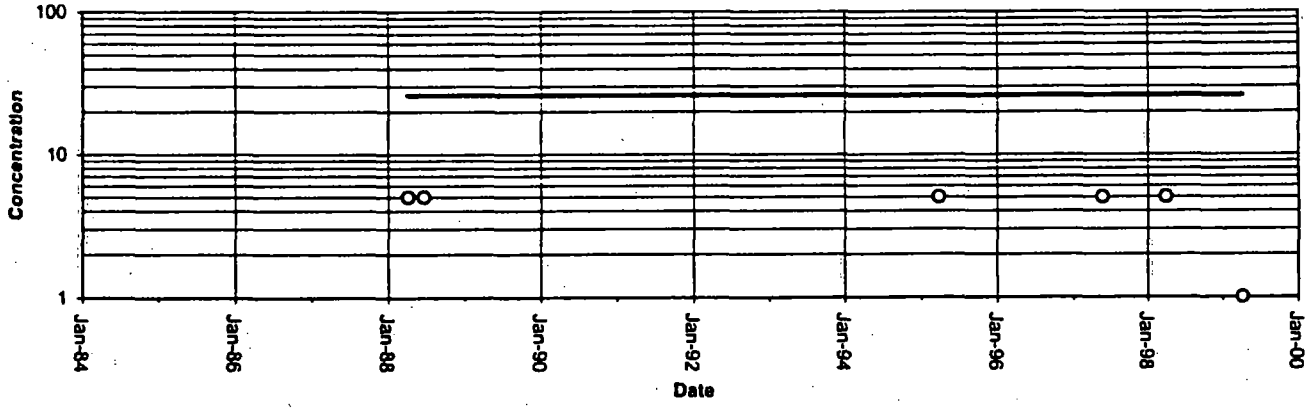
G116D



G117



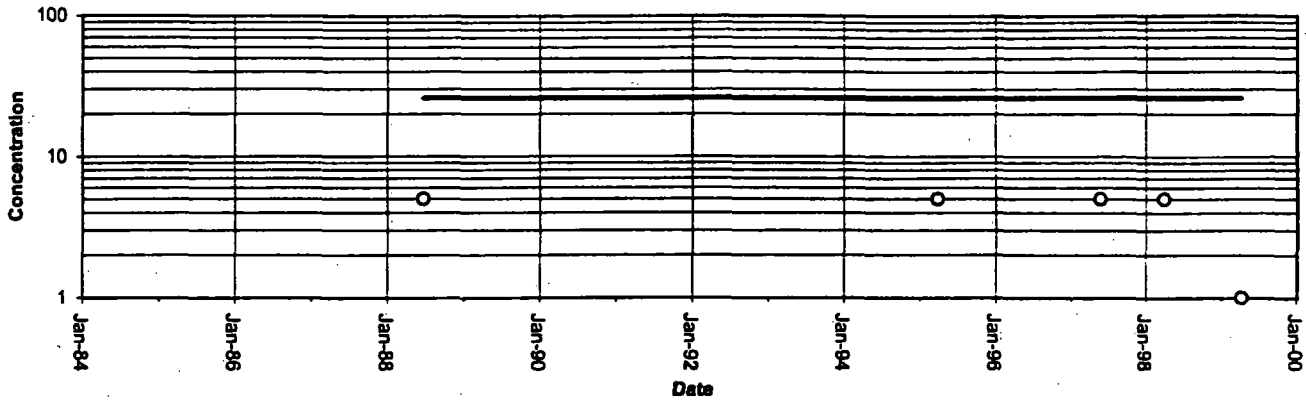
G118A



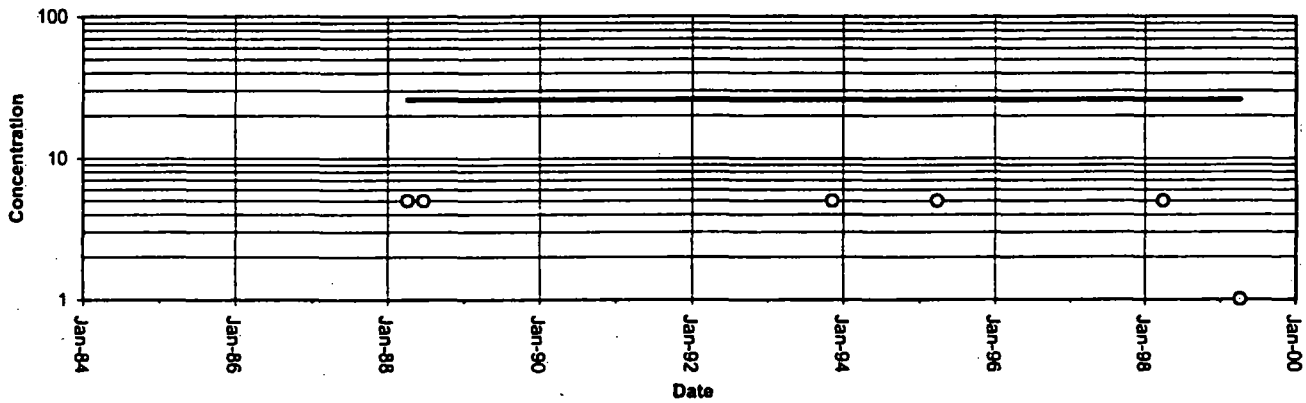
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

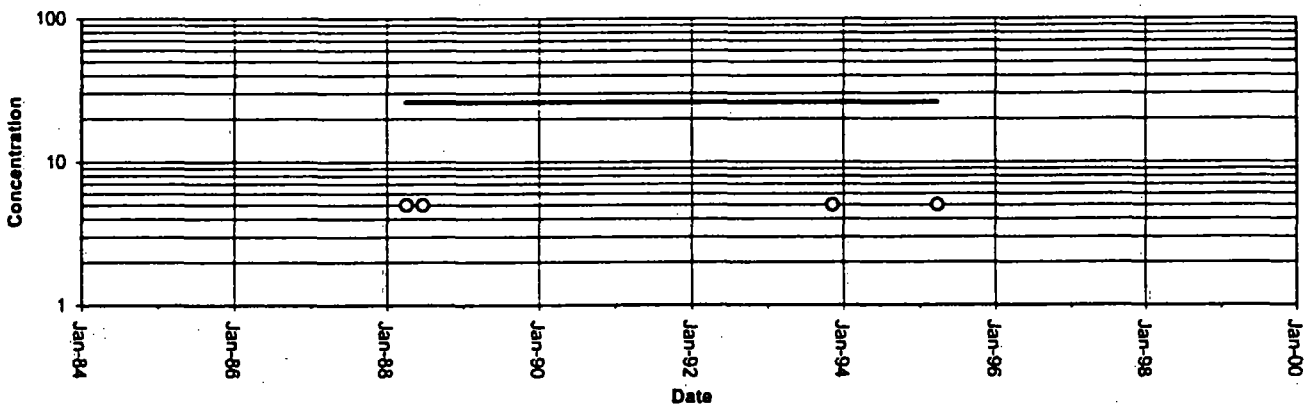
G118R



G119



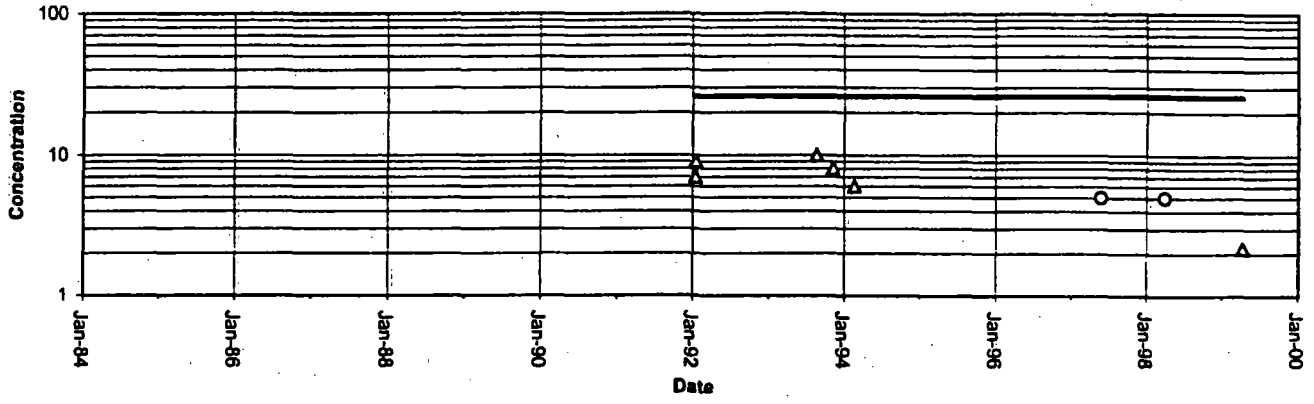
G119A



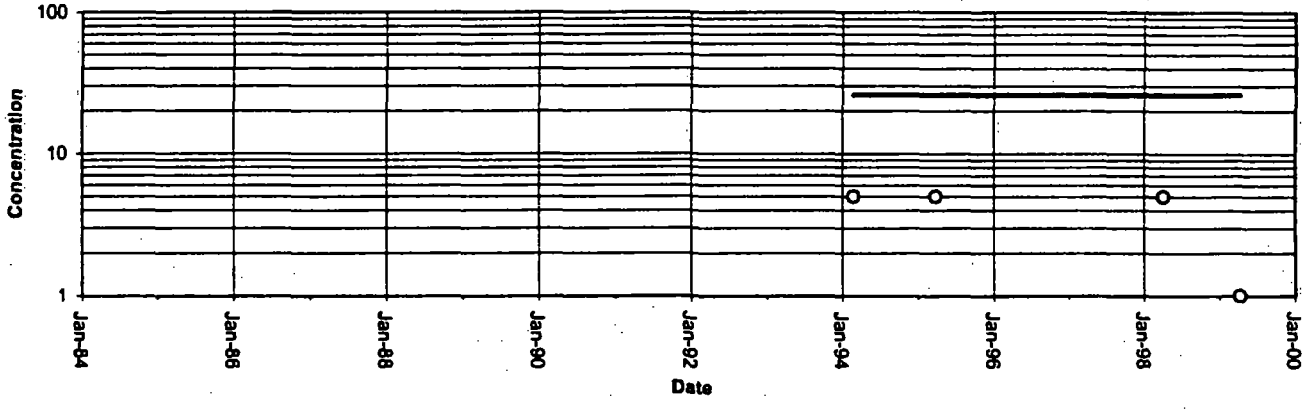
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

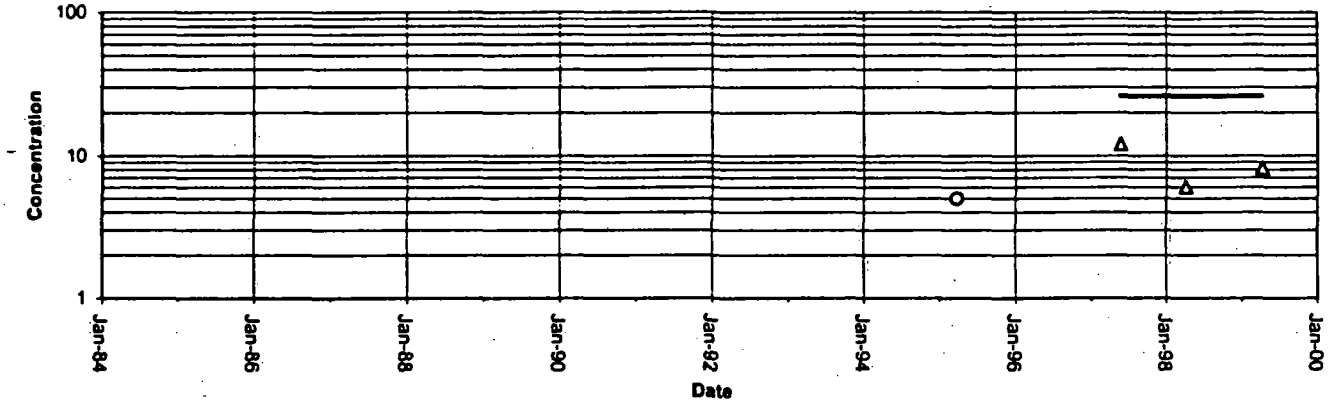
G120B



G130



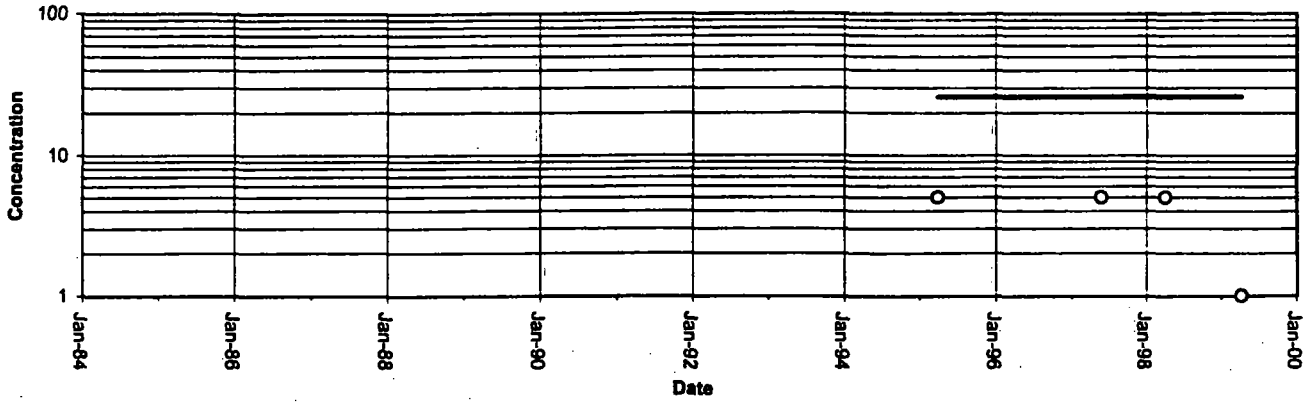
G132



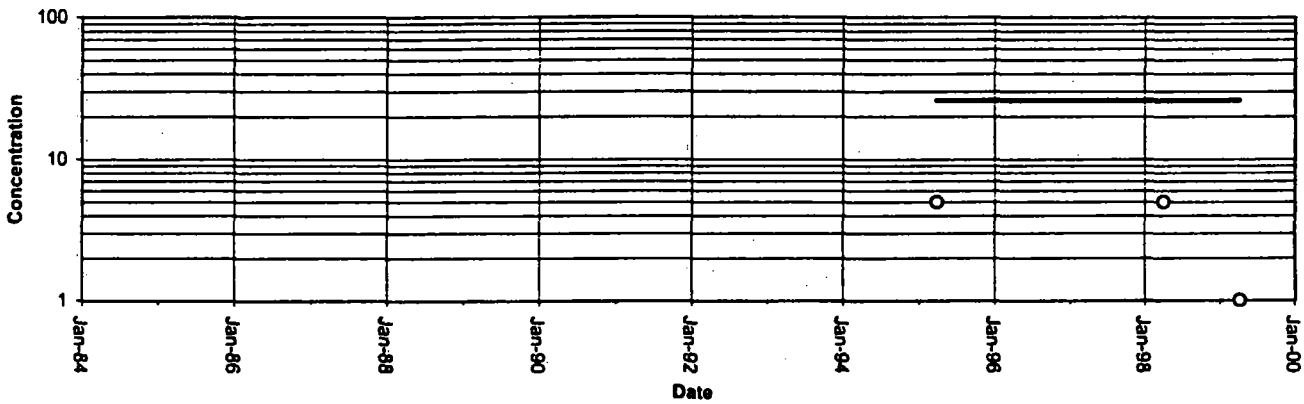
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

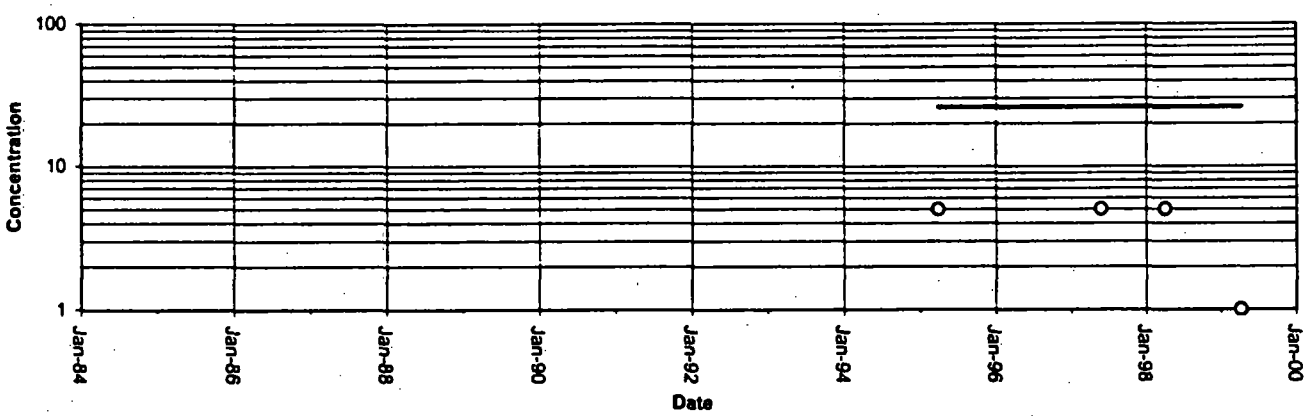
G33D



G33S



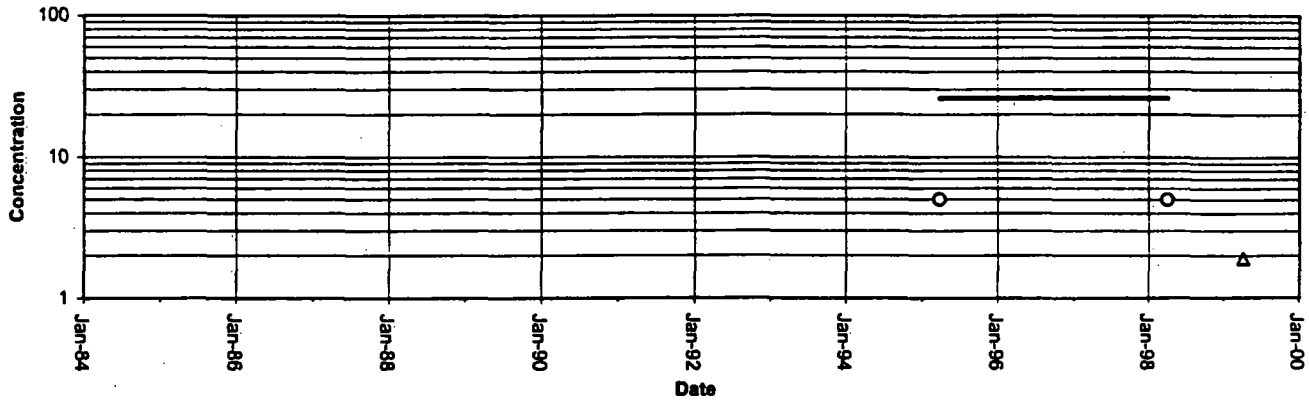
G34D



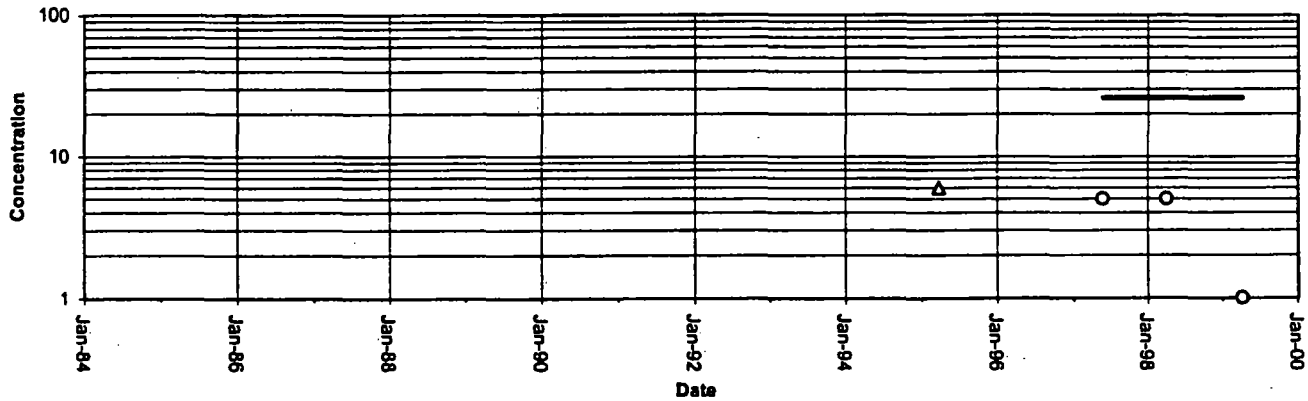
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

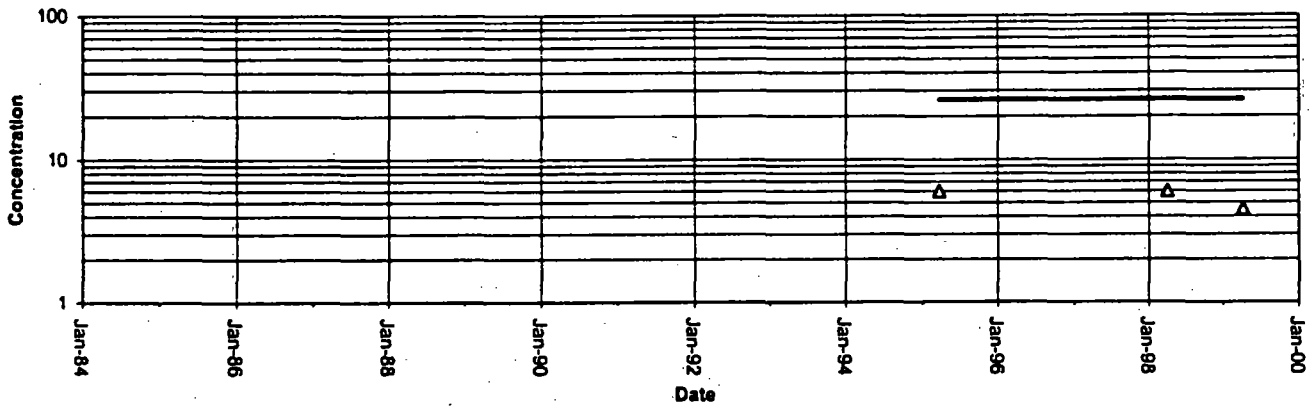
G34S



G35D



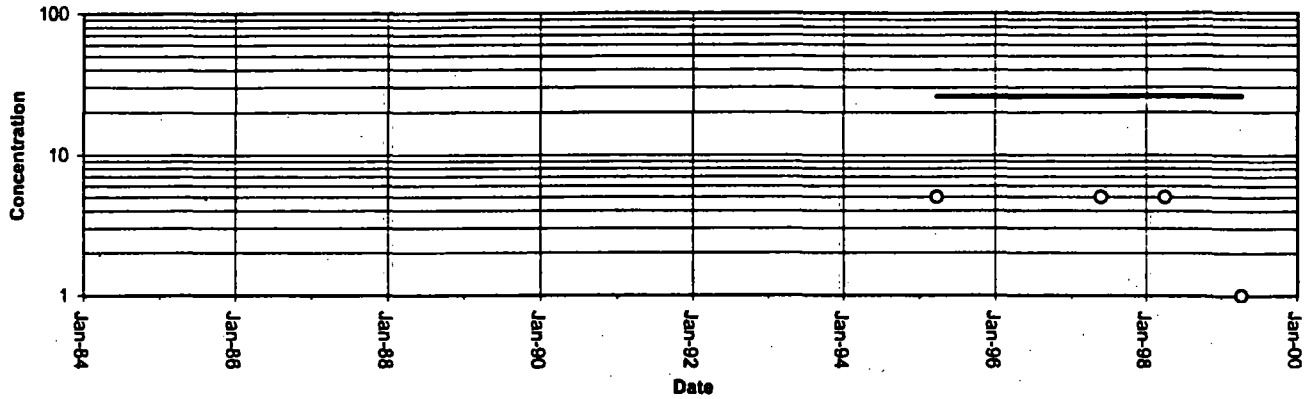
G35S



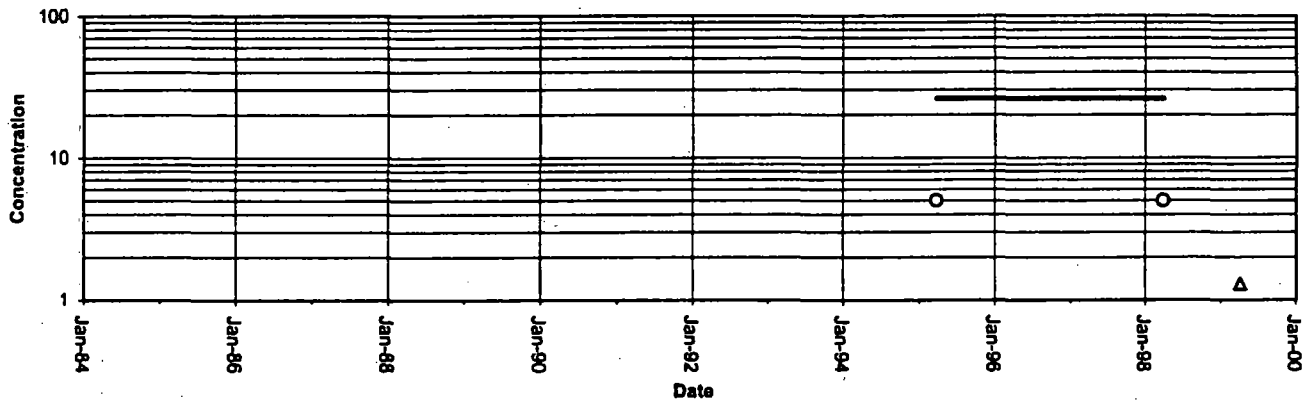
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

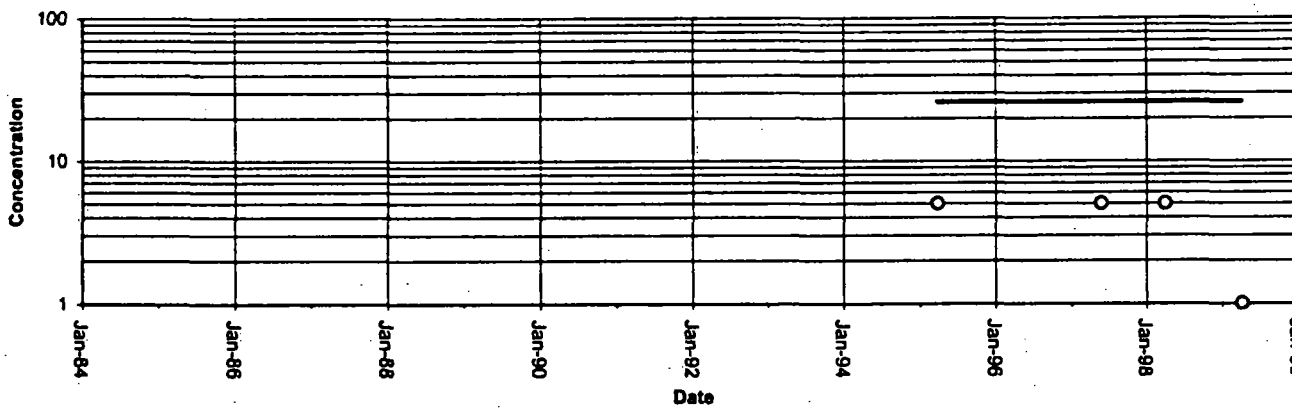
G36



G37D



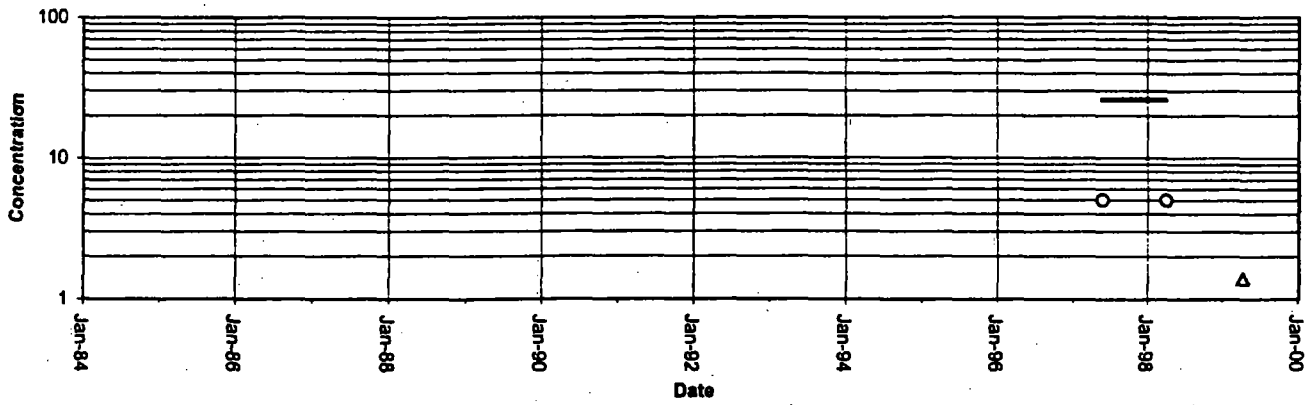
G37S



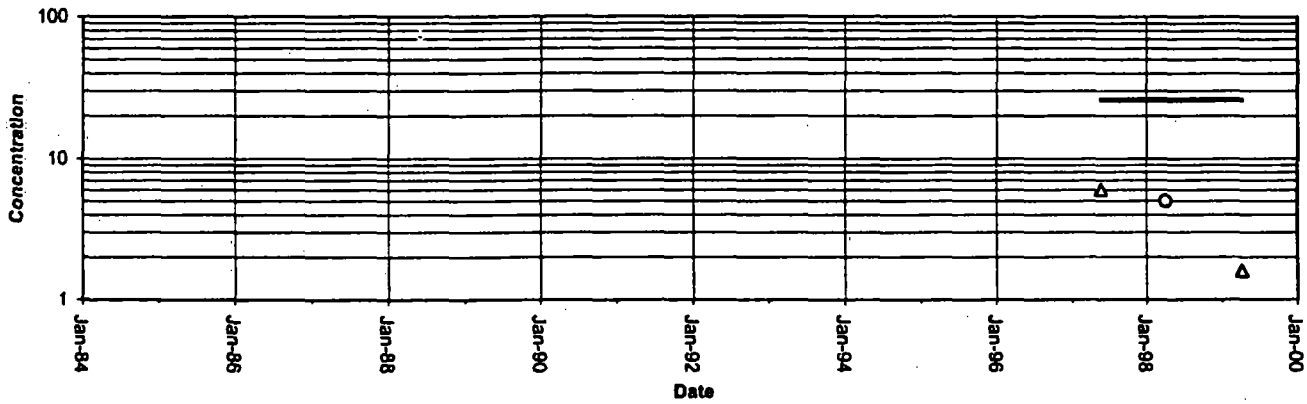
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

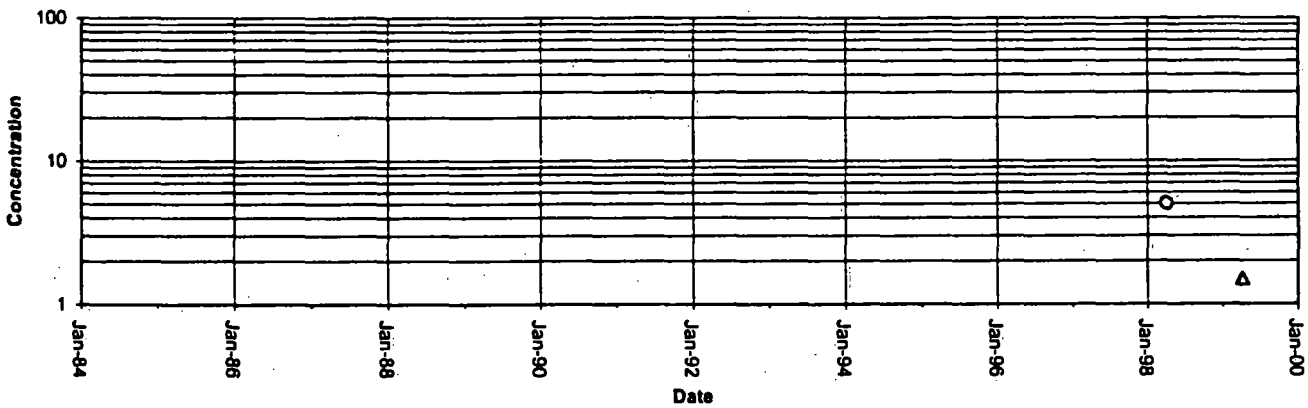
G38



G39



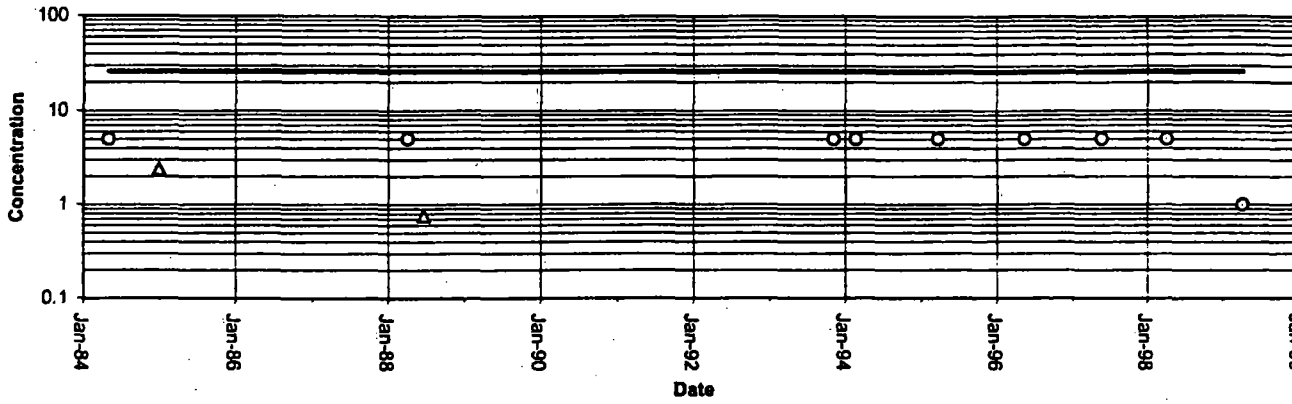
G40



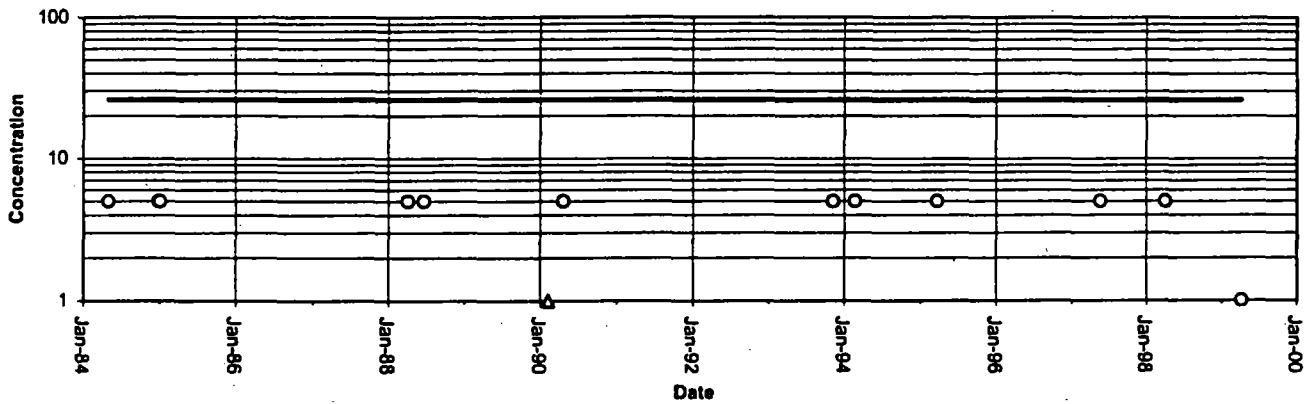
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

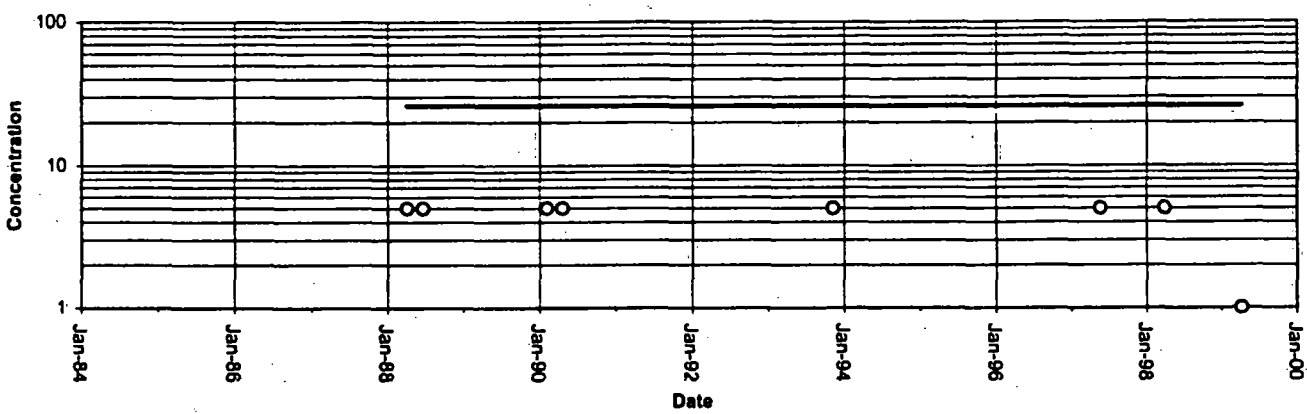
MW106



P1



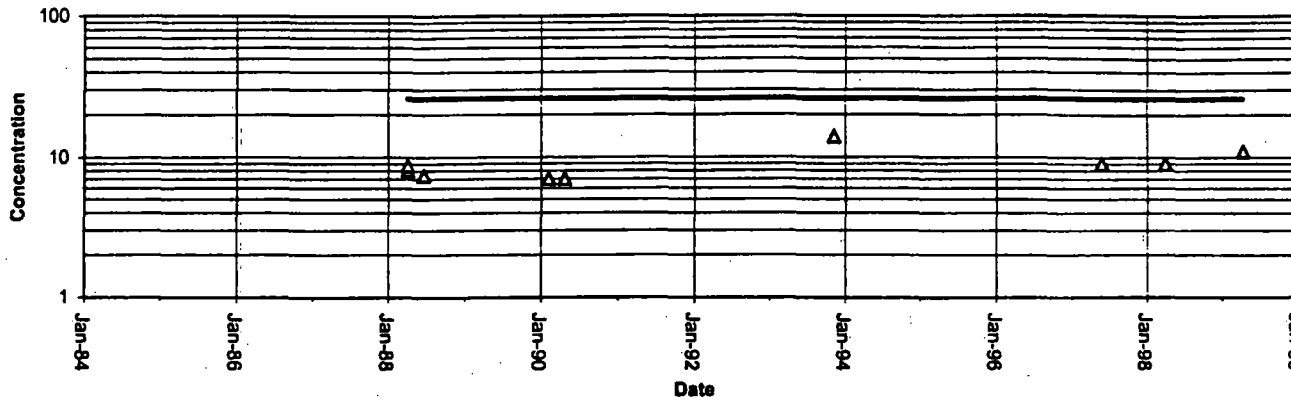
P3R



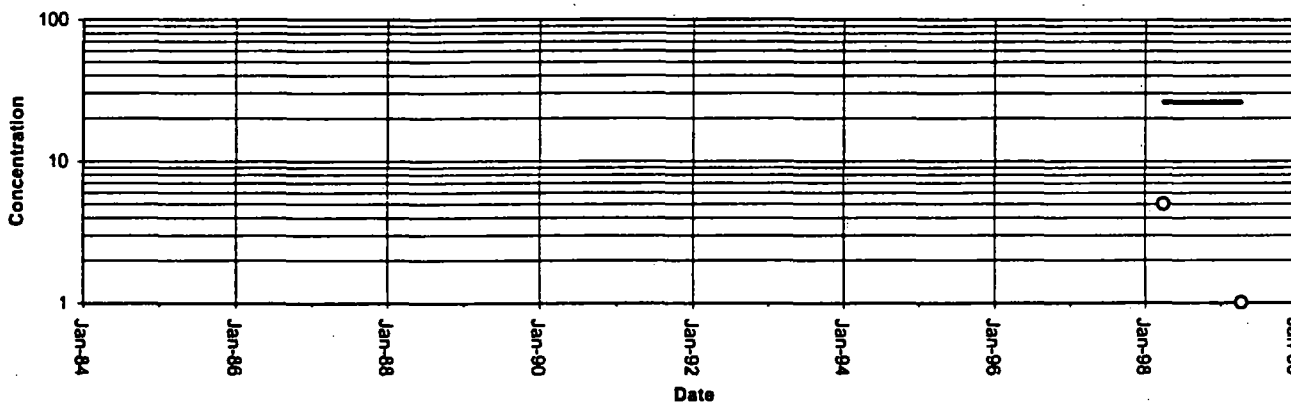
Tetrachloroethene (ug/L)

AGQS Δ Concentration O NonDetect

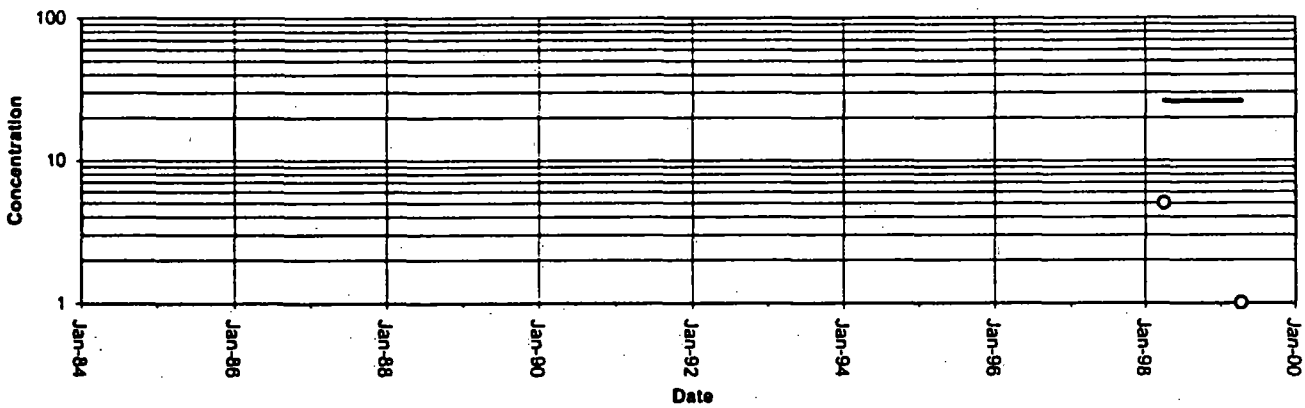
P4R



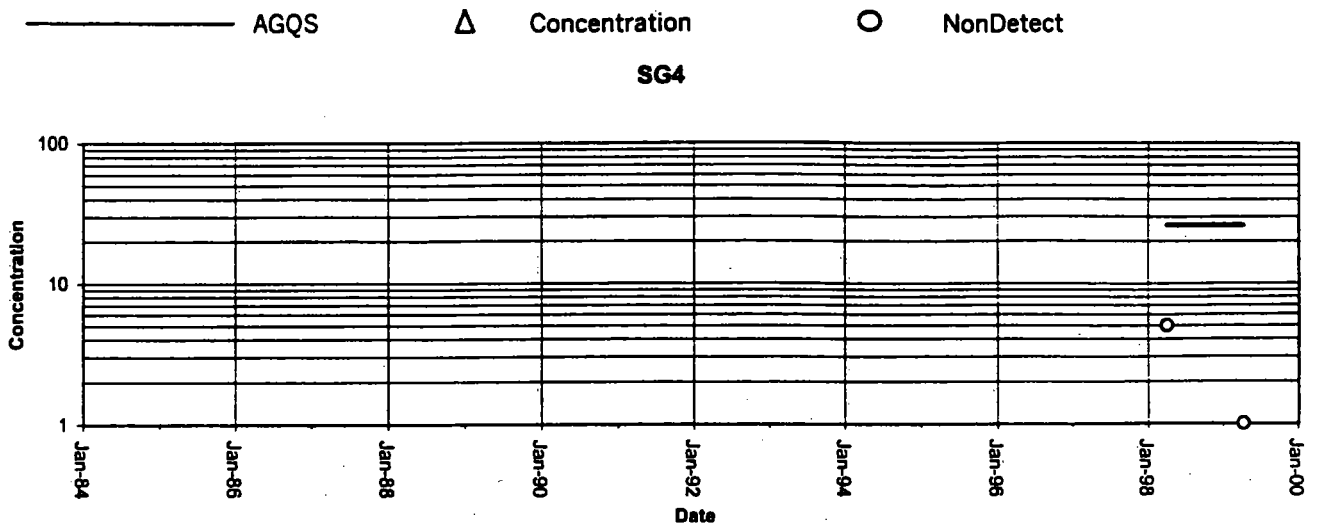
SG1



SG3



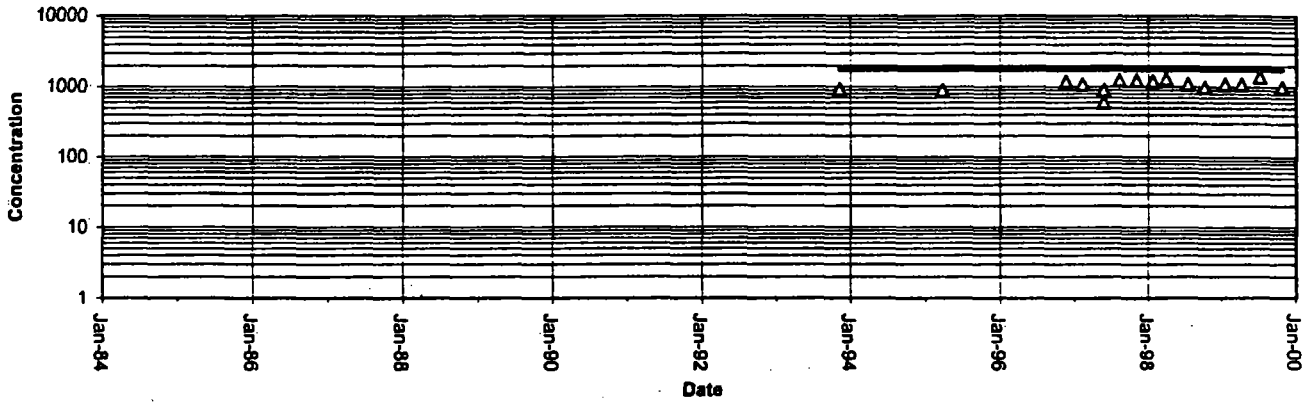
Tetrachloroethene (ug/L)



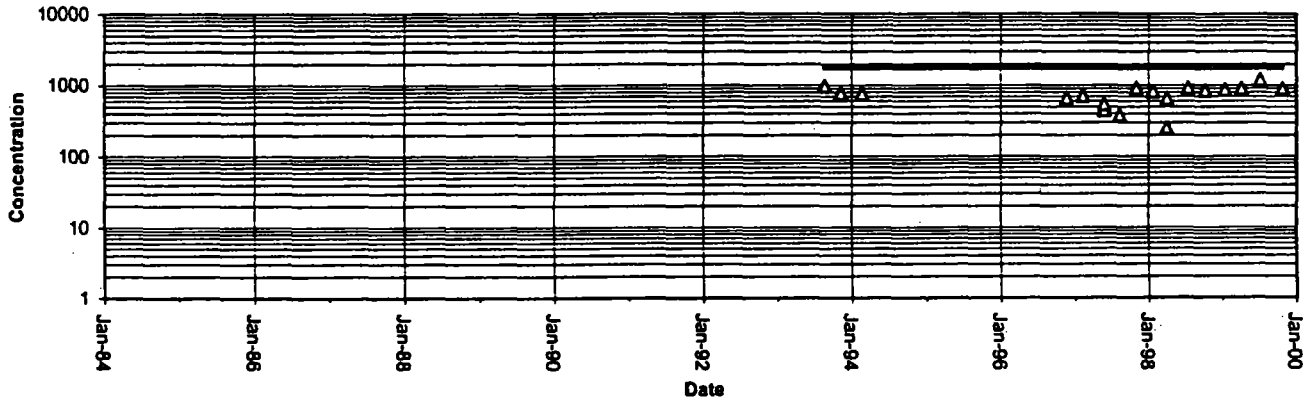
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

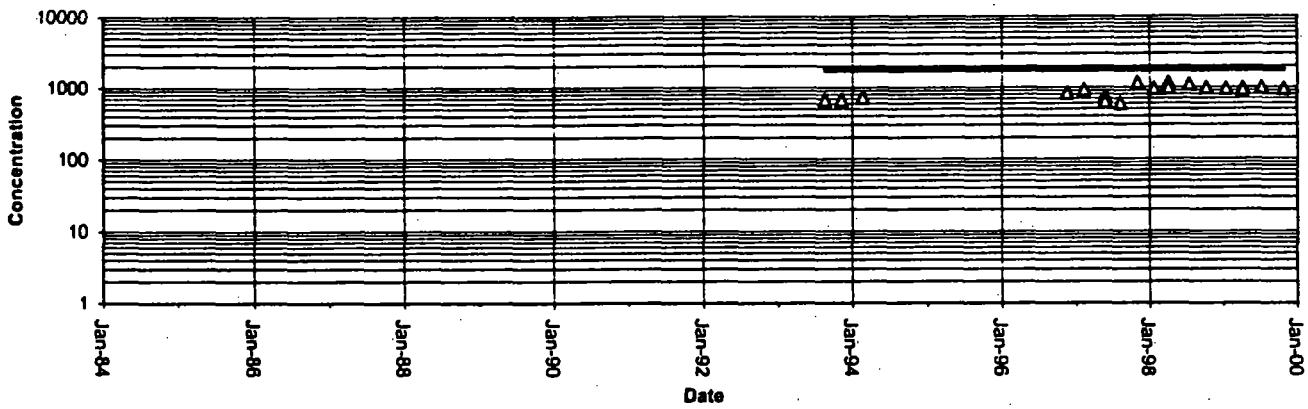
B15R



G109



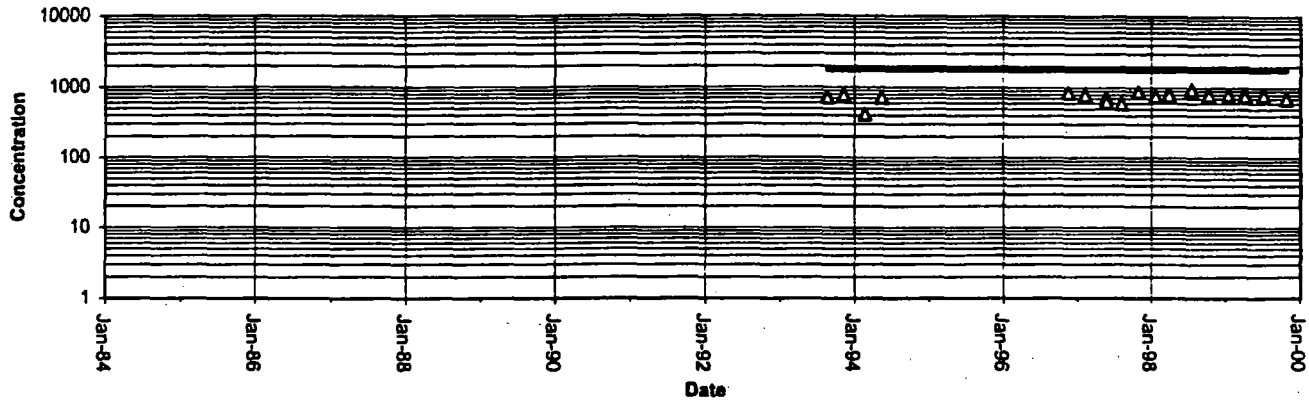
G109A



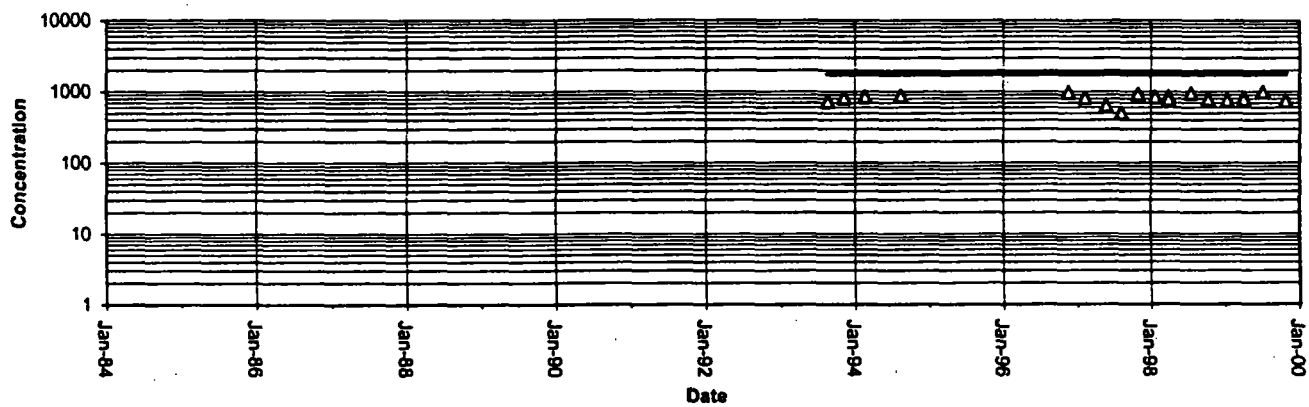
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

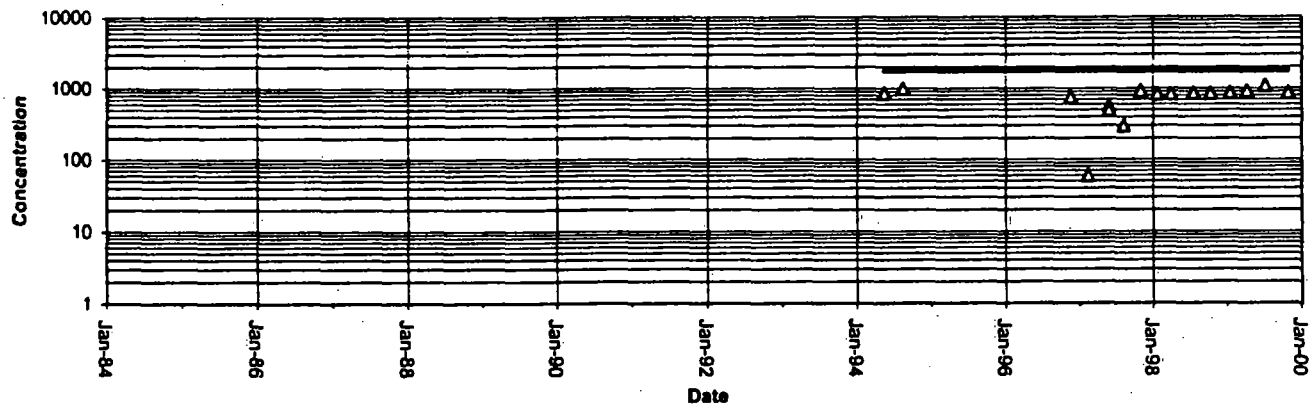
G113



G113A



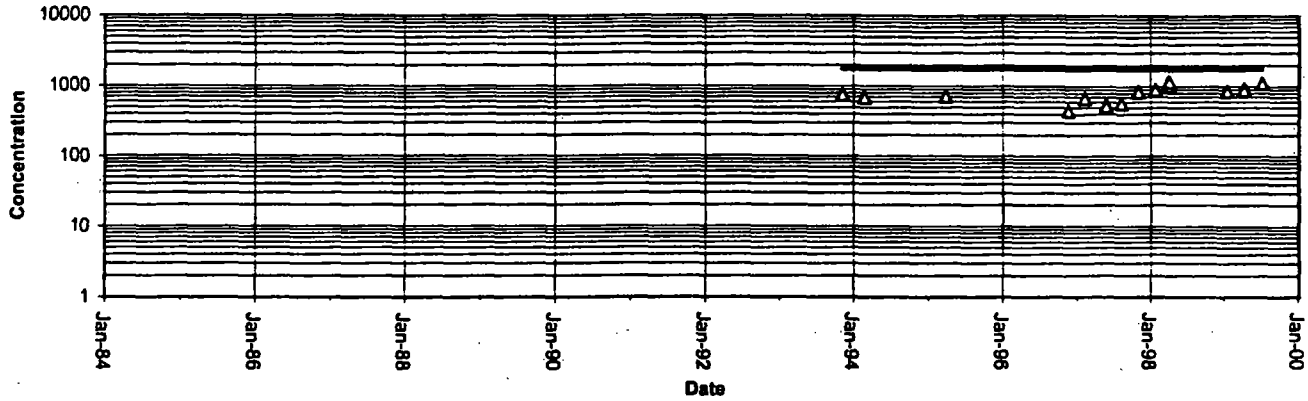
G114



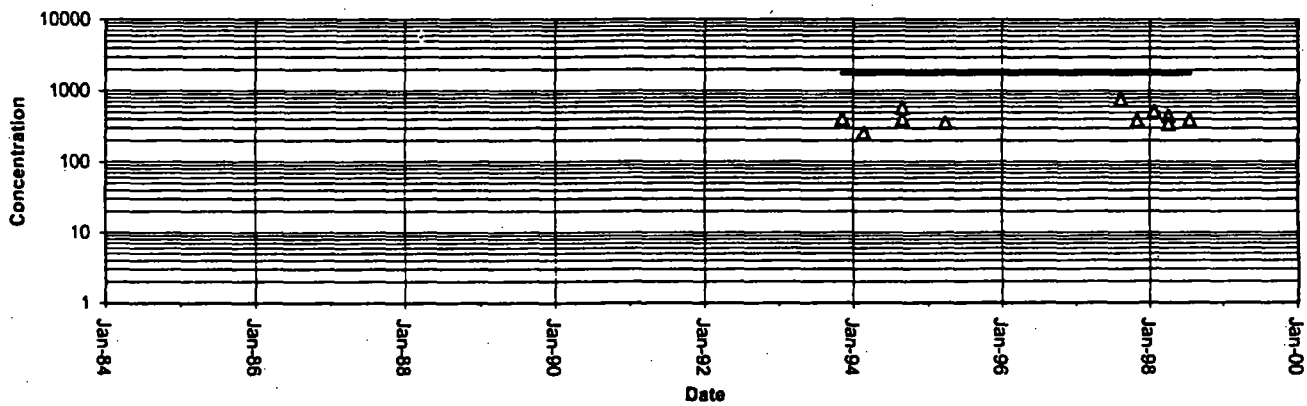
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

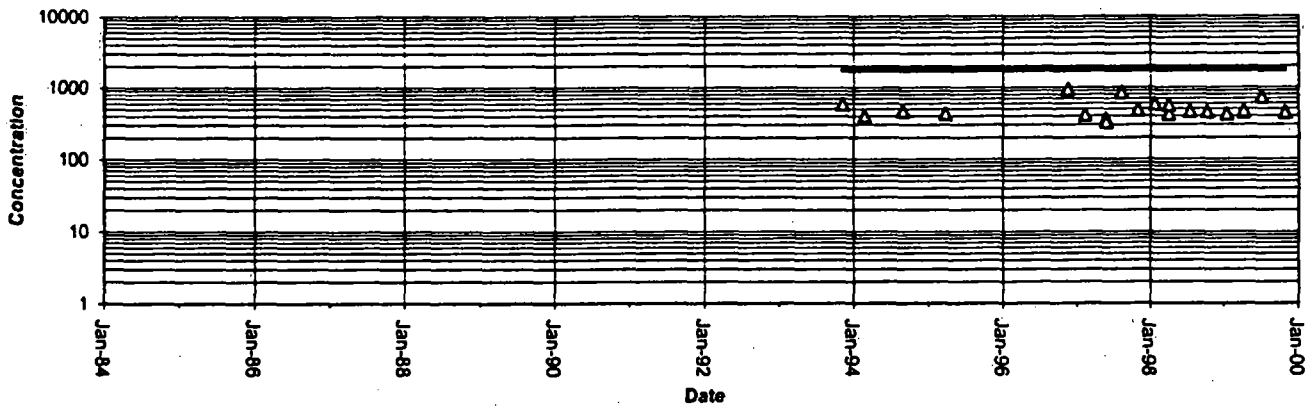
G115



G116



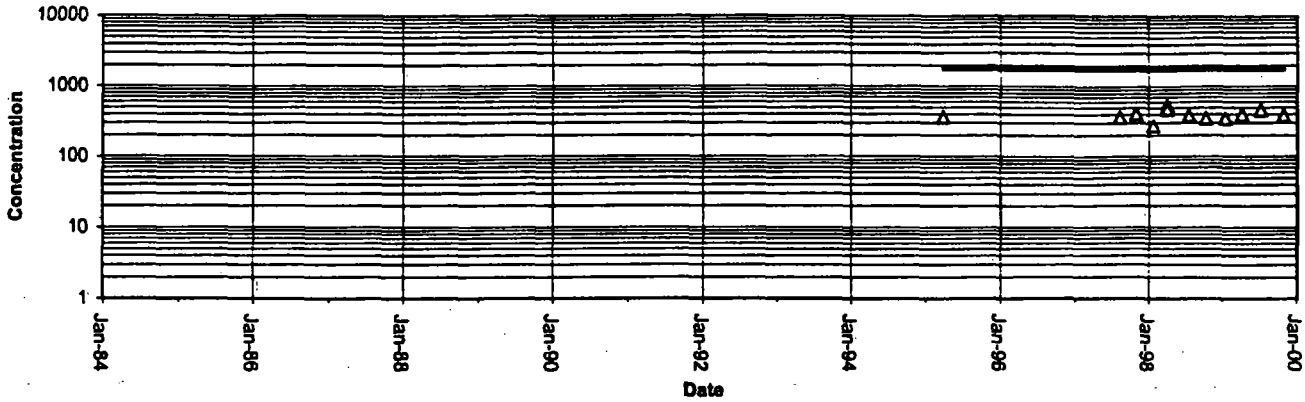
G116A



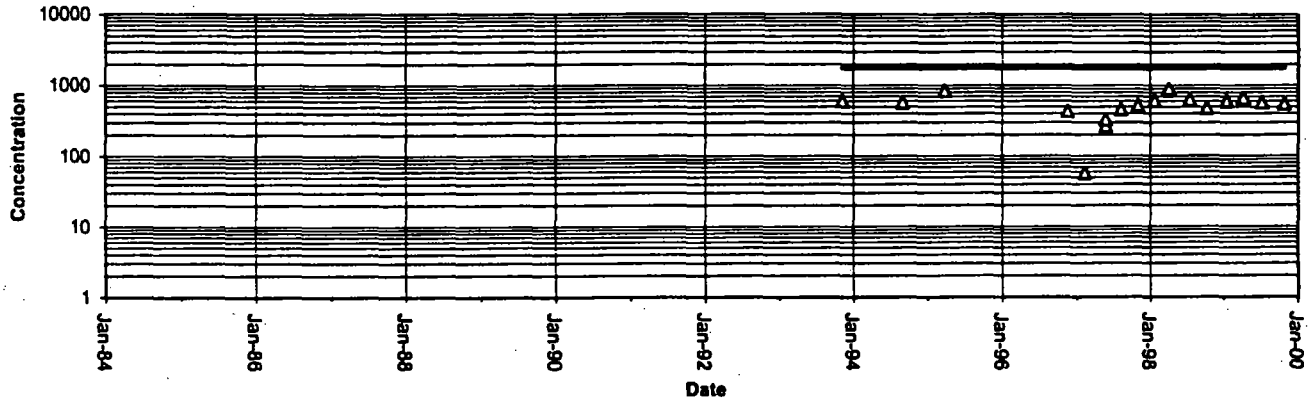
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

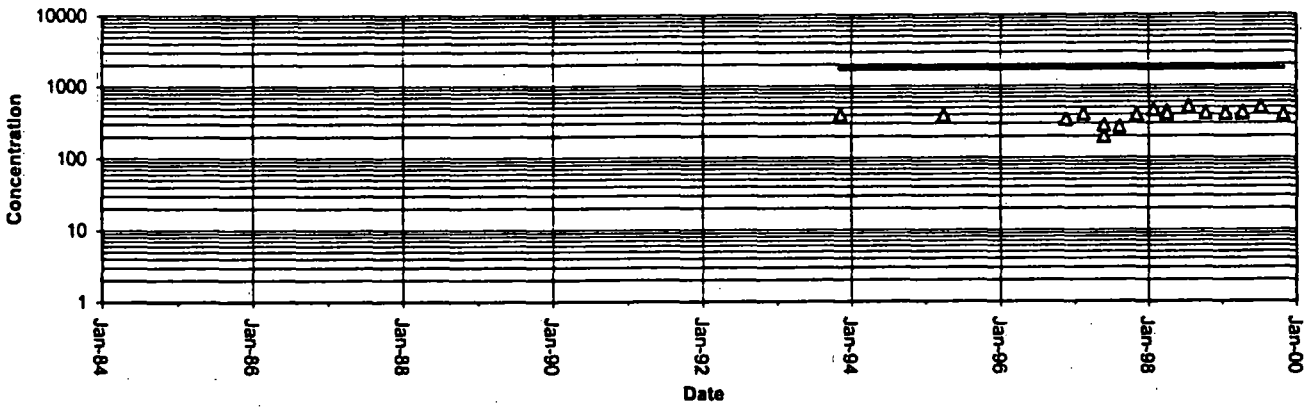
G116D



G117



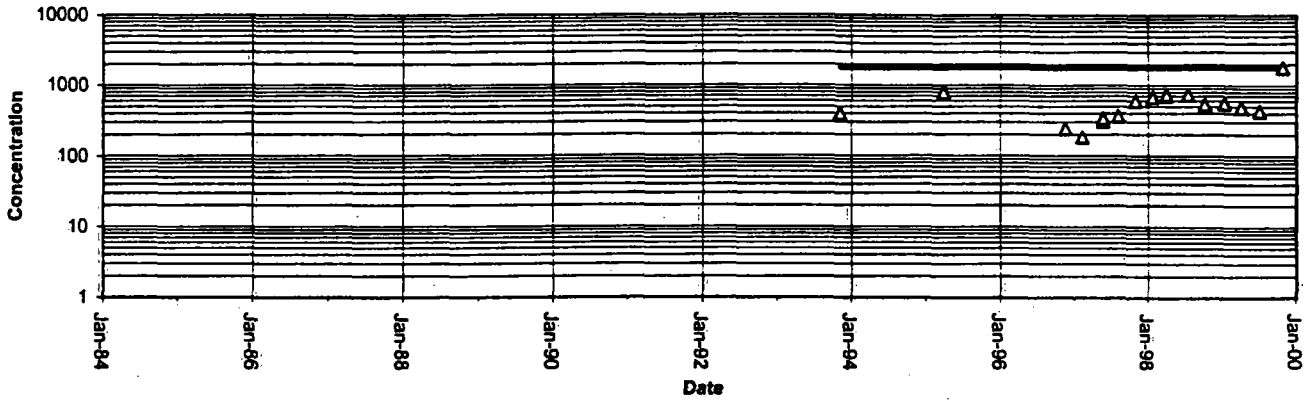
G118A



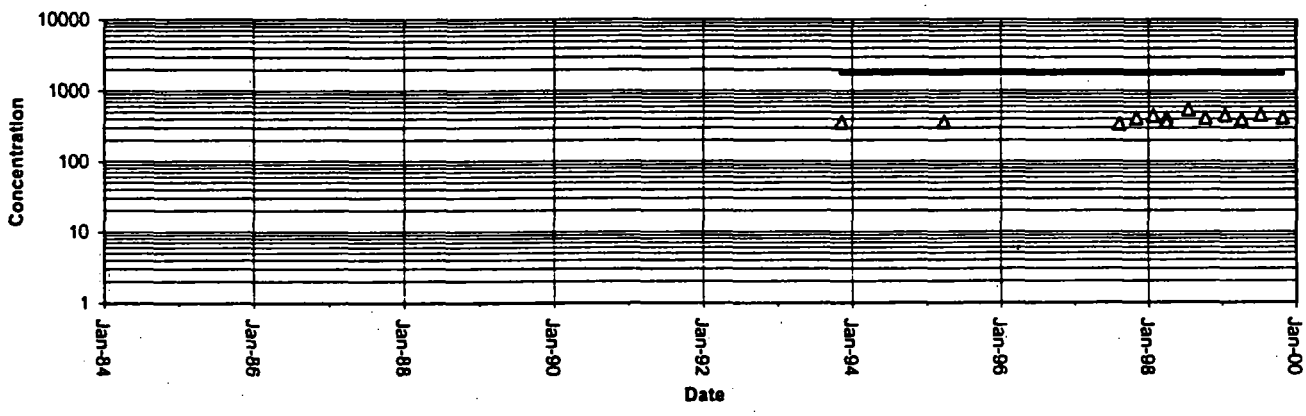
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

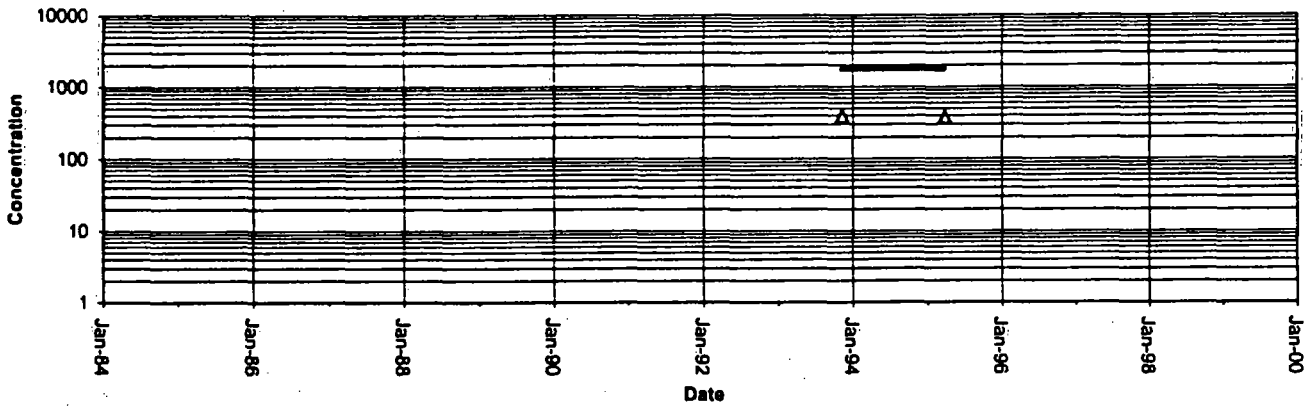
G118R



G119



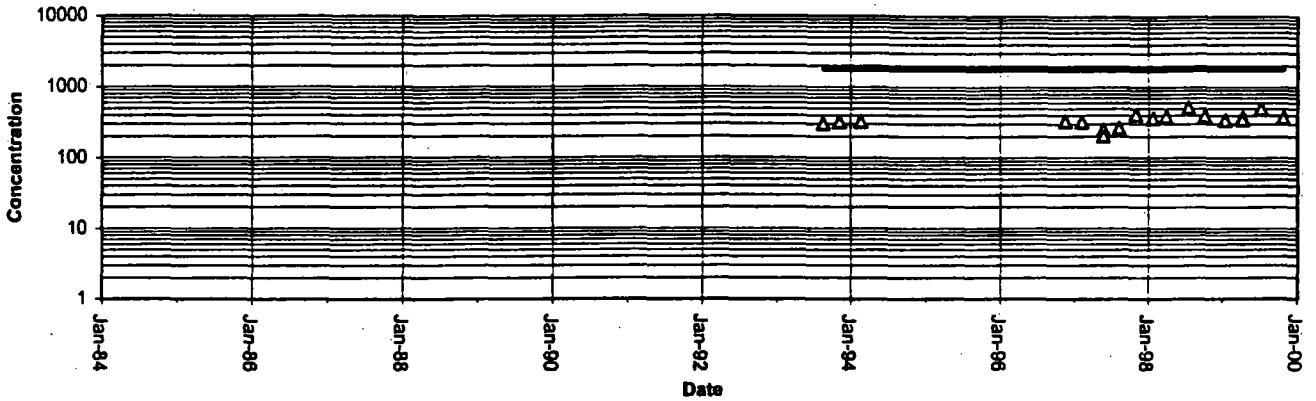
G119A



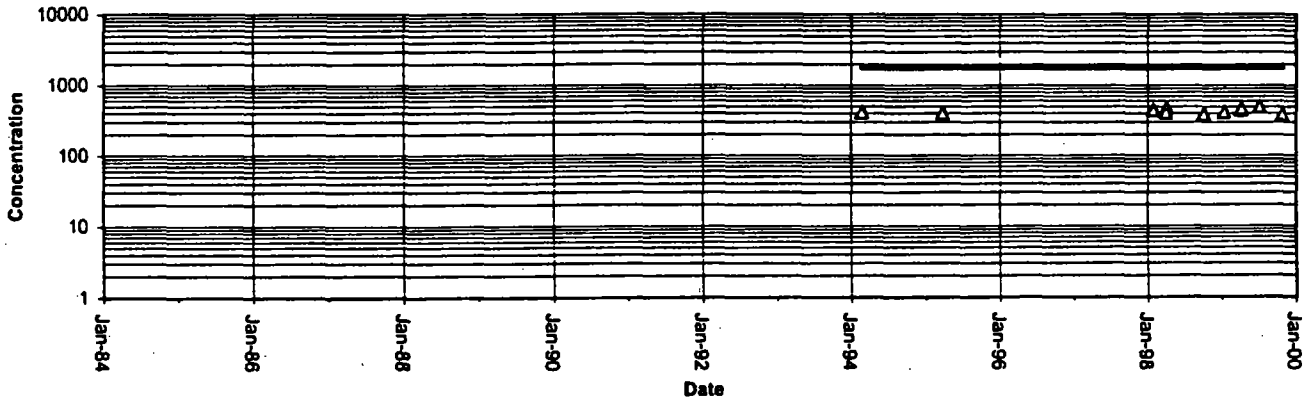
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

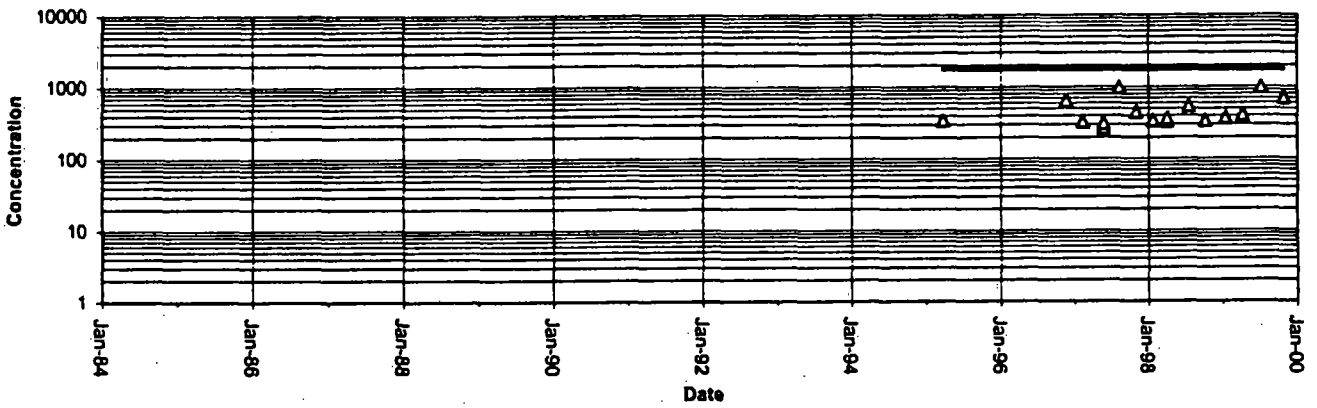
G120B



G130



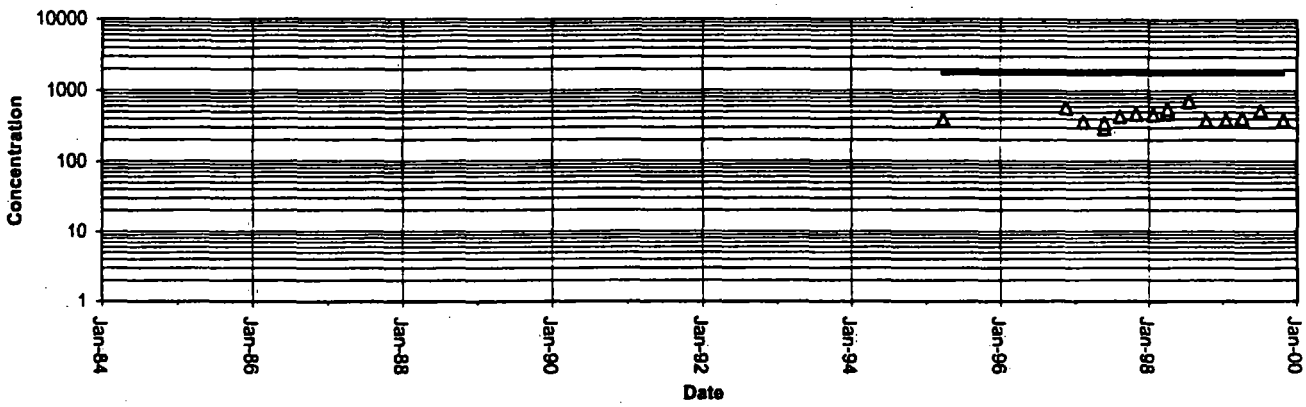
G132



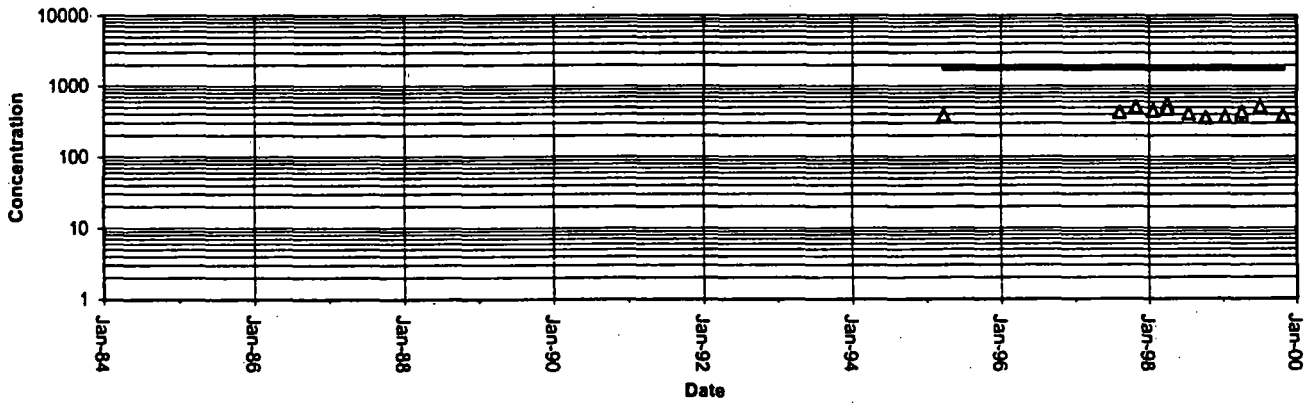
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

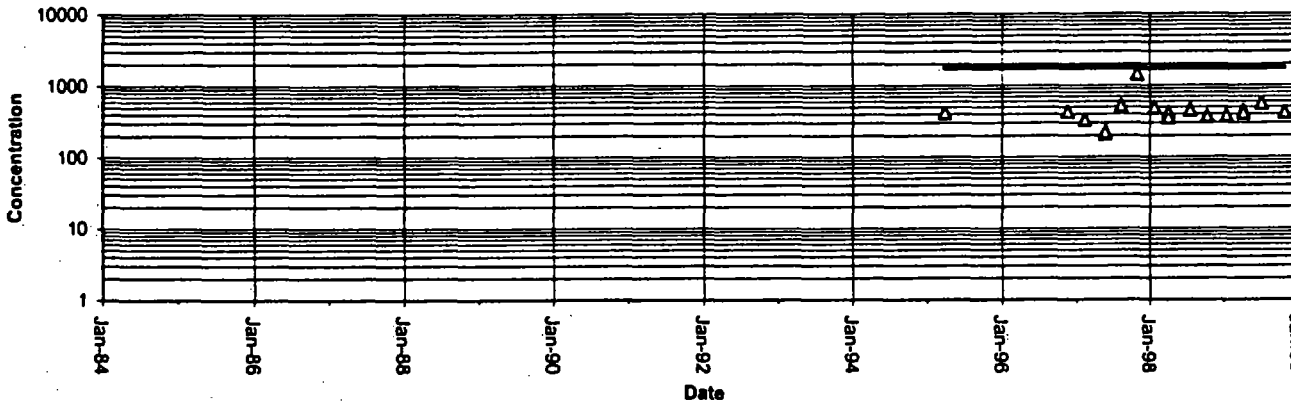
G33D



G33S



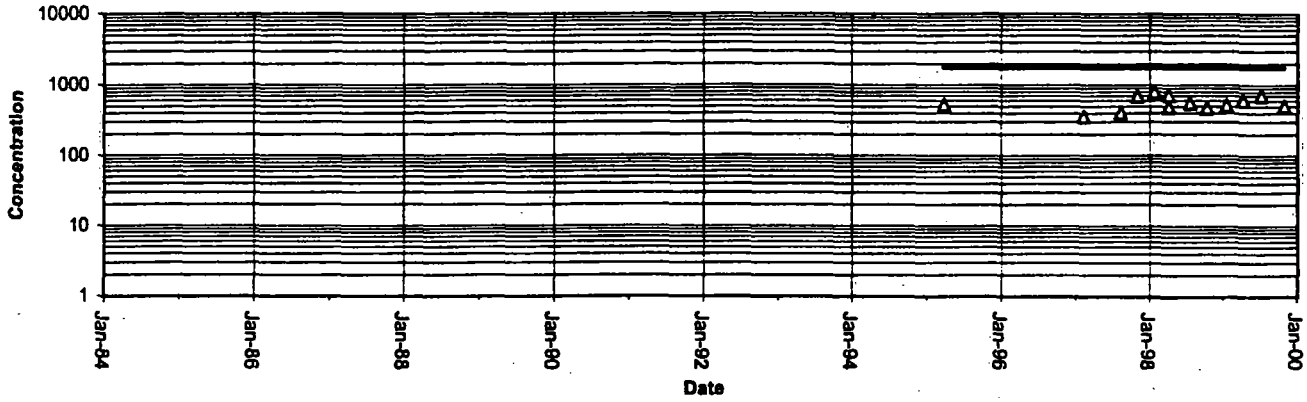
G34D



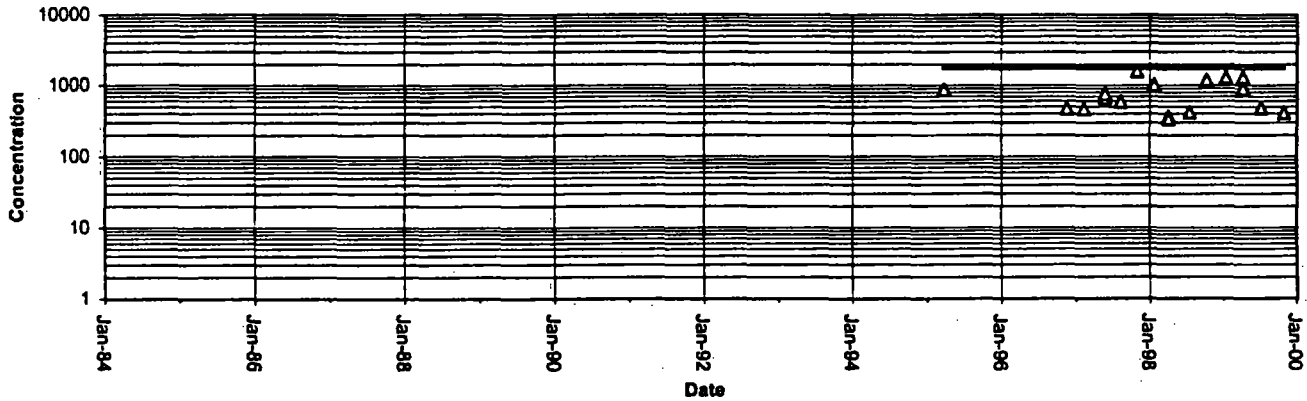
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

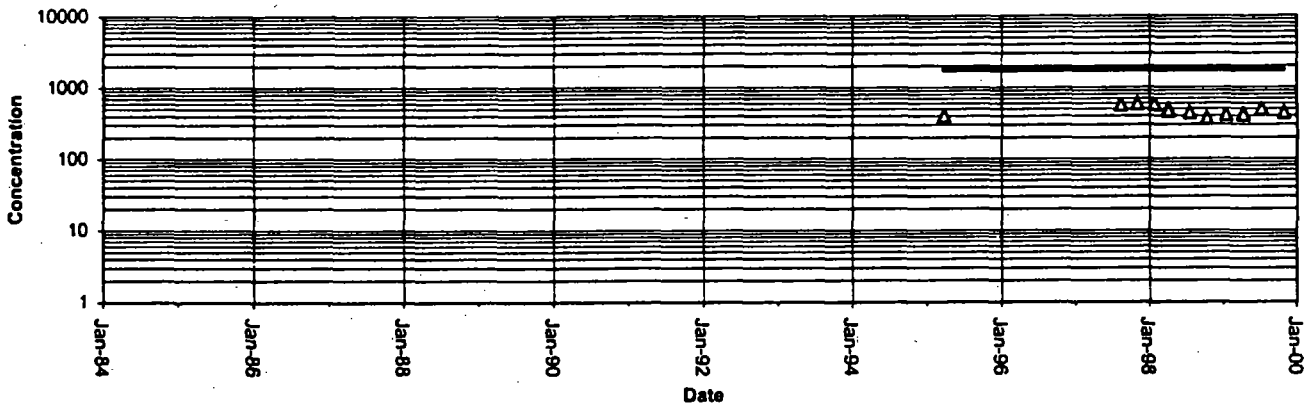
G34S



G35D



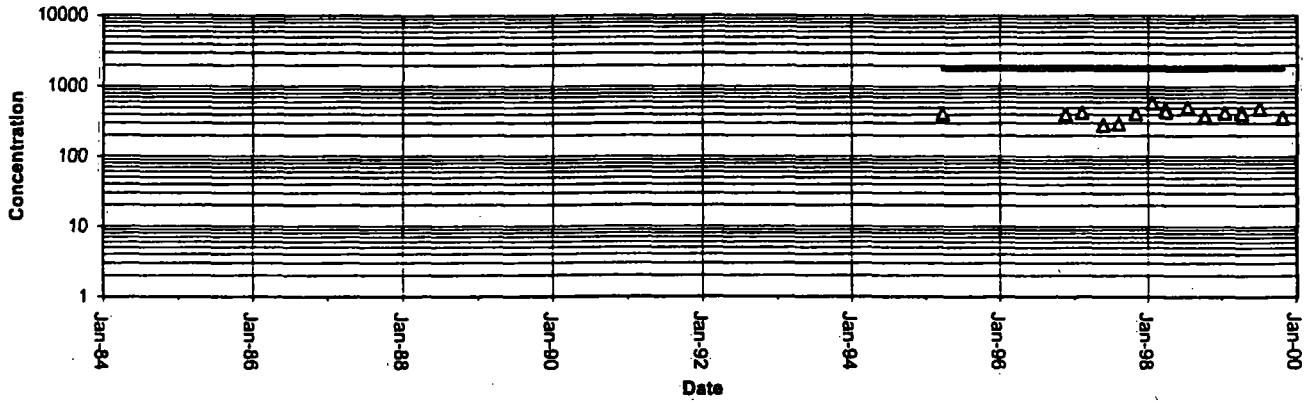
G35S



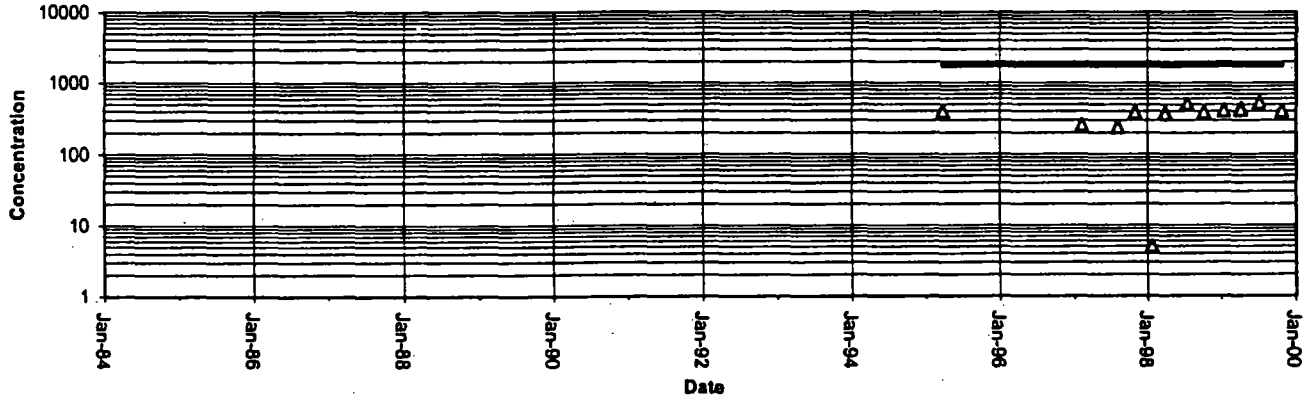
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

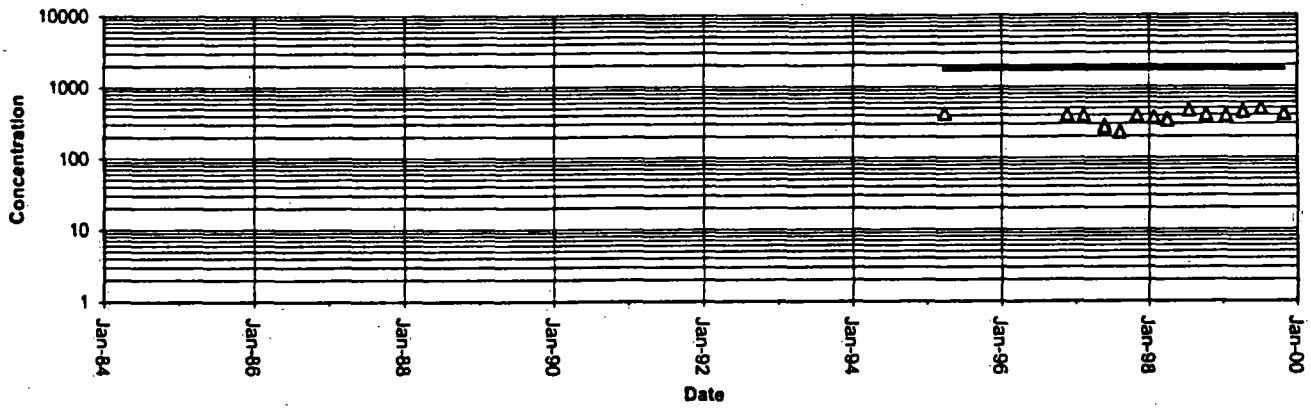
G36



G37D



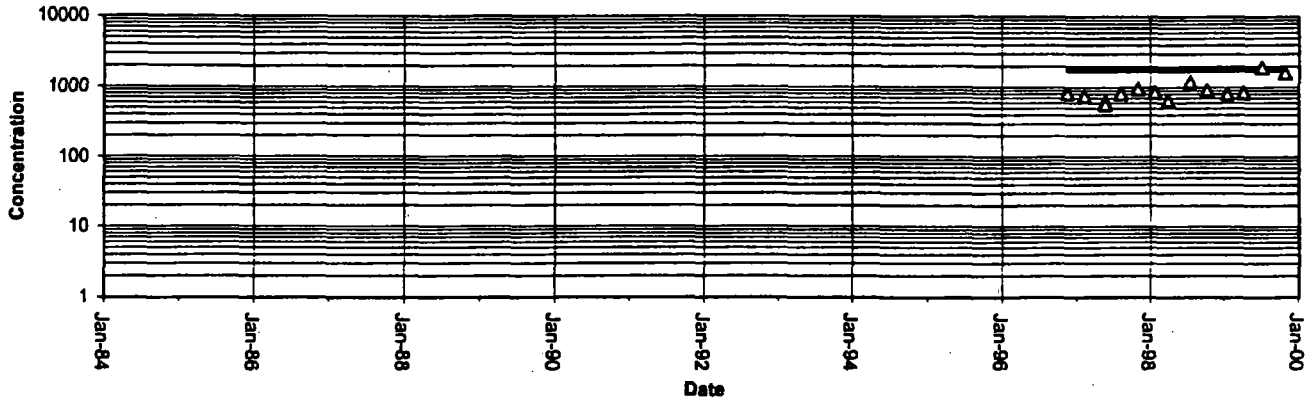
G37S



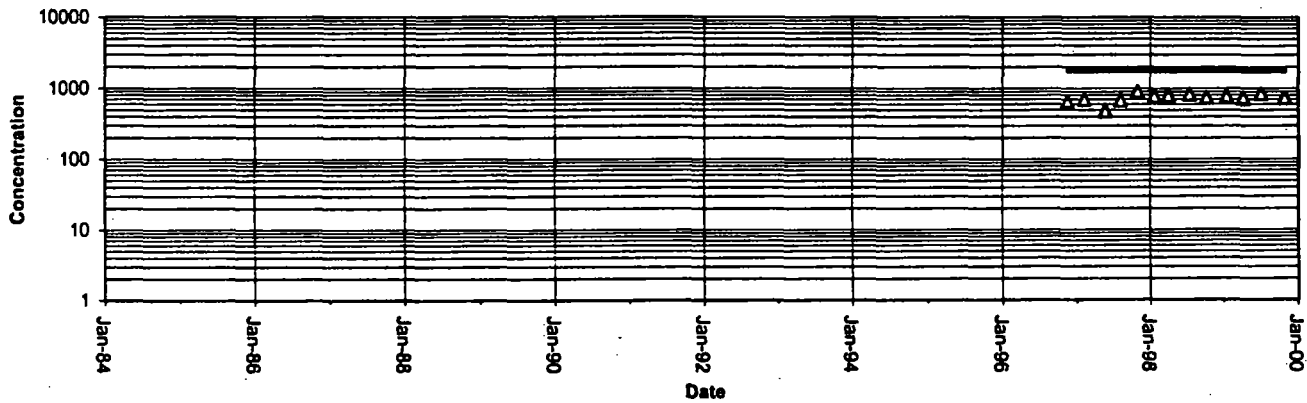
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

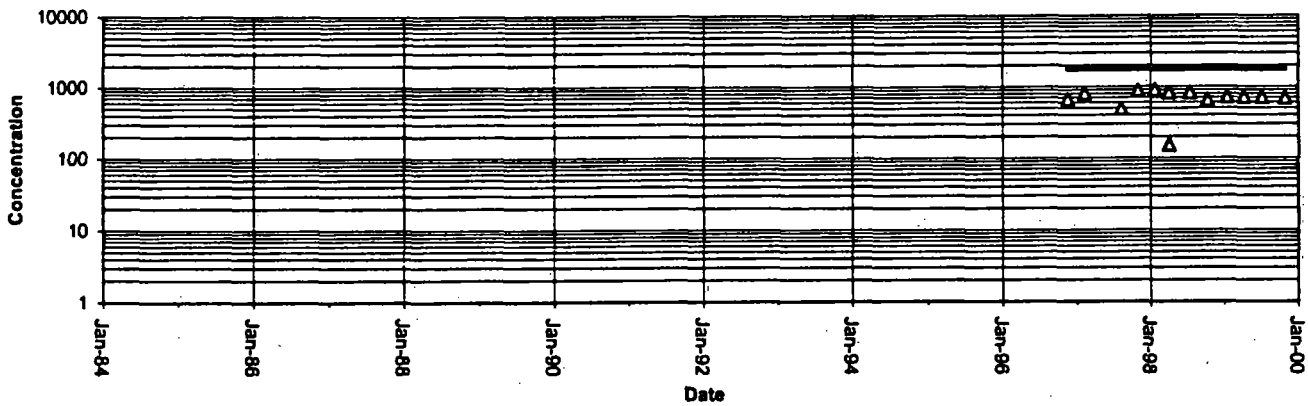
G38



G39



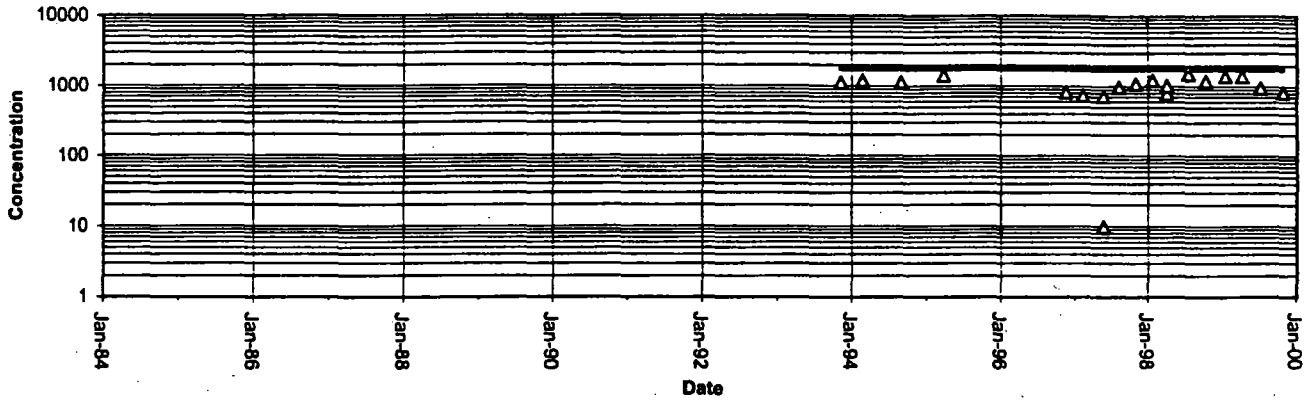
G40



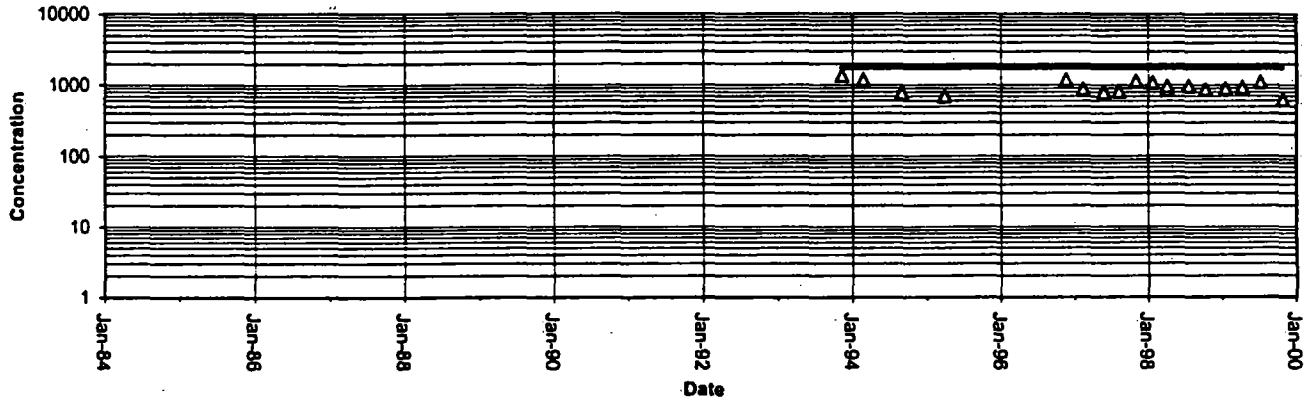
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

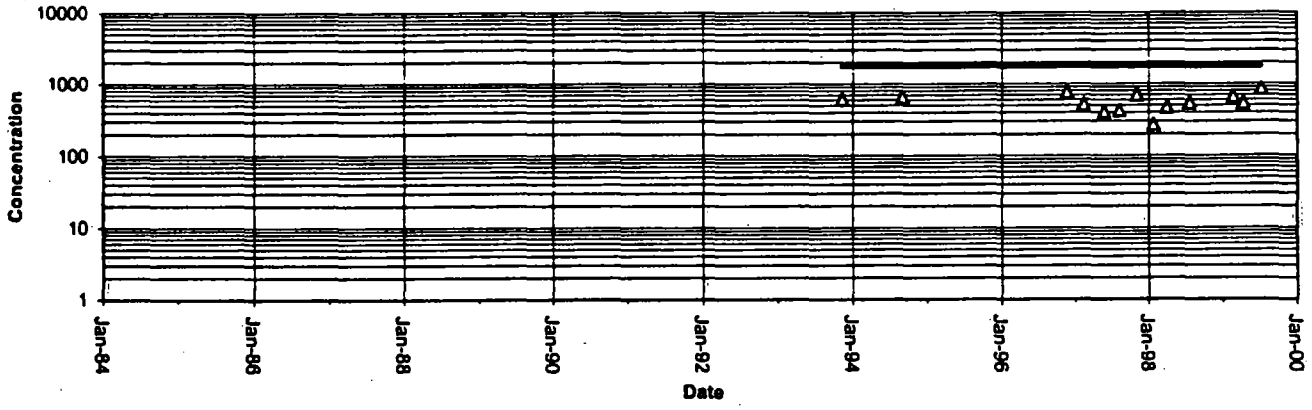
MW106



P1



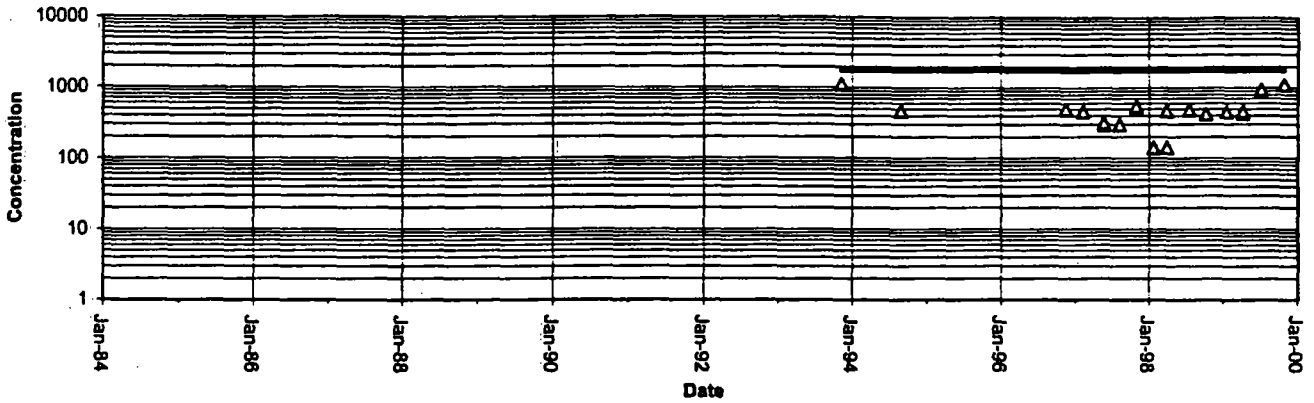
P3R



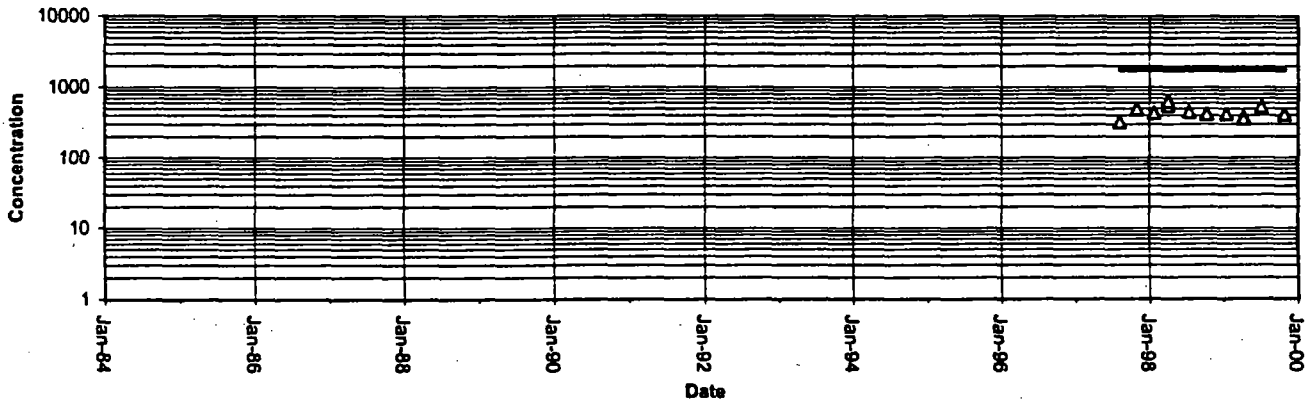
Total Dissolved Solids (TDS) (mg/L)

AGQS Δ Concentration O NonDetect

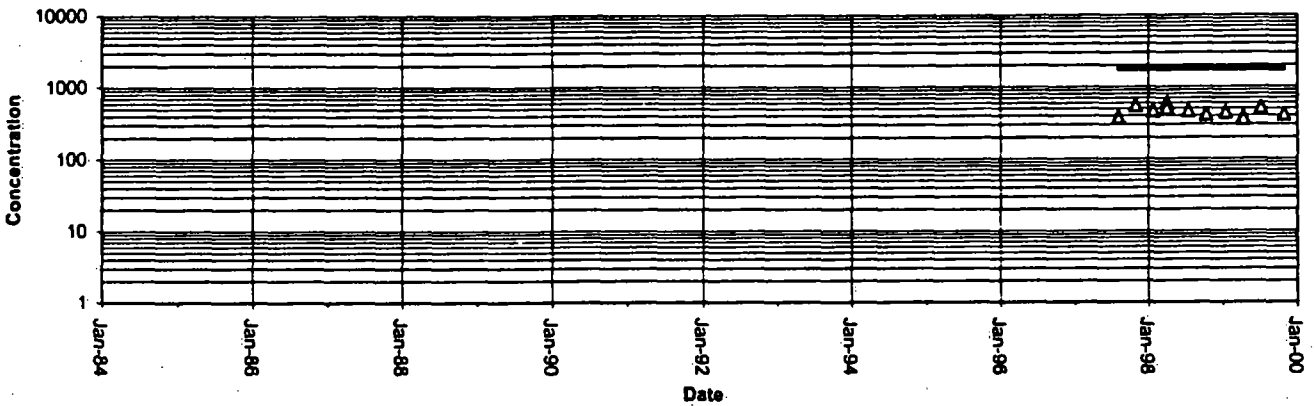
P4R



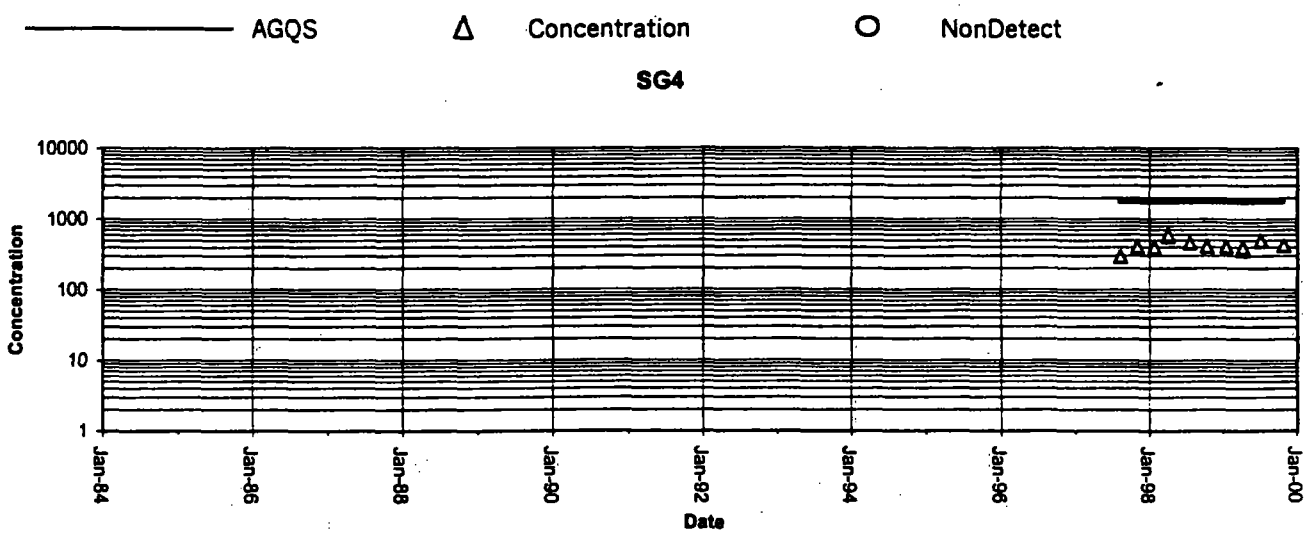
SG1



SG3



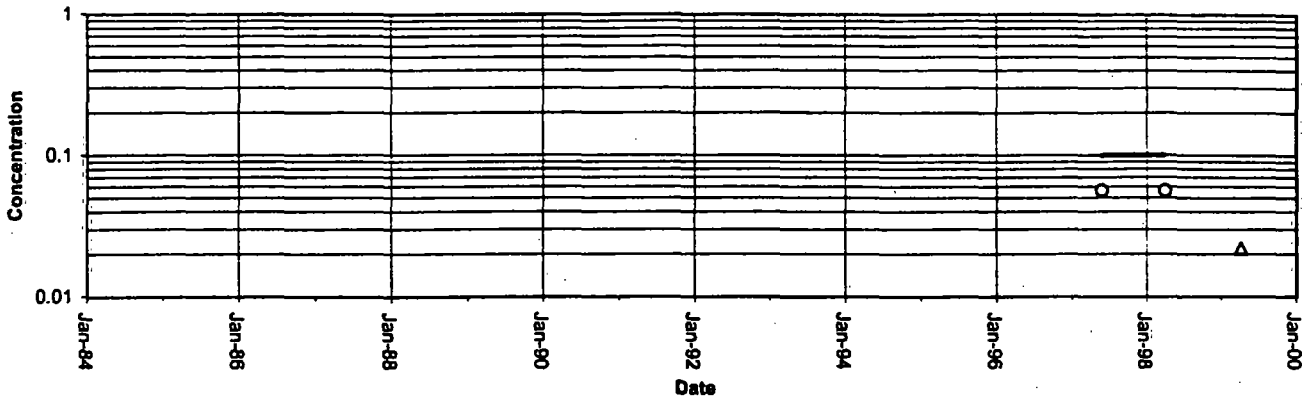
Total Dissolved Solids (TDS) (mg/L)



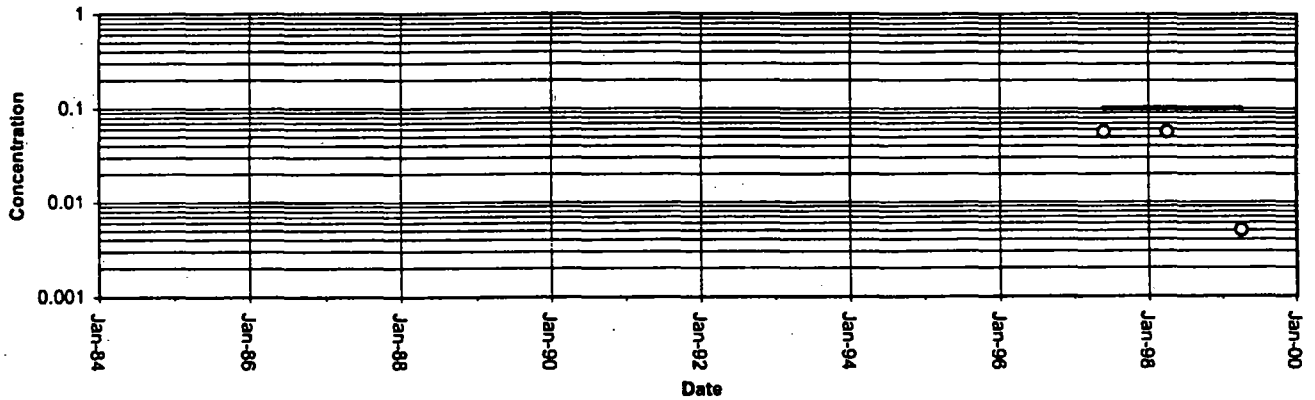
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

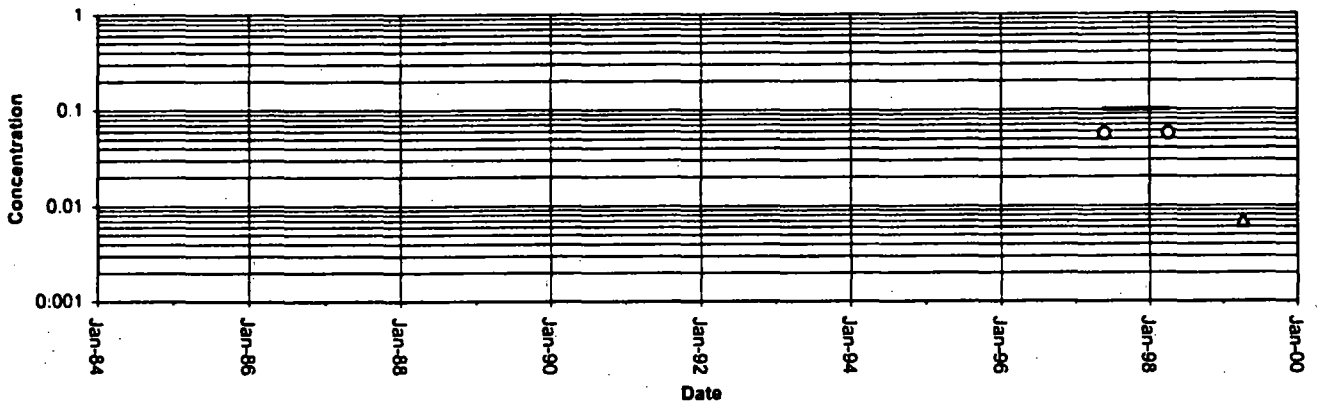
B15R



G109



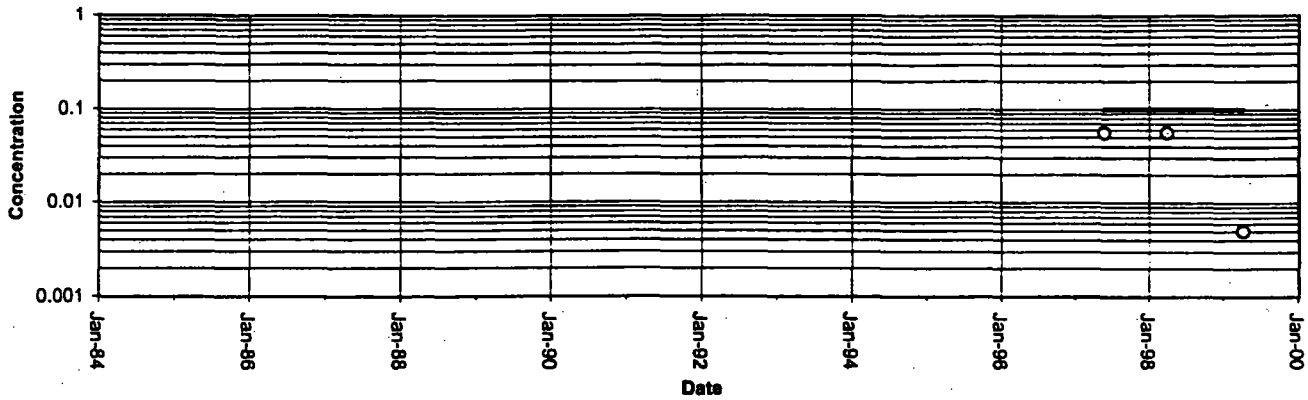
G109A



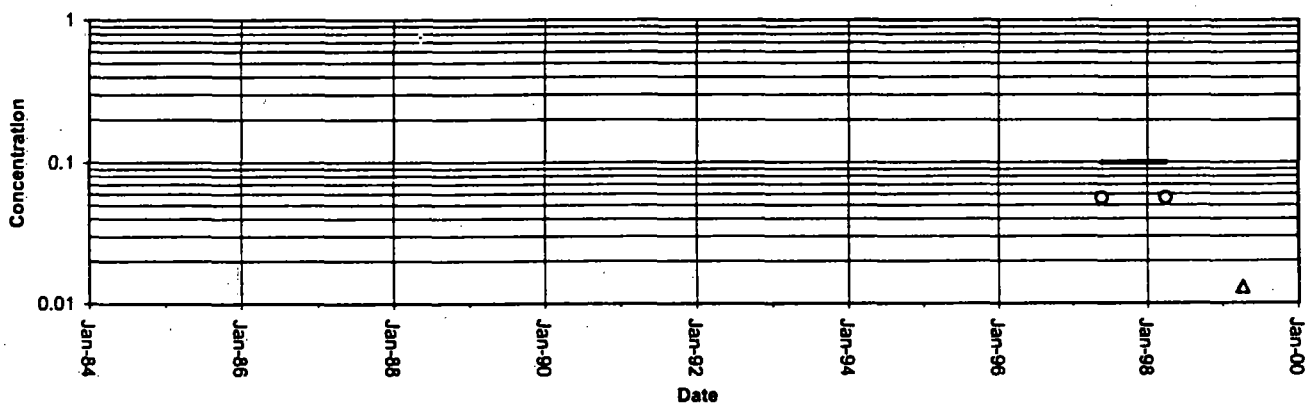
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

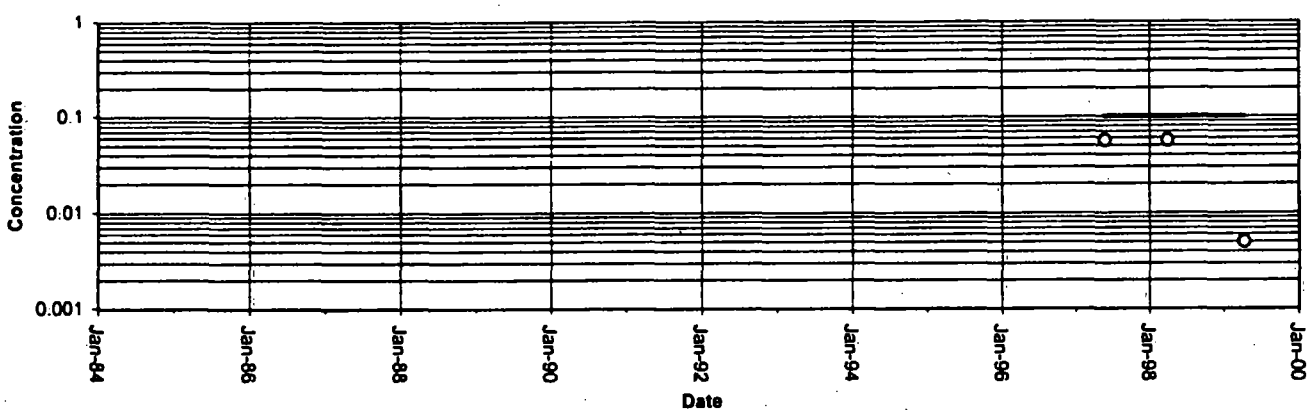
G113



G113A



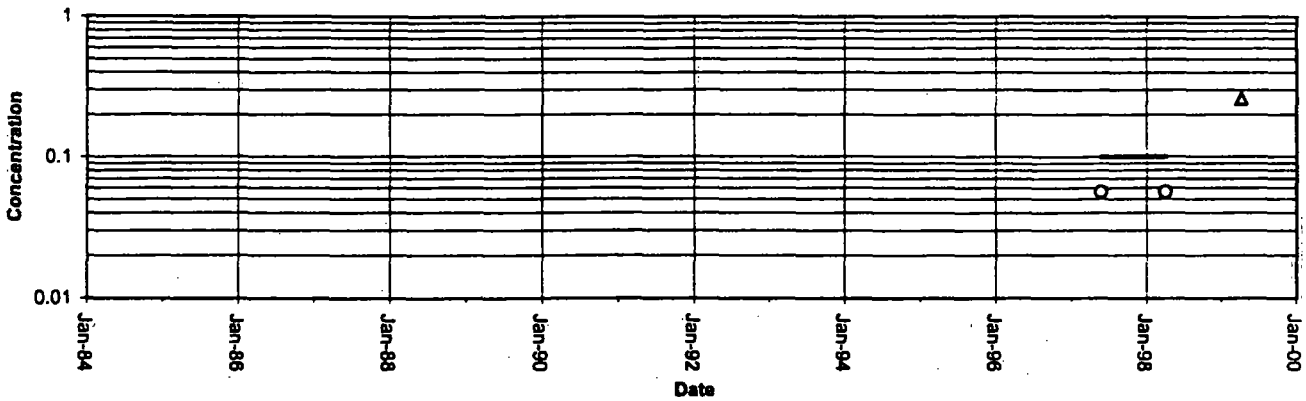
G114



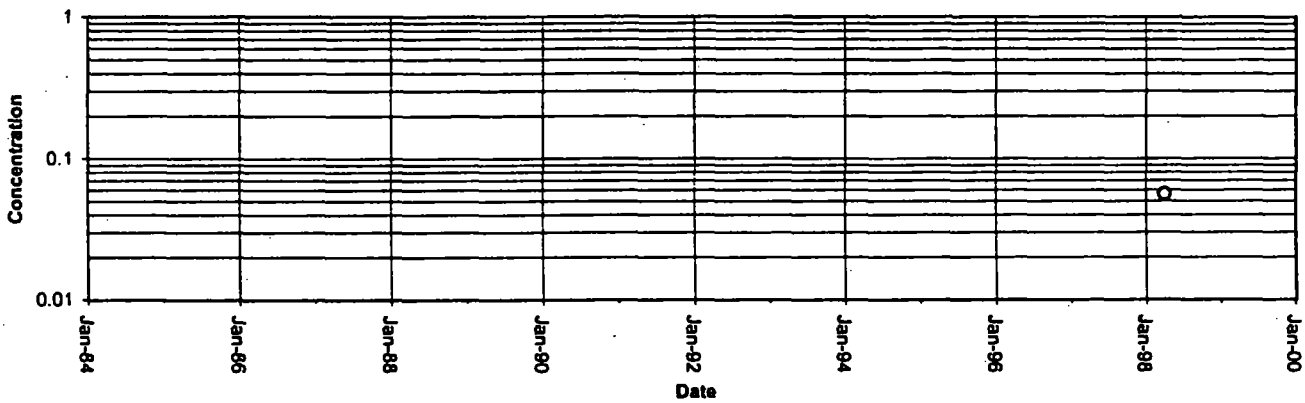
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

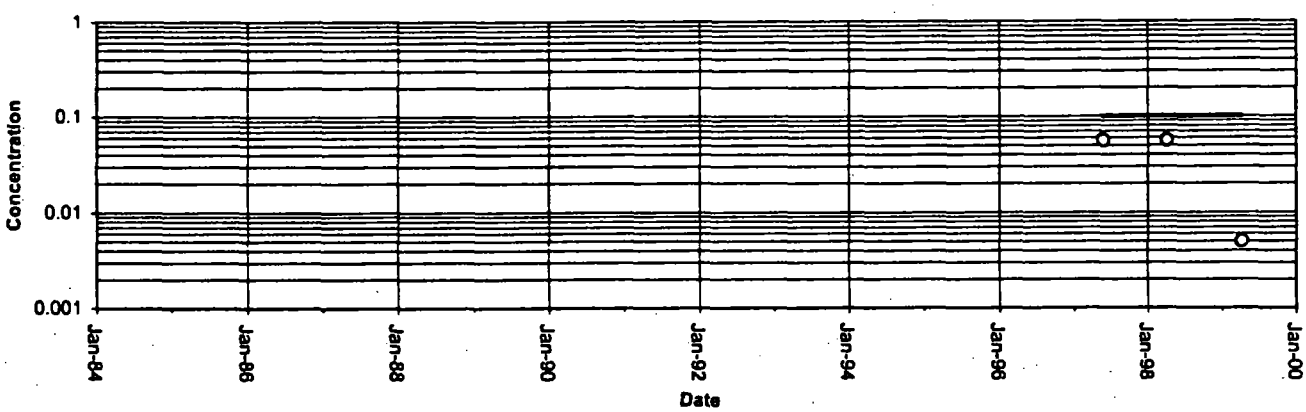
G115



G116



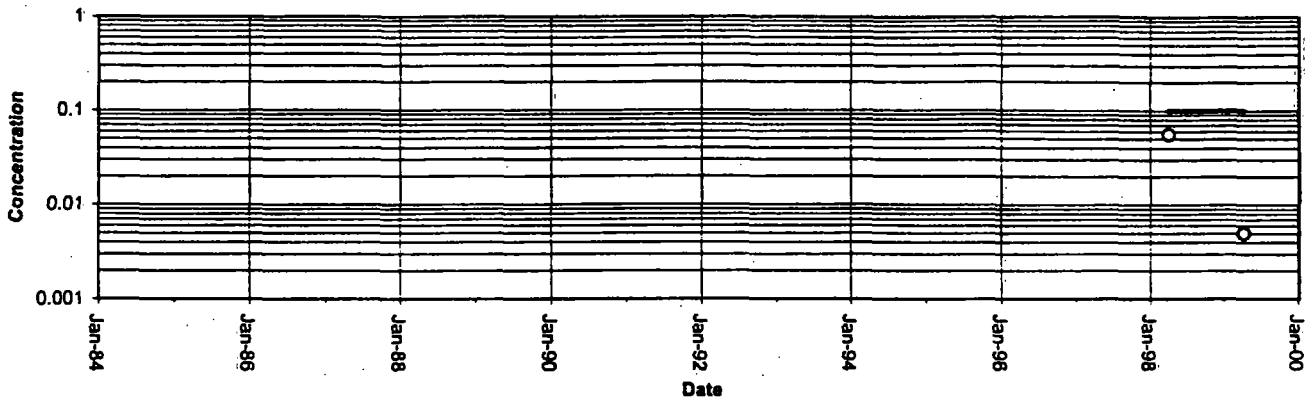
G116A



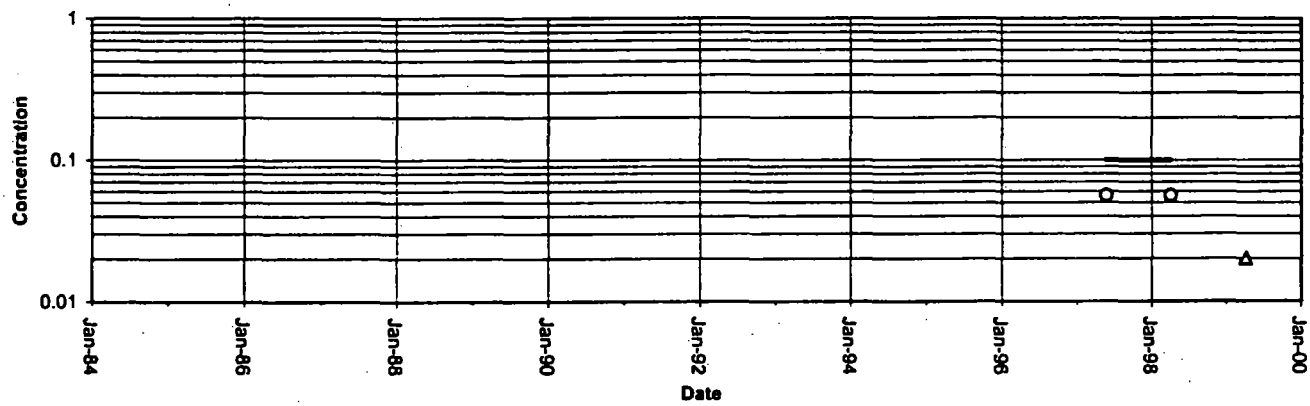
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

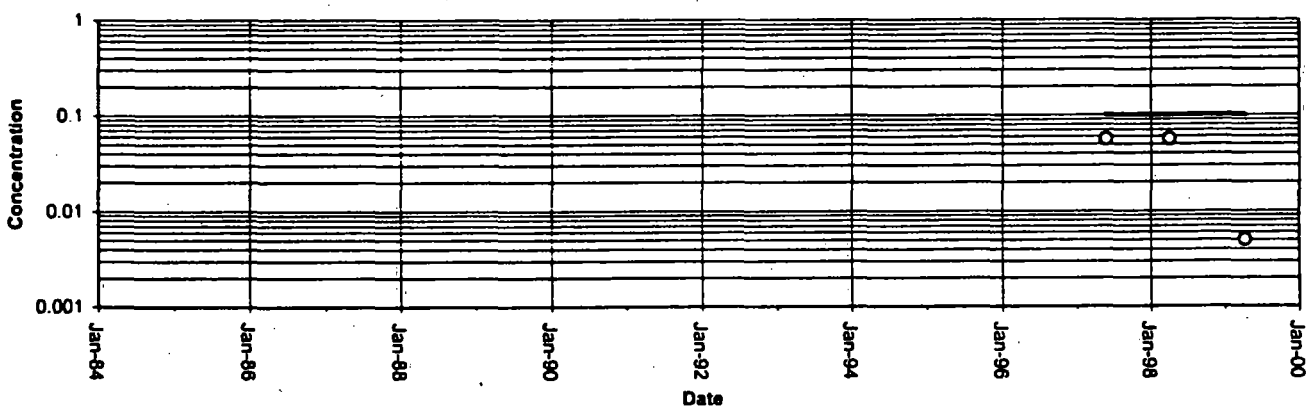
G116D



G117



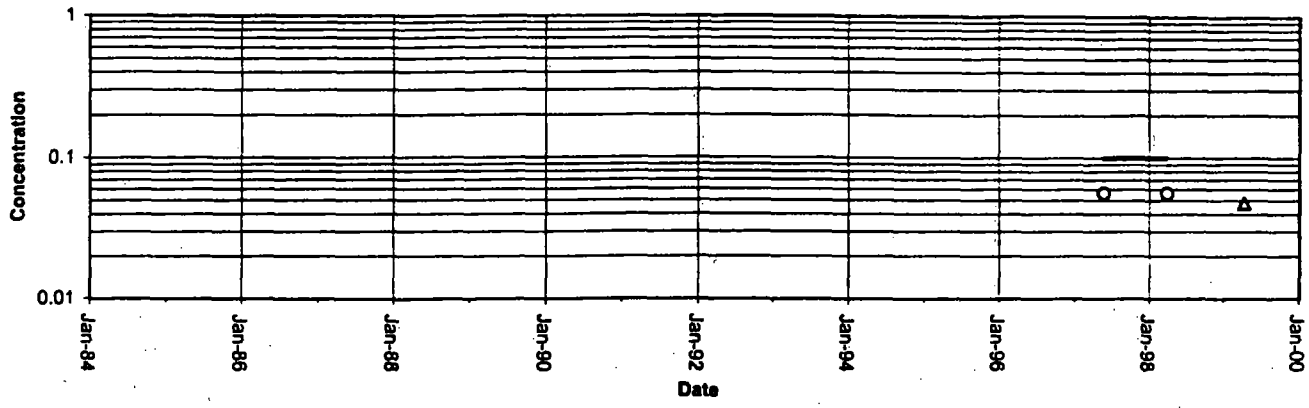
G118A



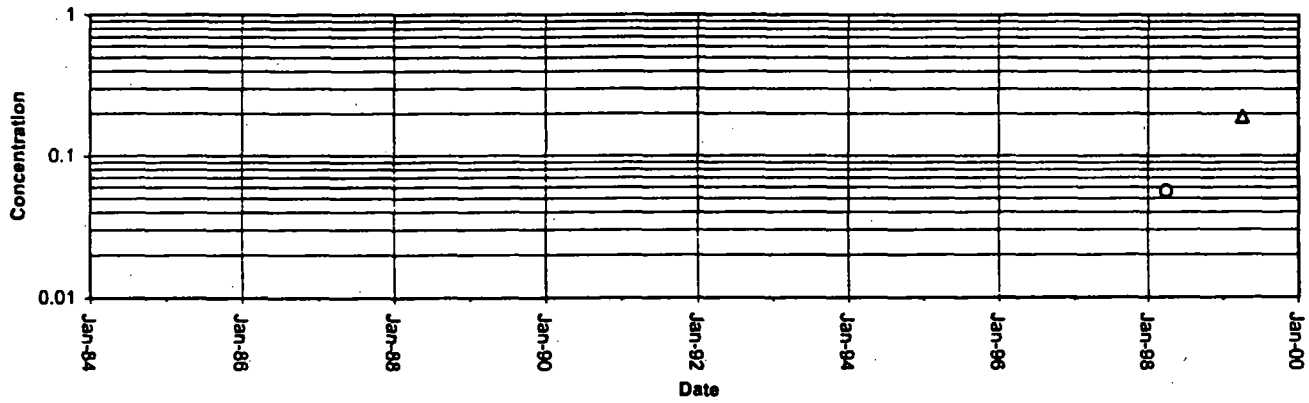
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

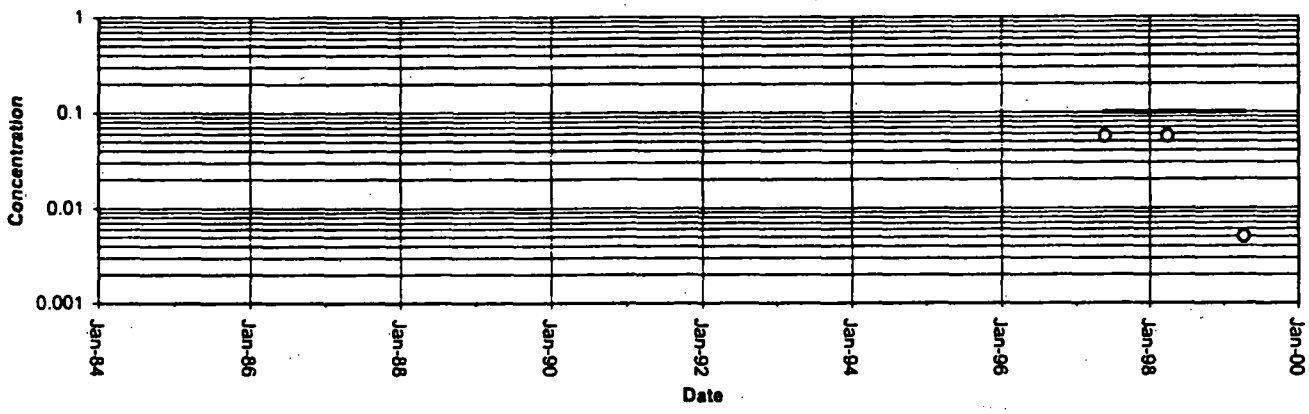
G118R



G119



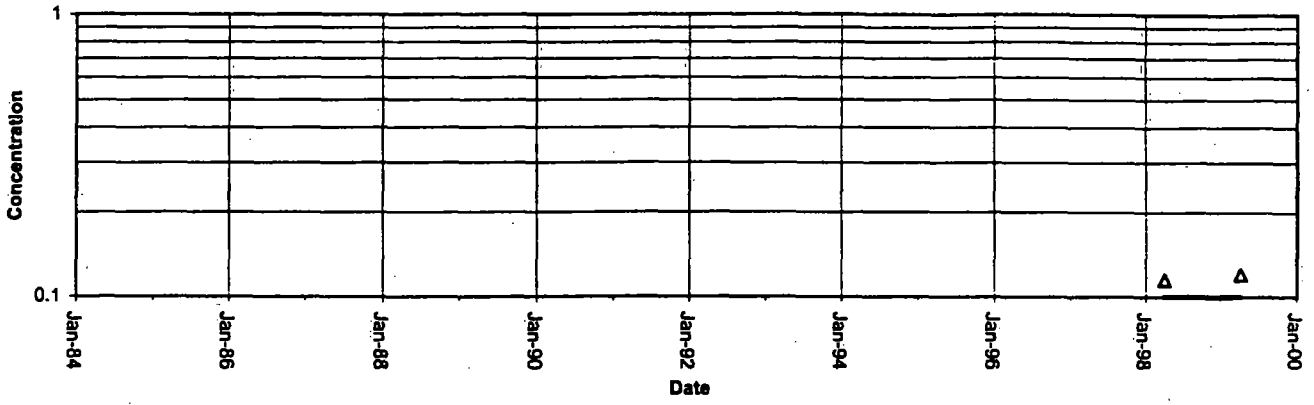
G120B



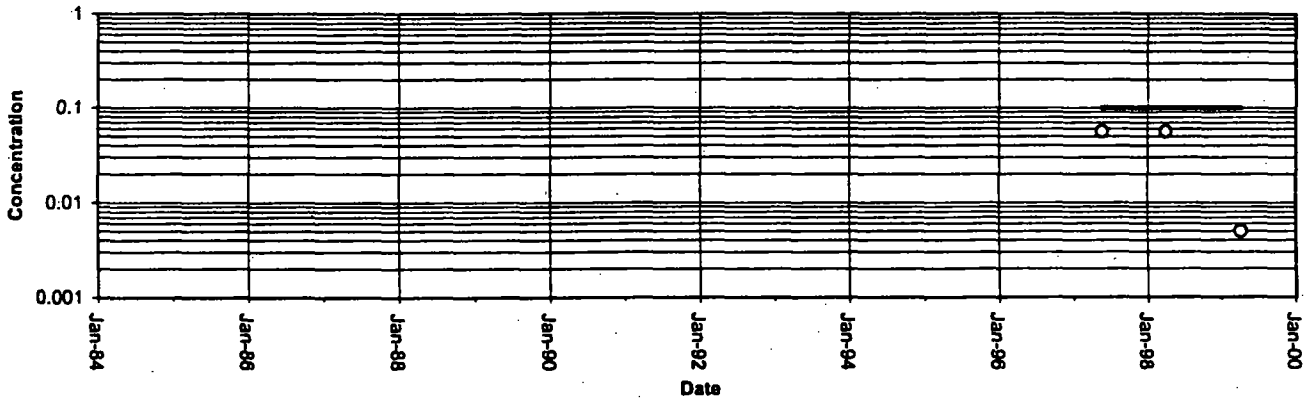
Vanadium (mg/L)

AGQS Concentration NonDetect

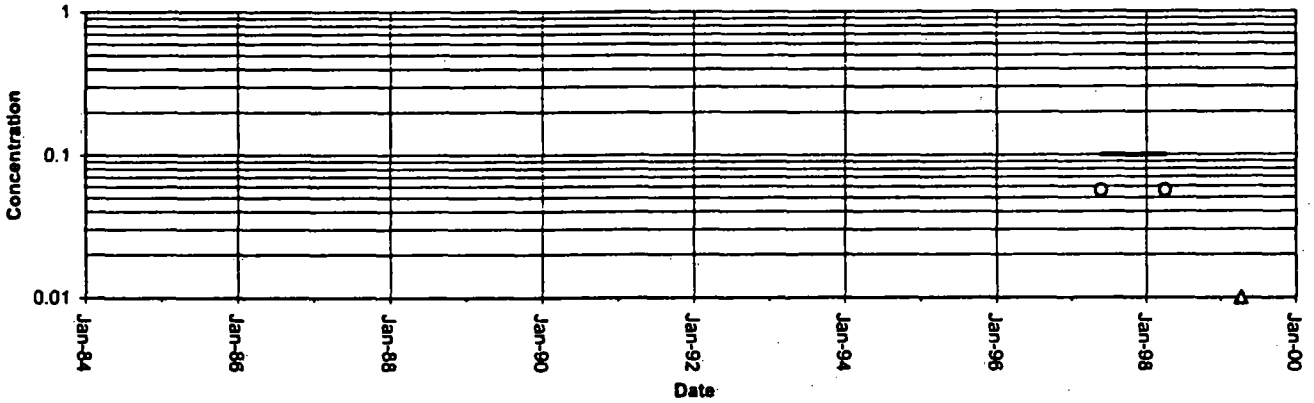
G130



G132



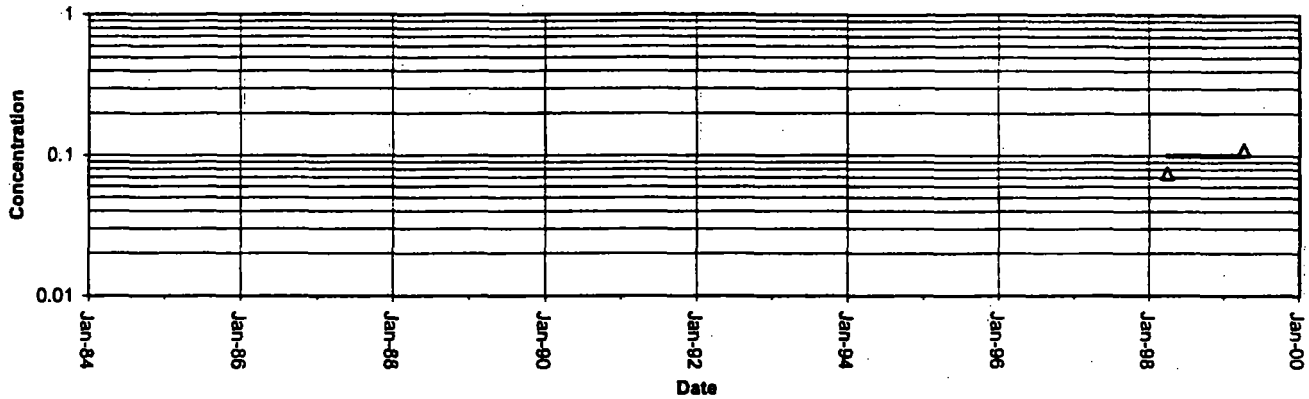
G33D



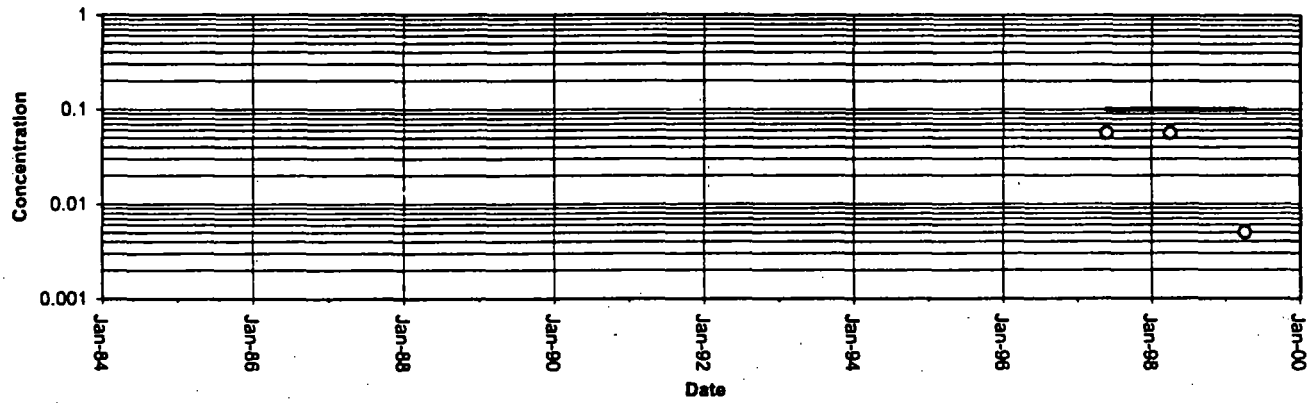
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

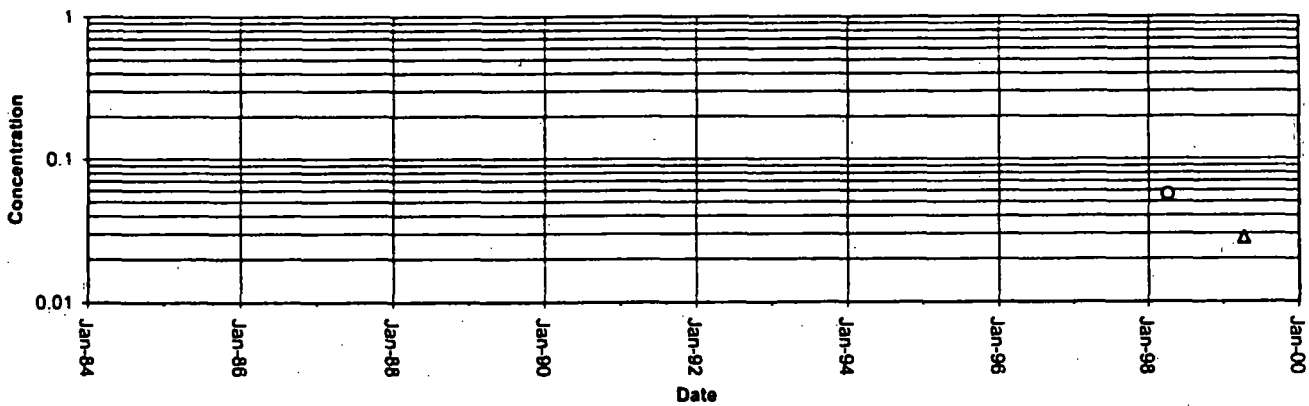
G33S



G34D



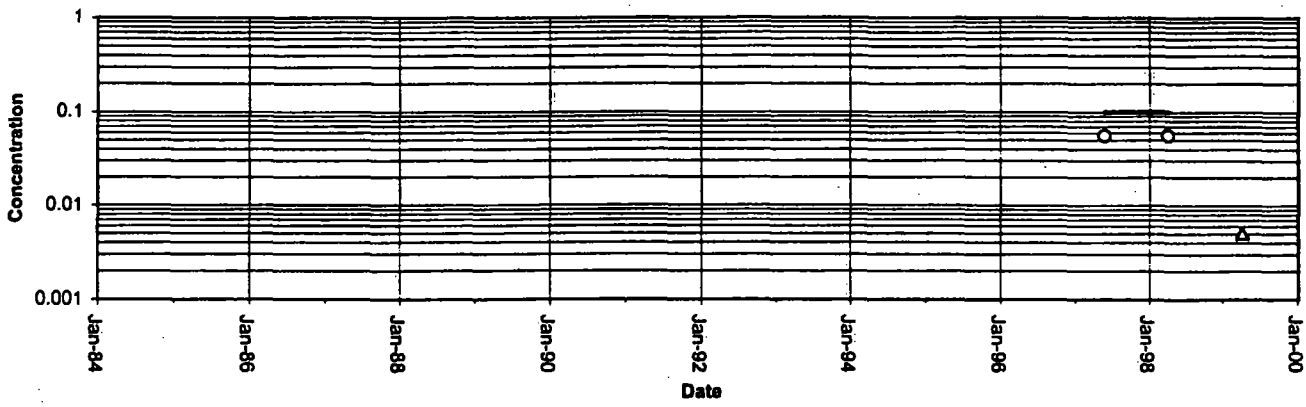
G34S



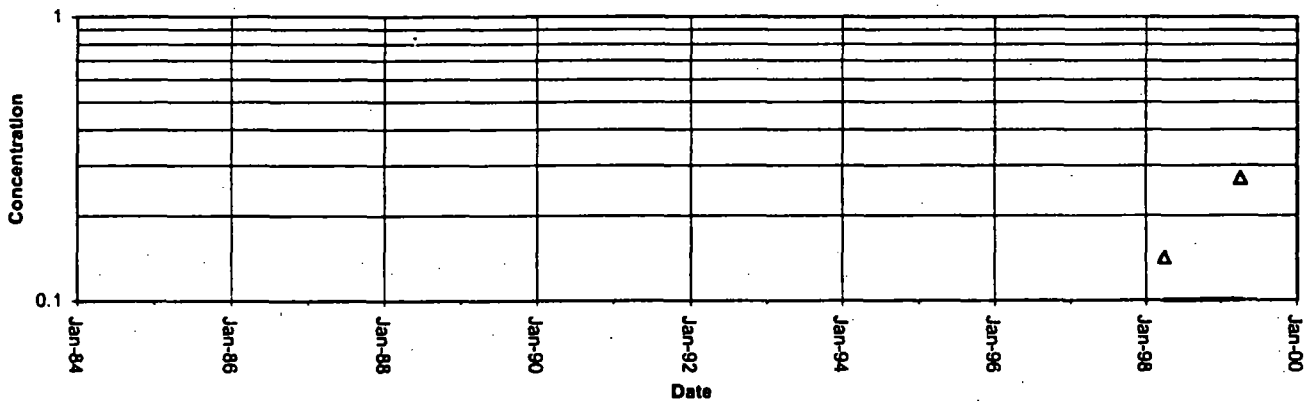
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

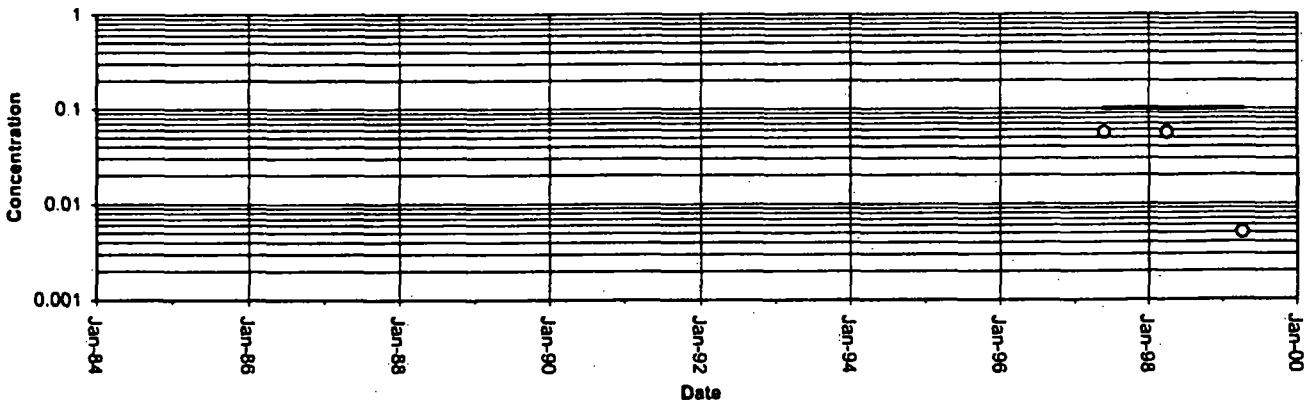
G35D



G35S



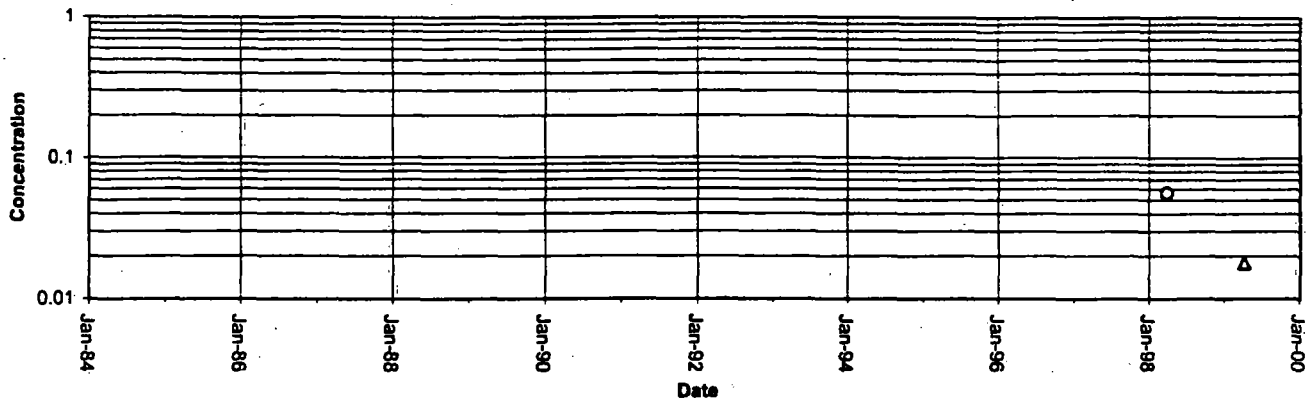
G36



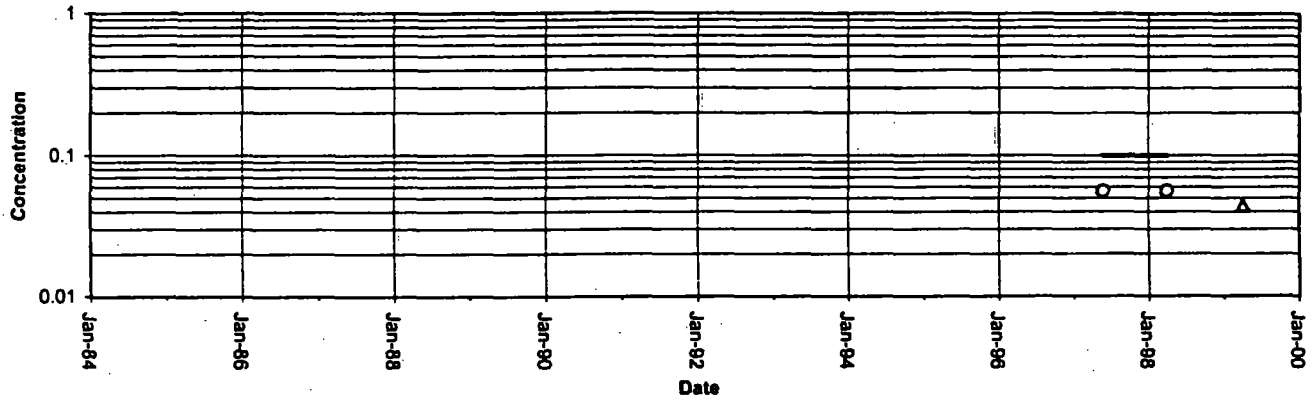
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

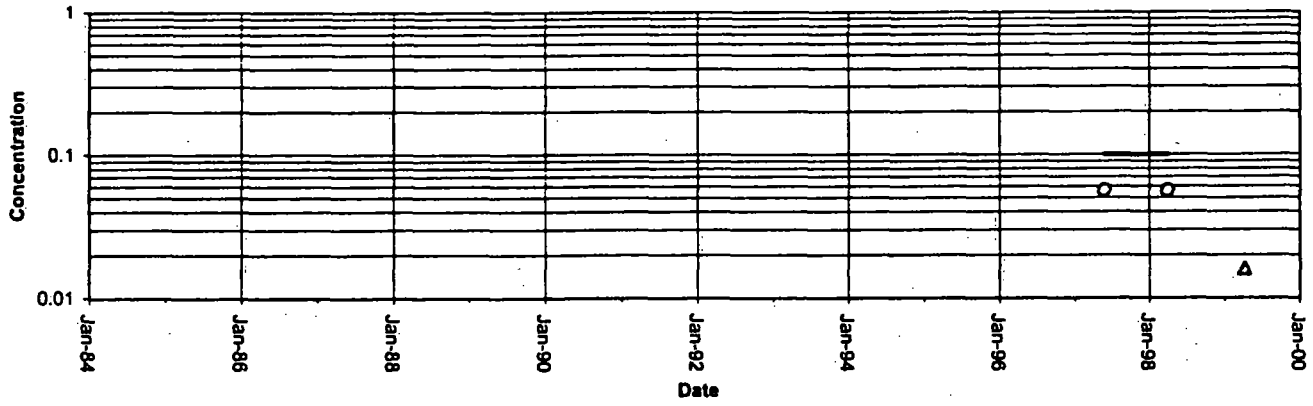
G37D



G37S



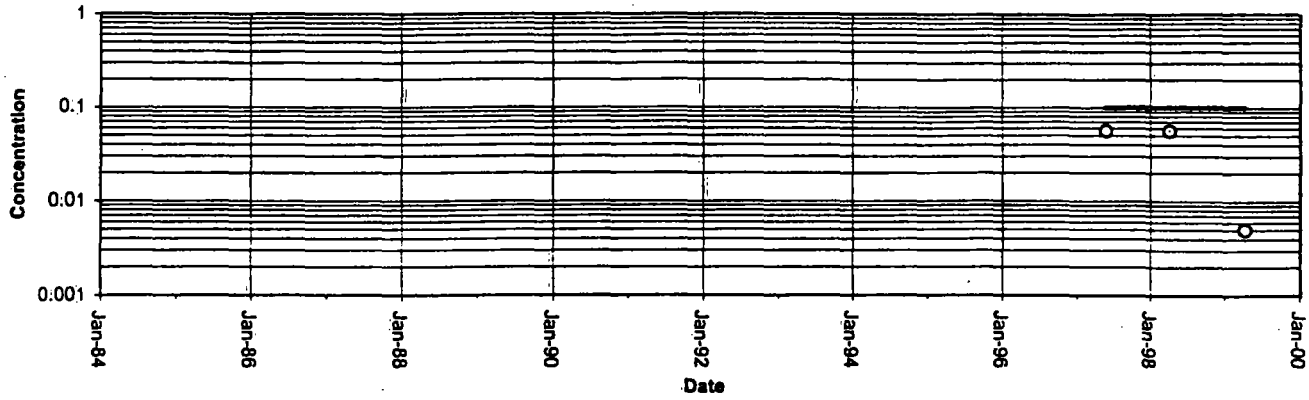
G38



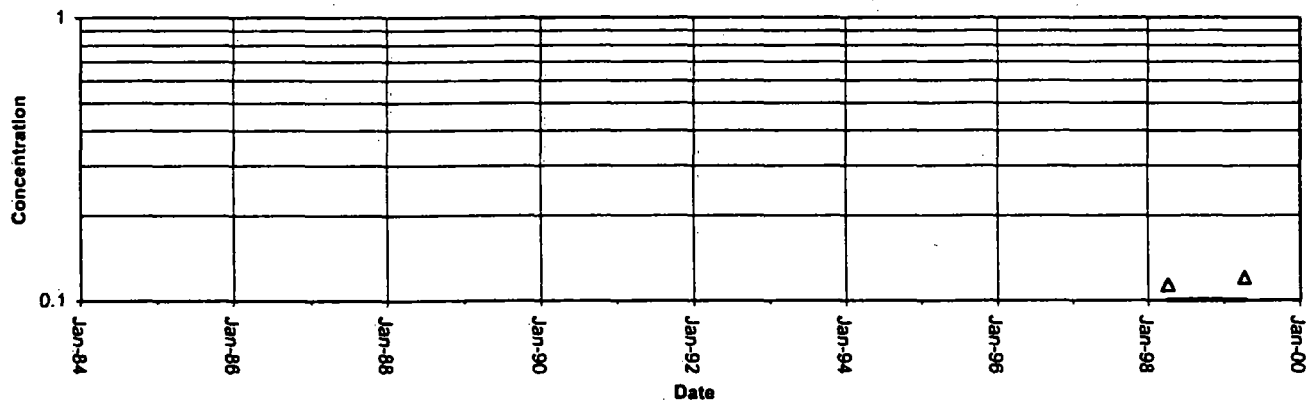
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

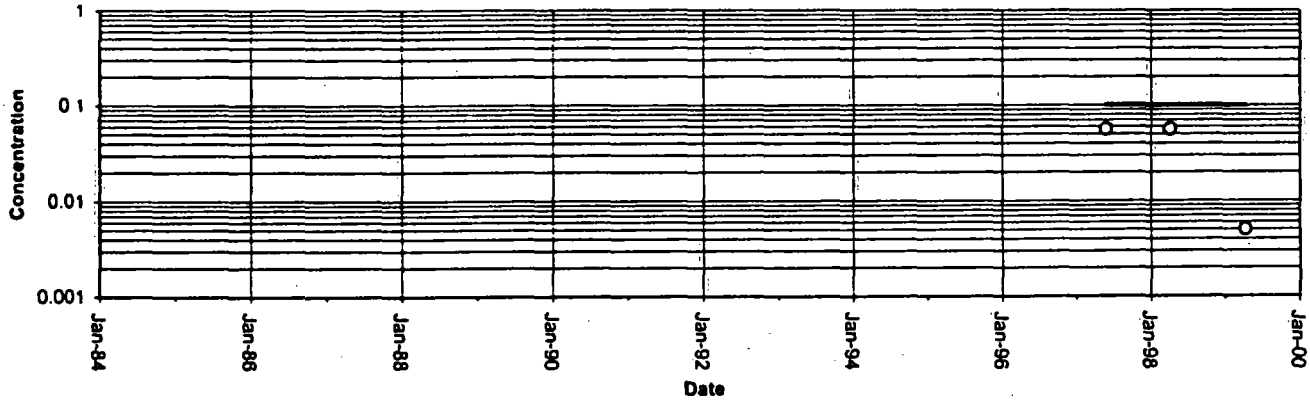
G39



G40



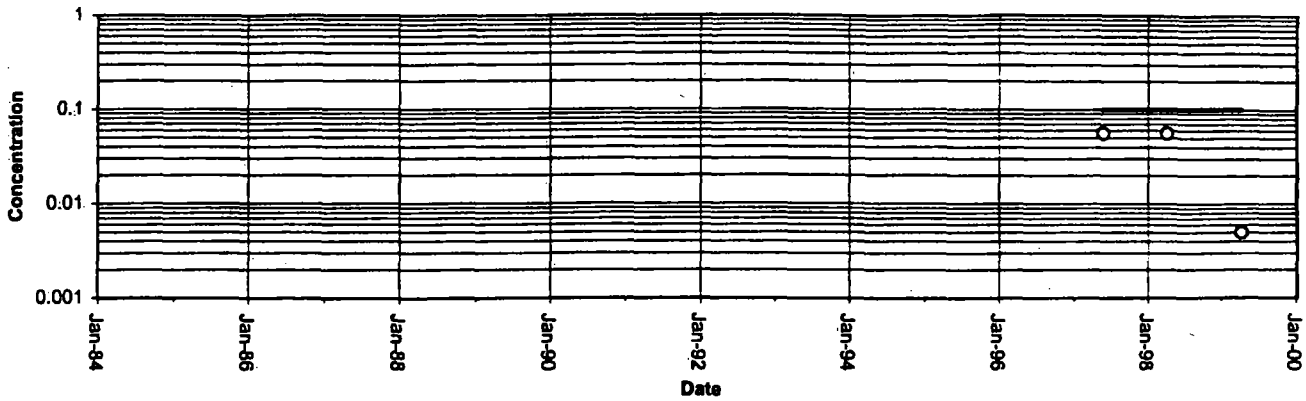
MW106



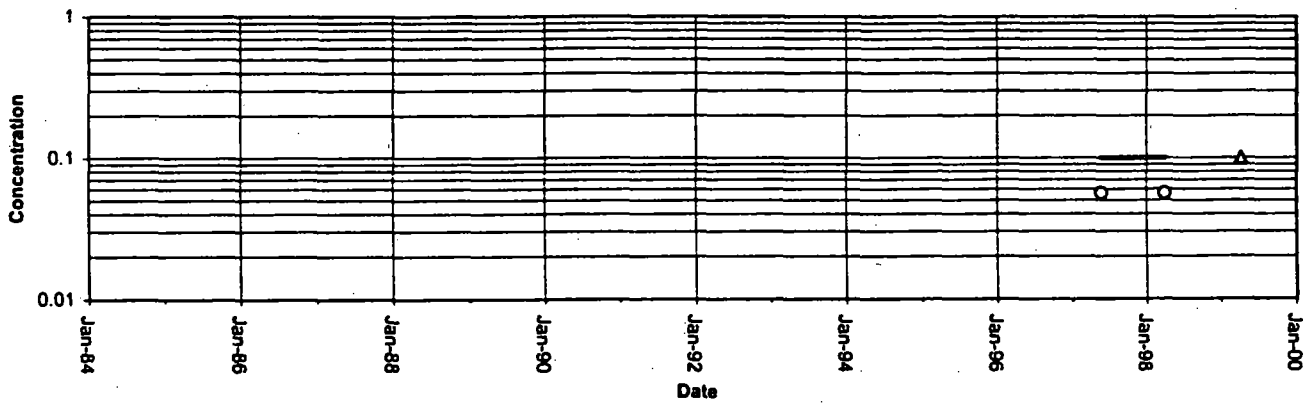
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

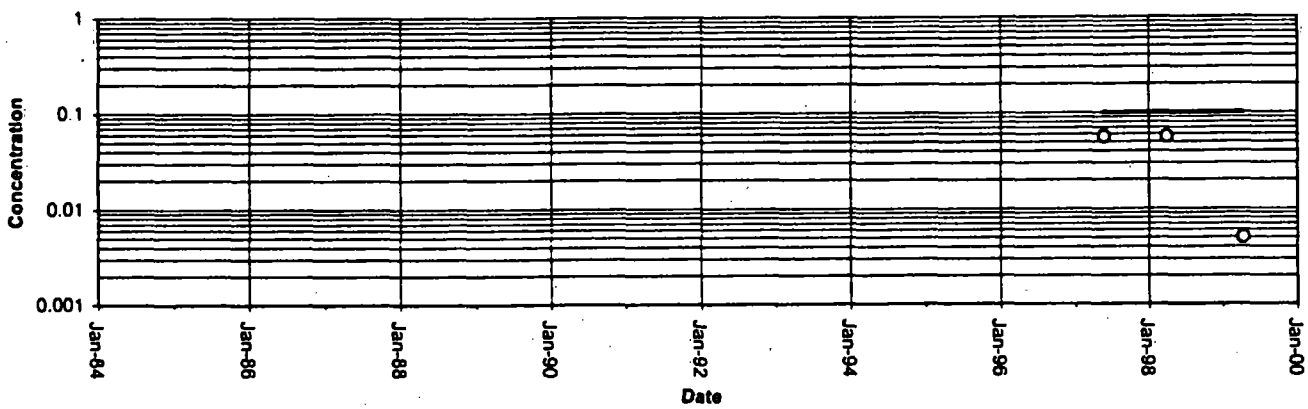
P1



P3R



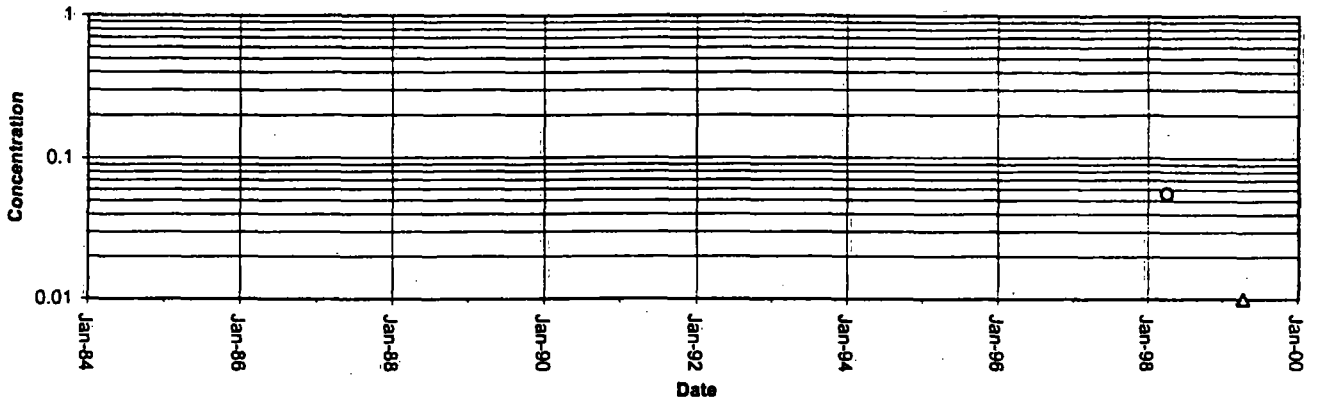
P4R



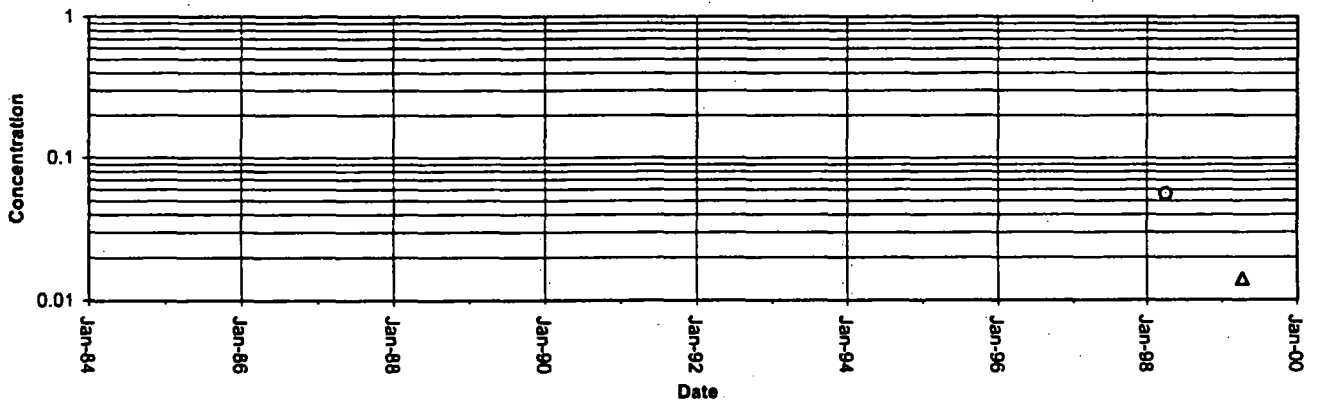
Vanadium (mg/L)

AGQS Δ Concentration O NonDetect

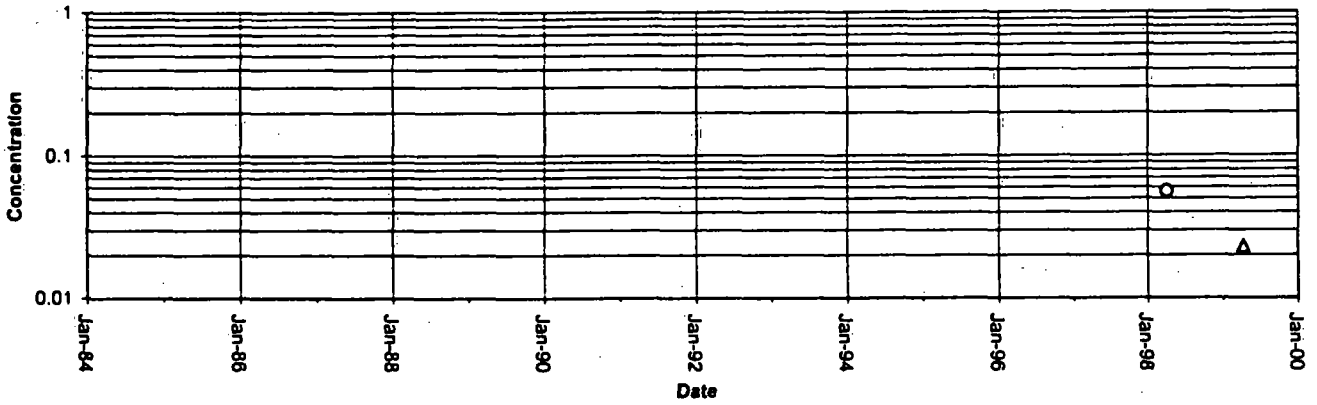
SG1



SG3



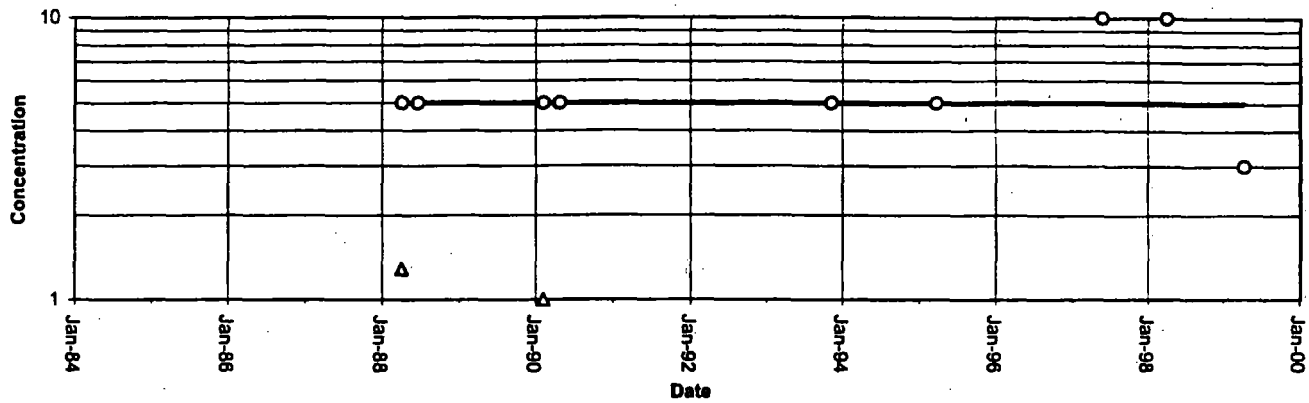
SG4



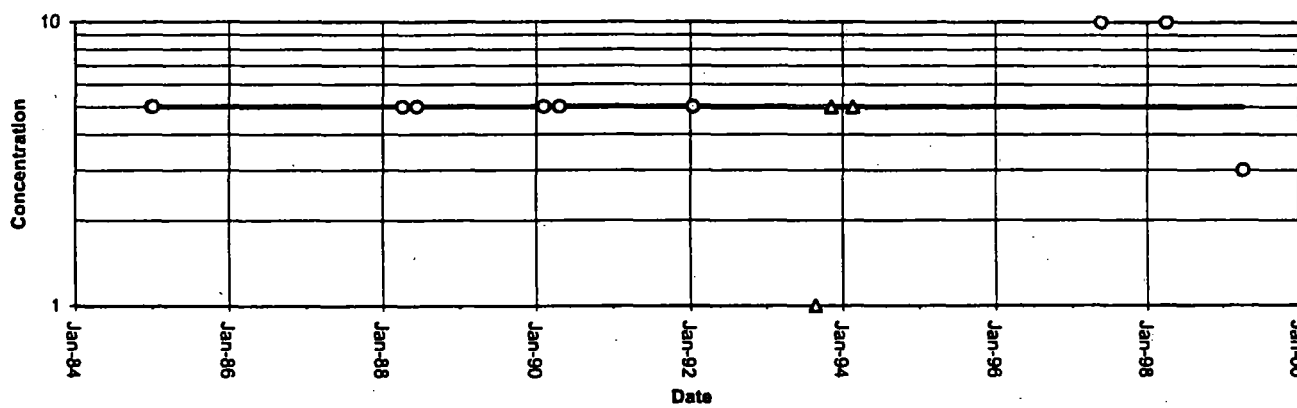
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

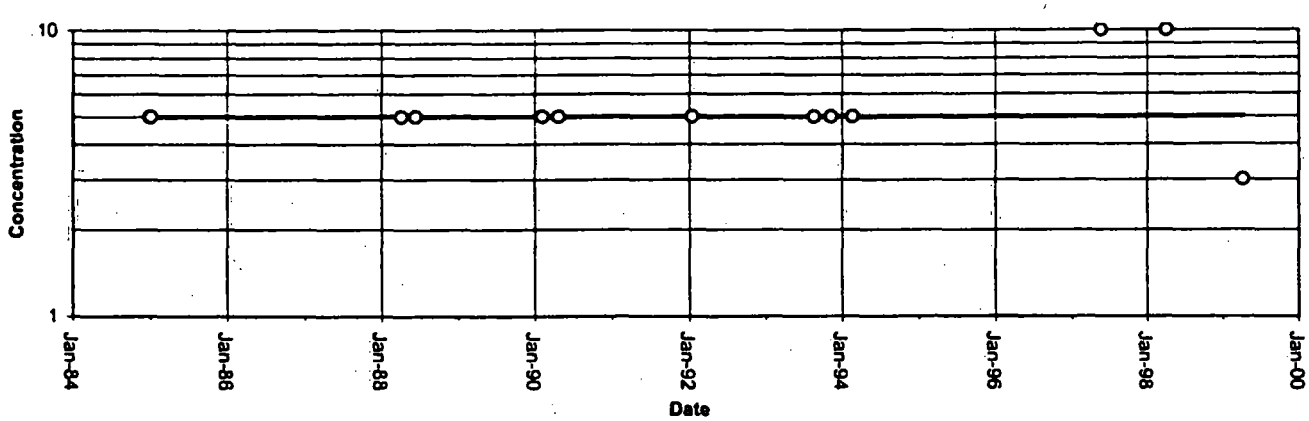
B15R



G109



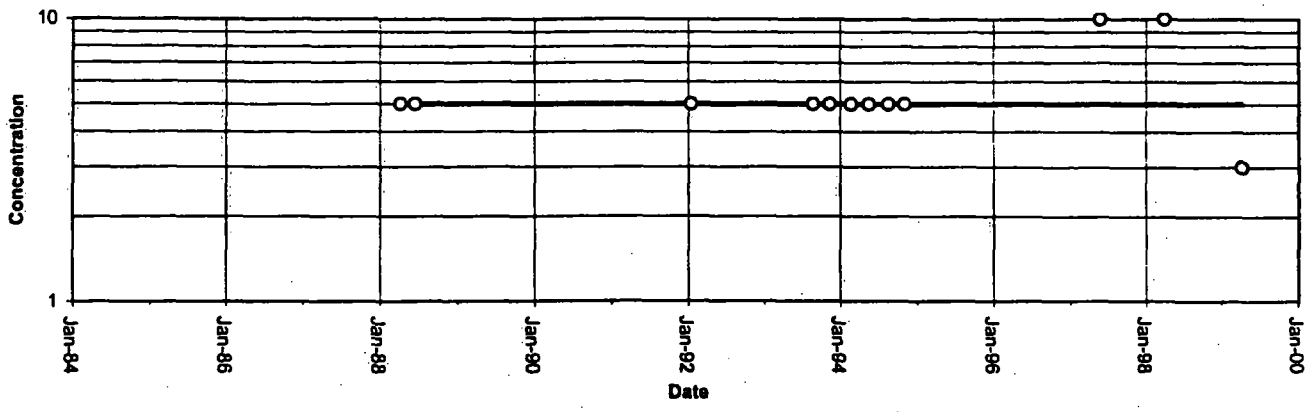
G109A



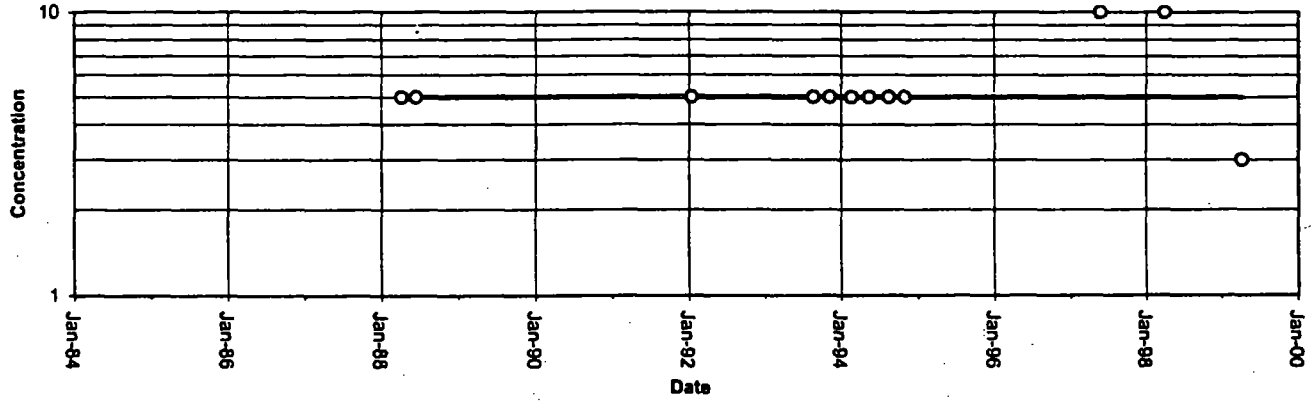
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

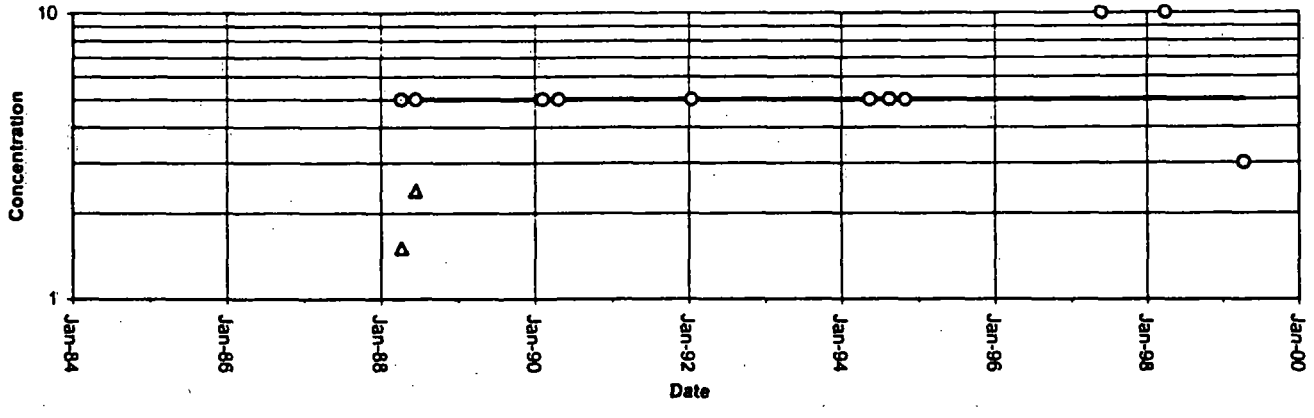
G113



G113A



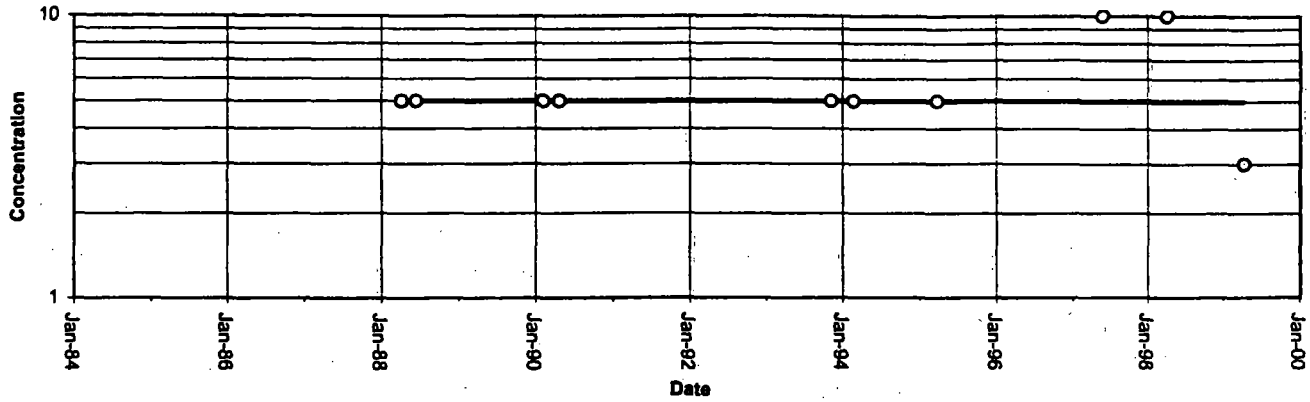
G114



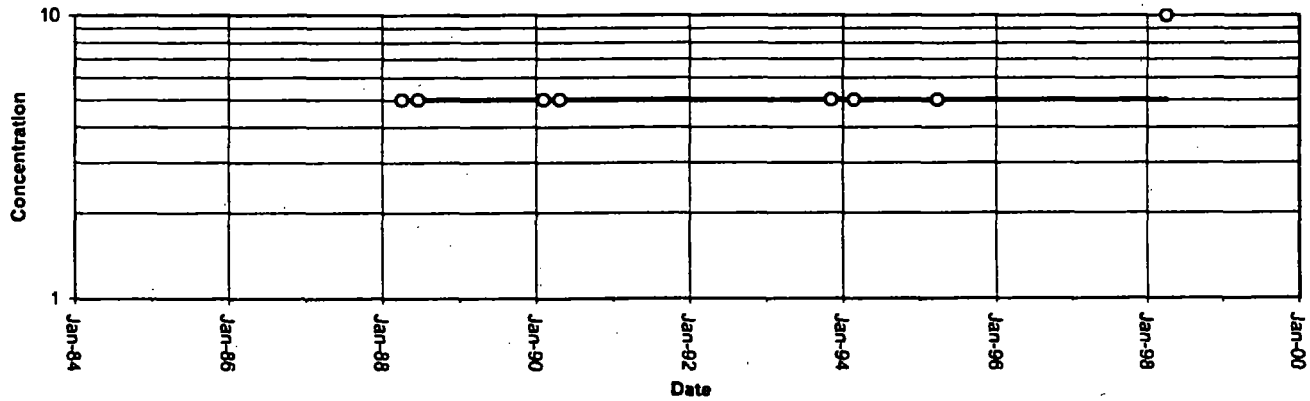
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

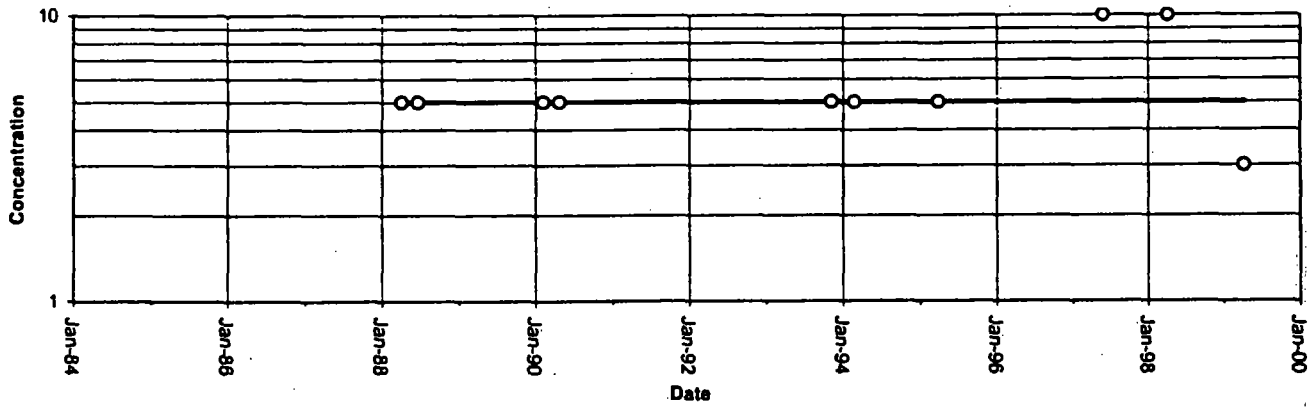
G115



G116



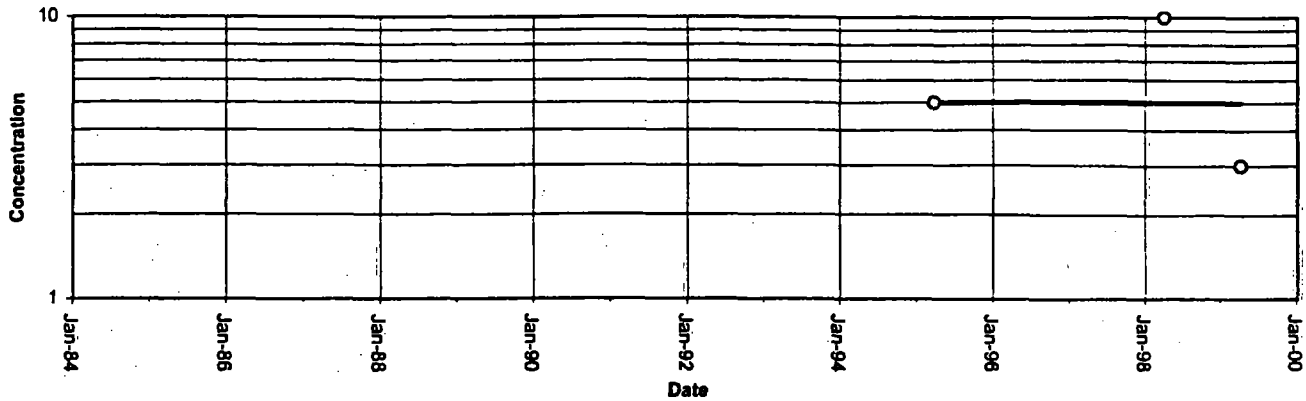
G116A



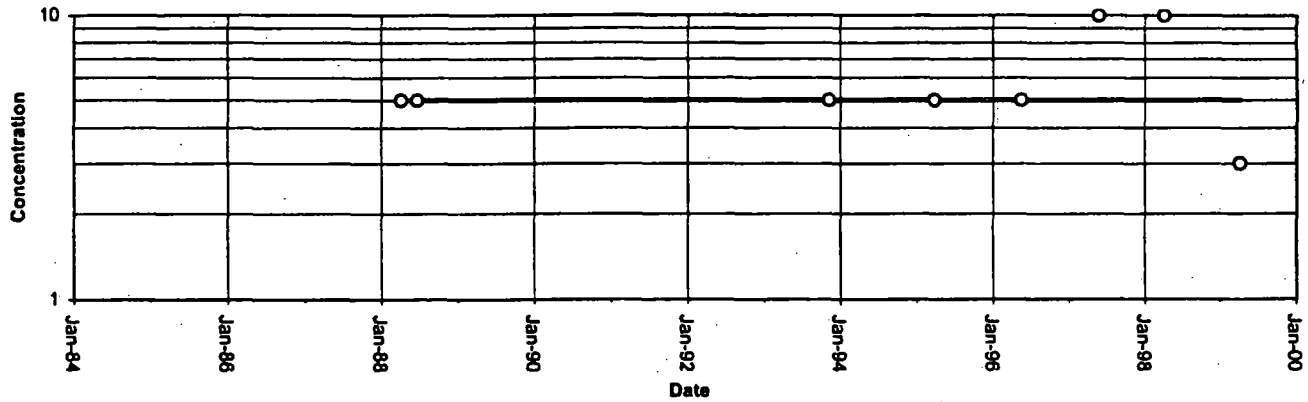
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

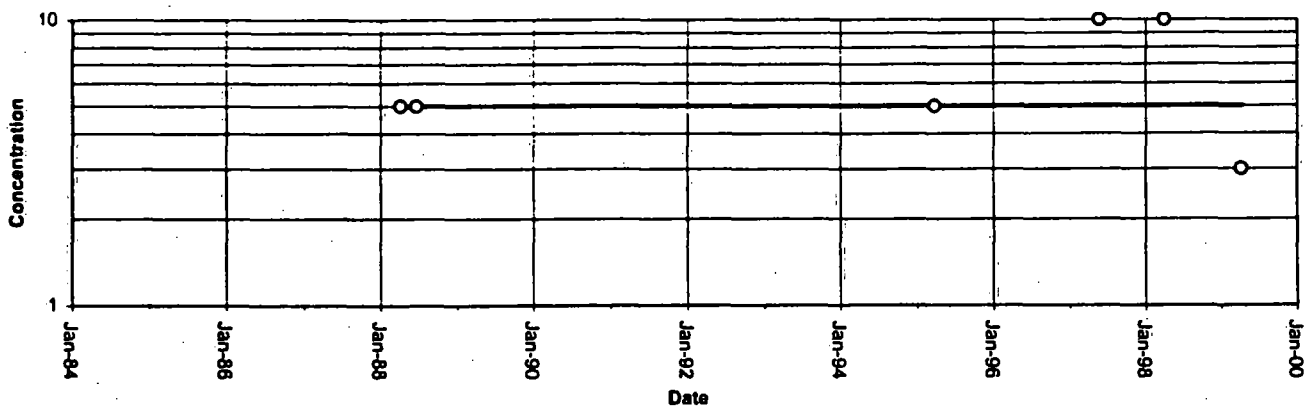
G116D



G117



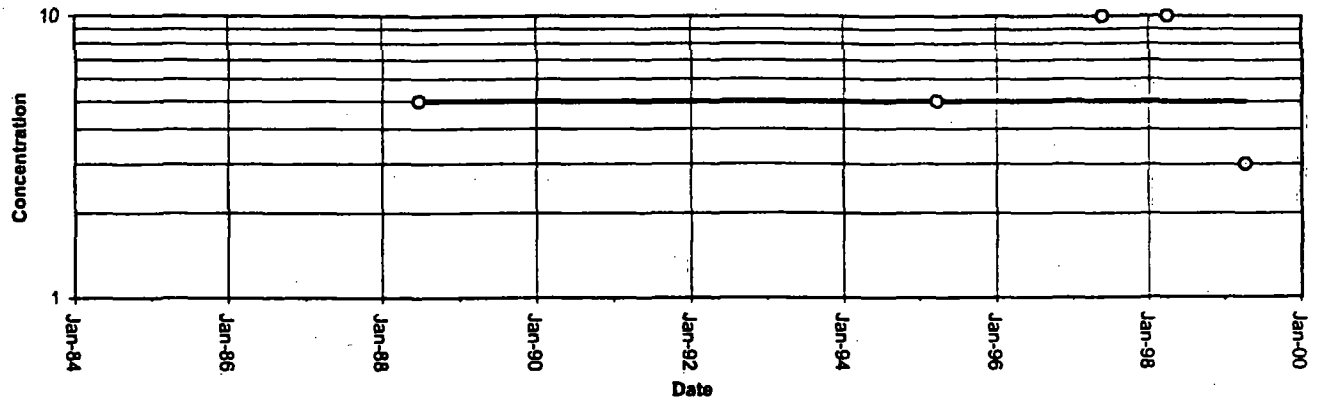
G118A



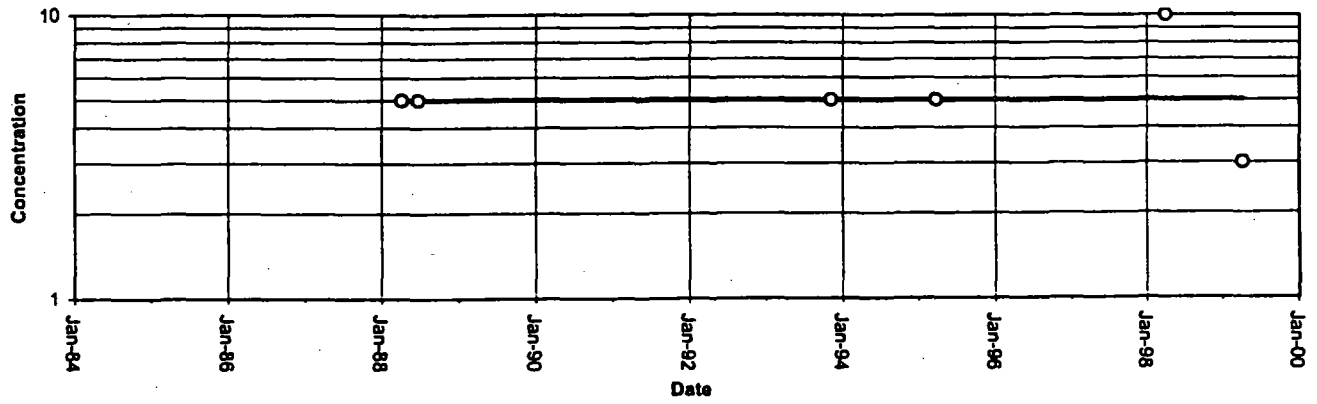
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

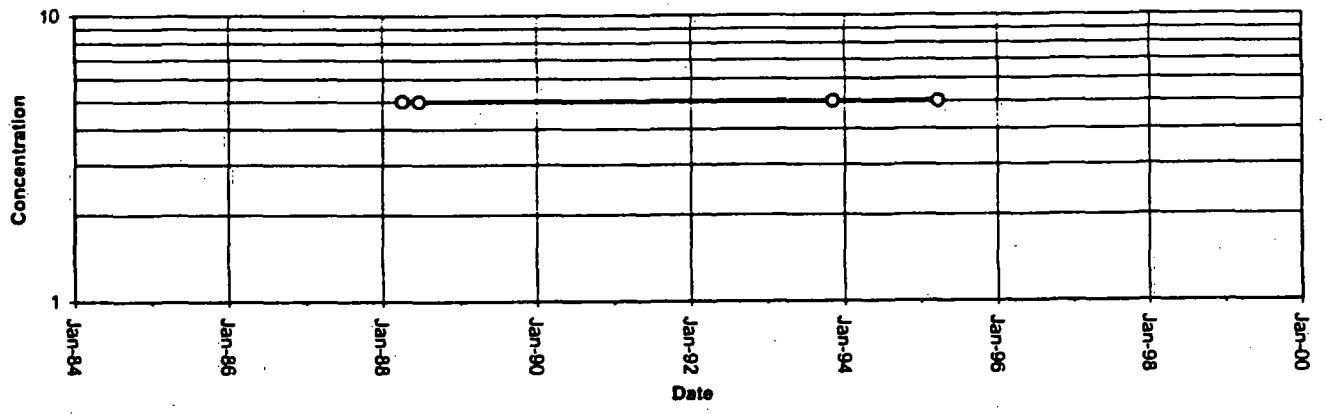
G118R



G119



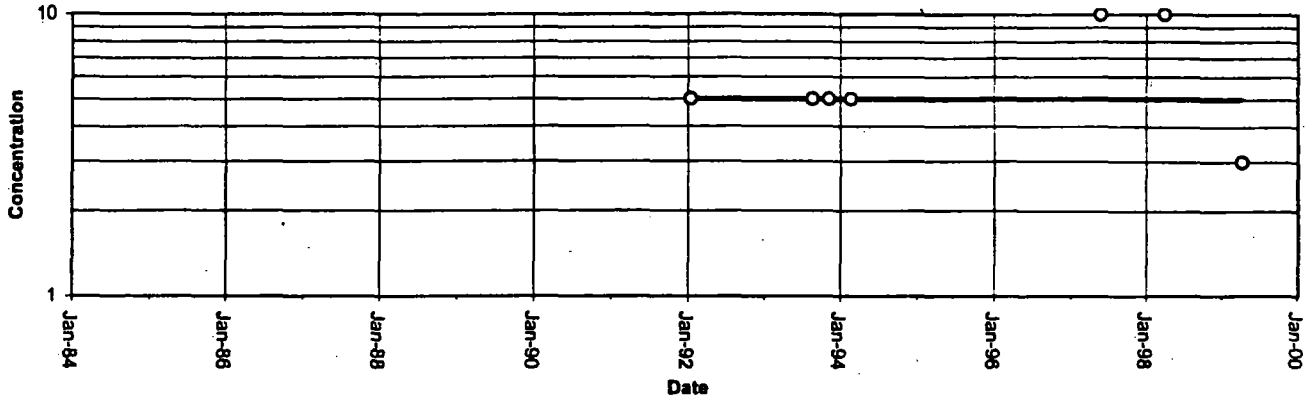
G119A



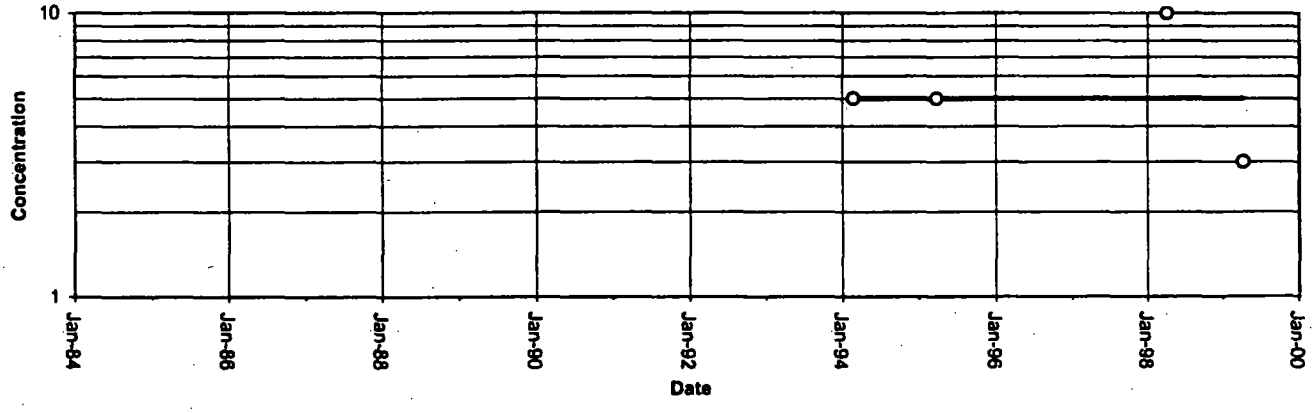
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

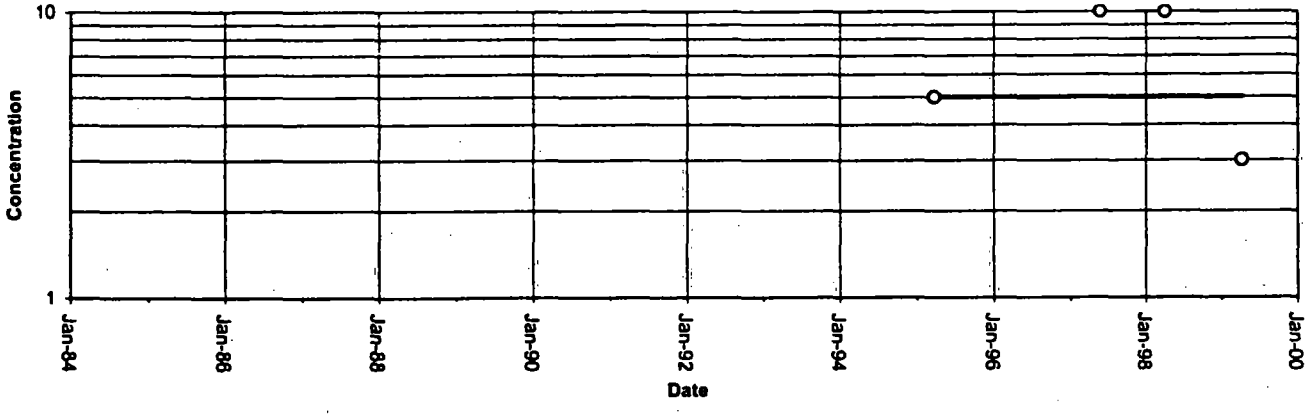
G120B



G130



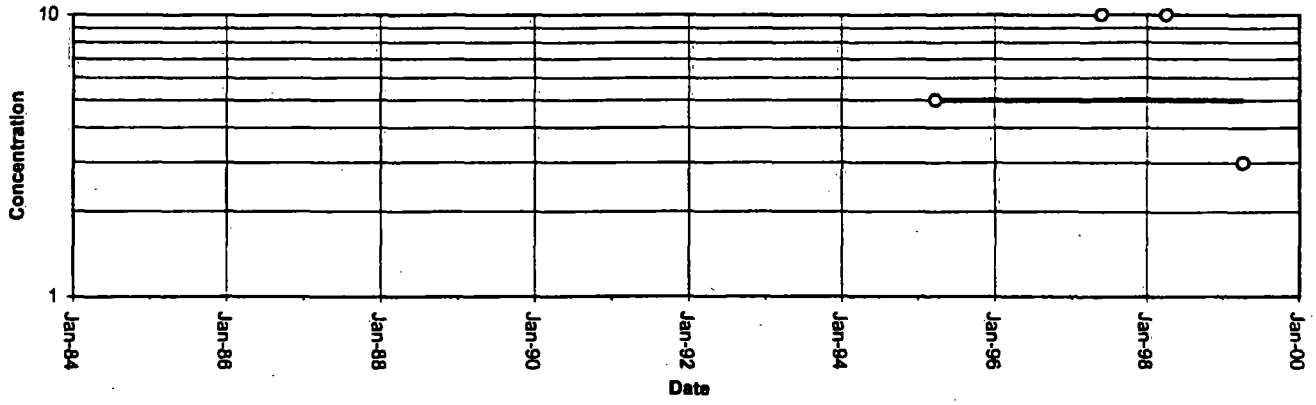
G132



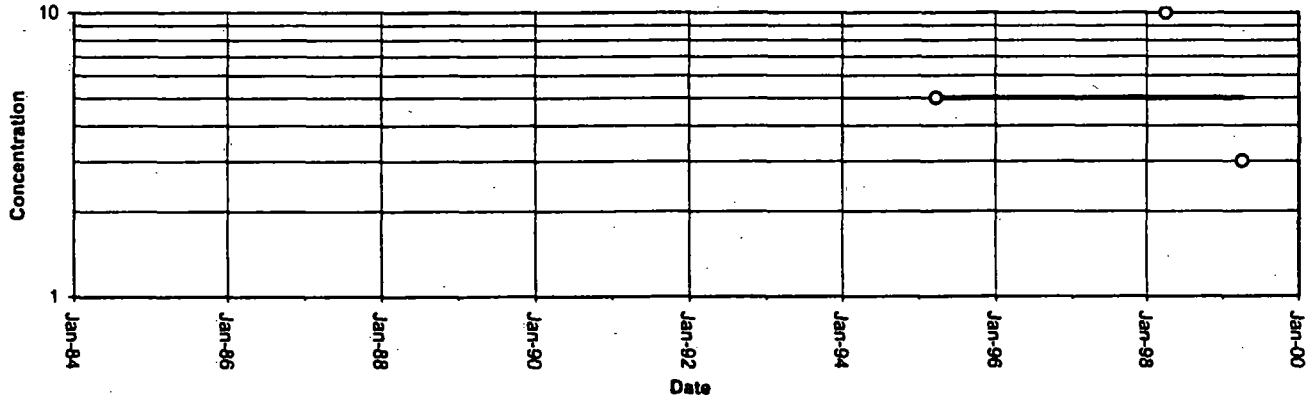
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

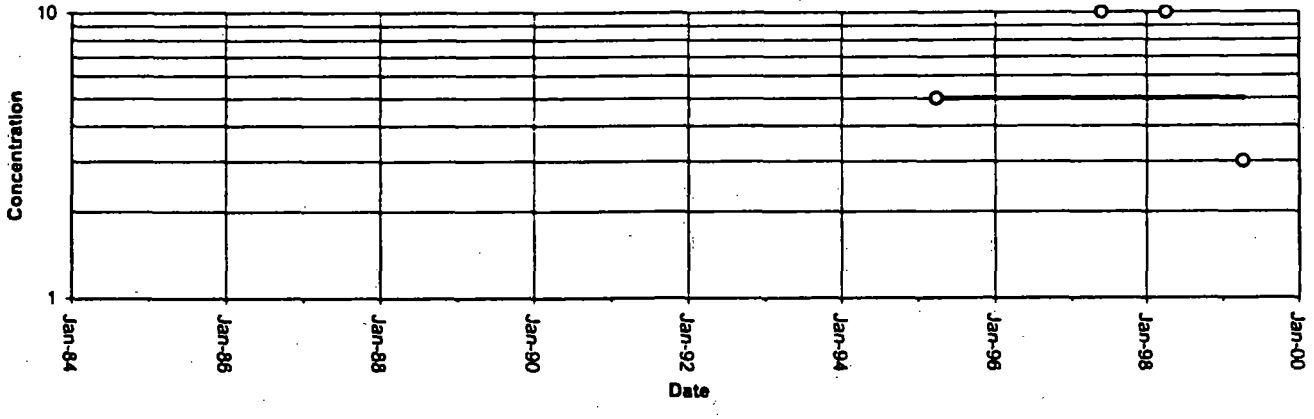
G33D



G33S



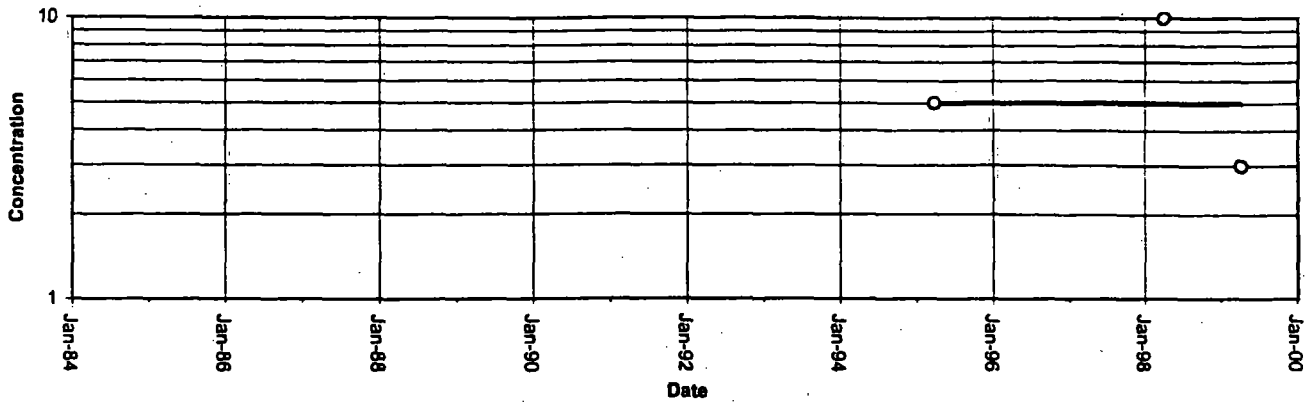
G34D



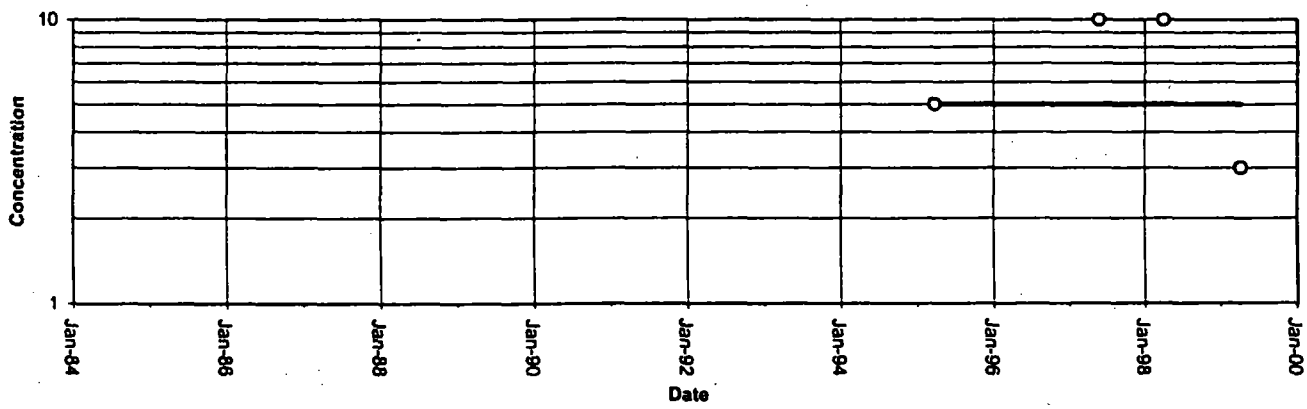
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

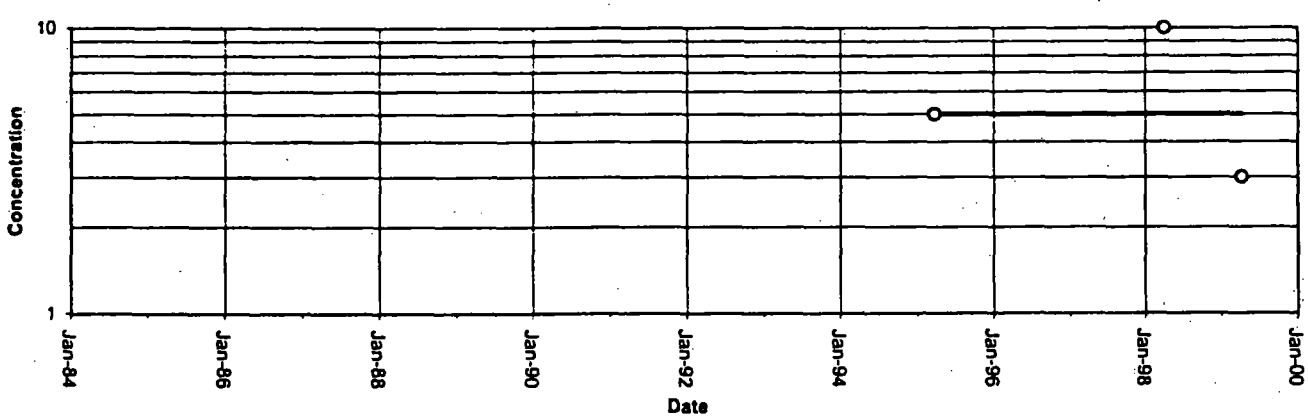
G34S



G35D



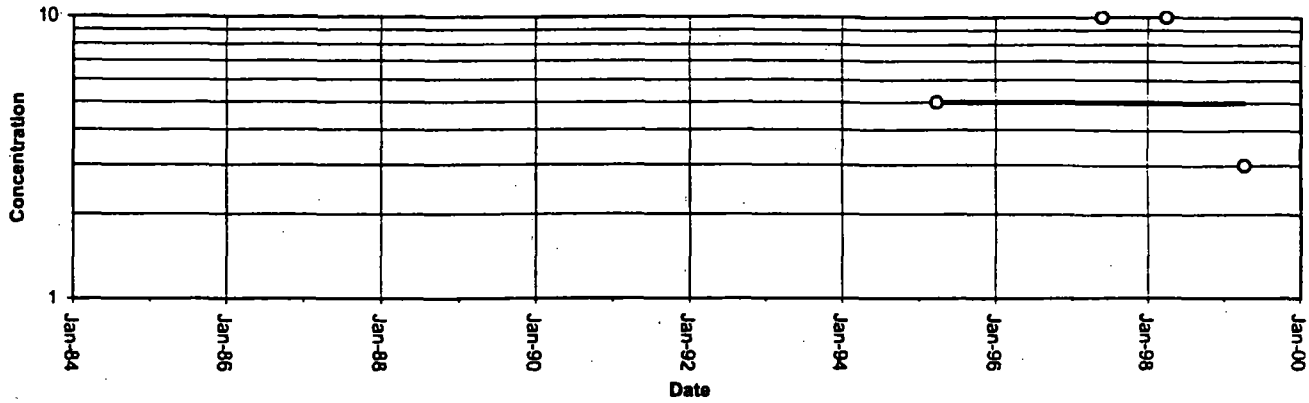
G35S



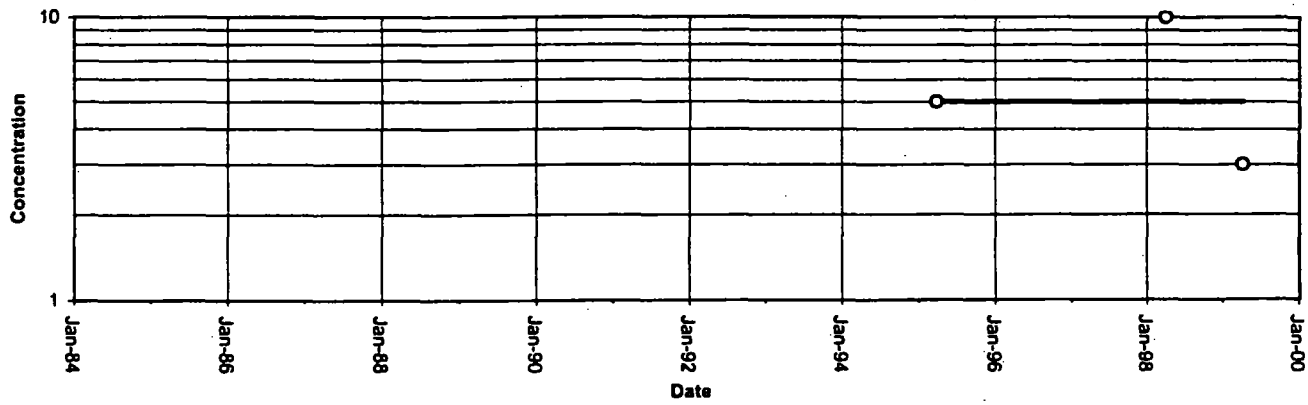
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

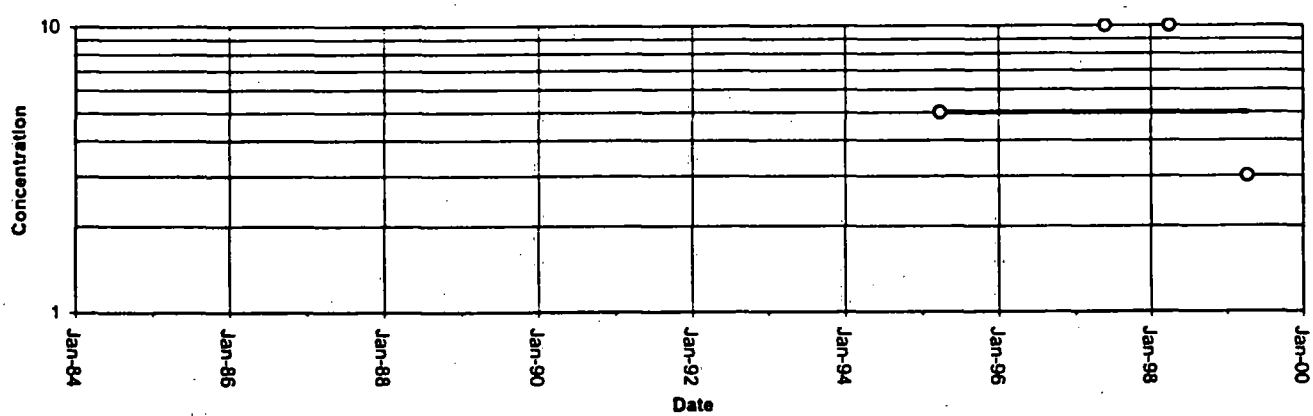
G36



G37D



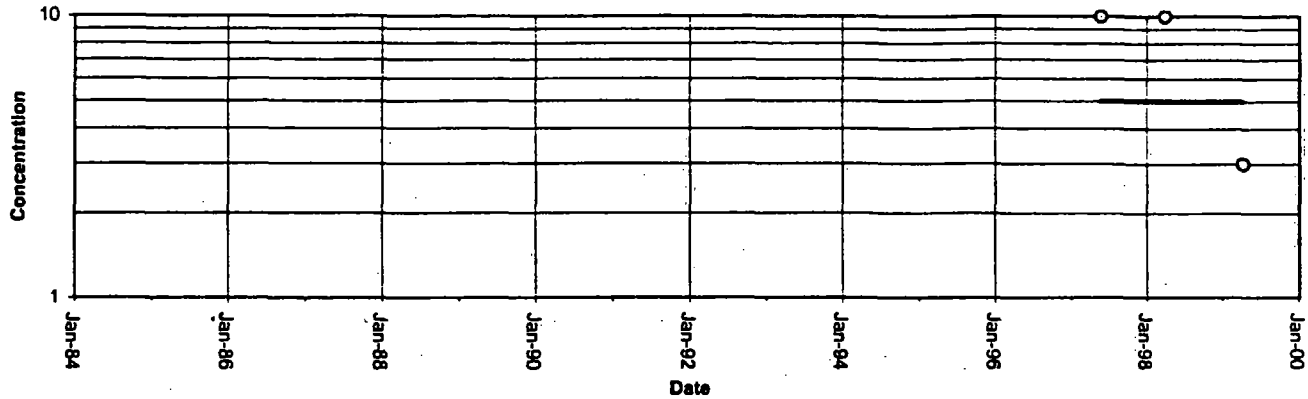
G37S



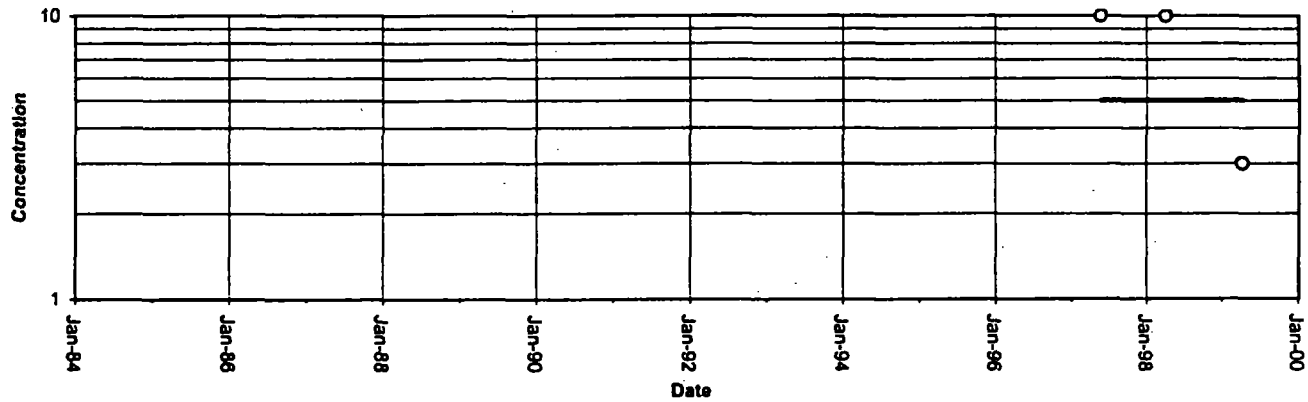
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

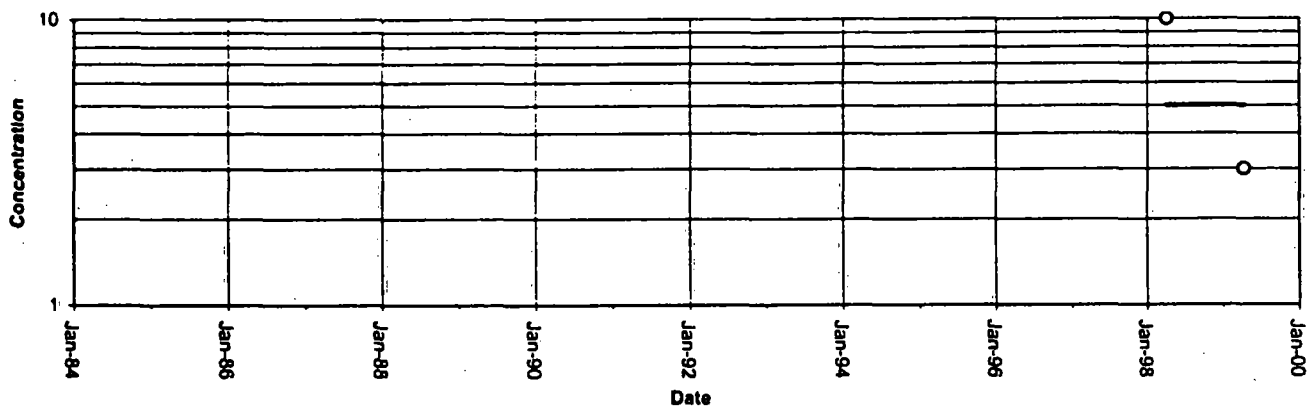
G38



G39



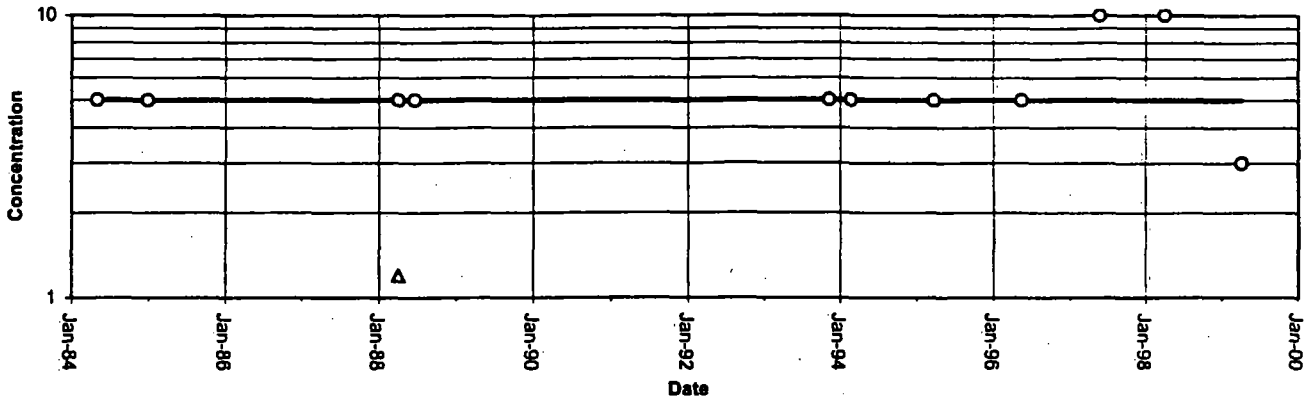
G40



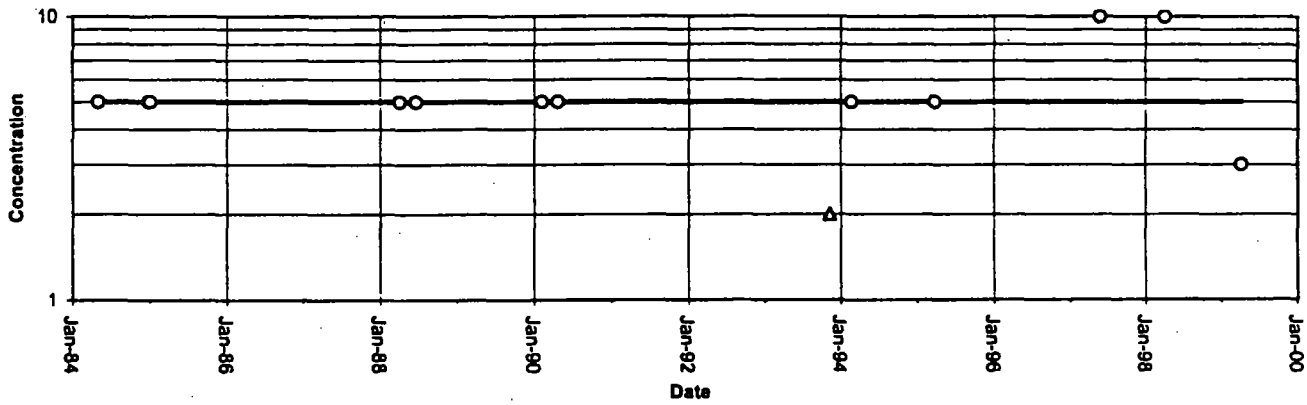
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

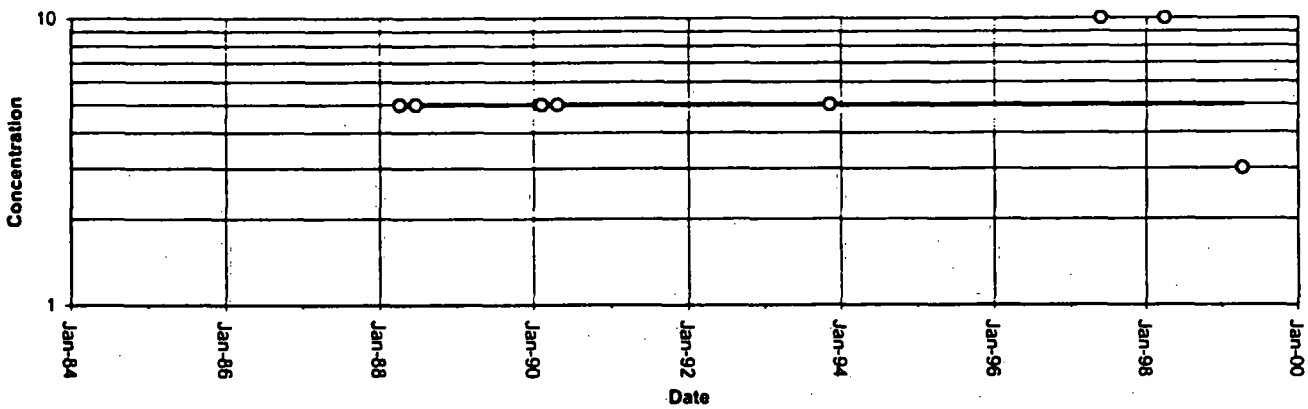
MW106



P1



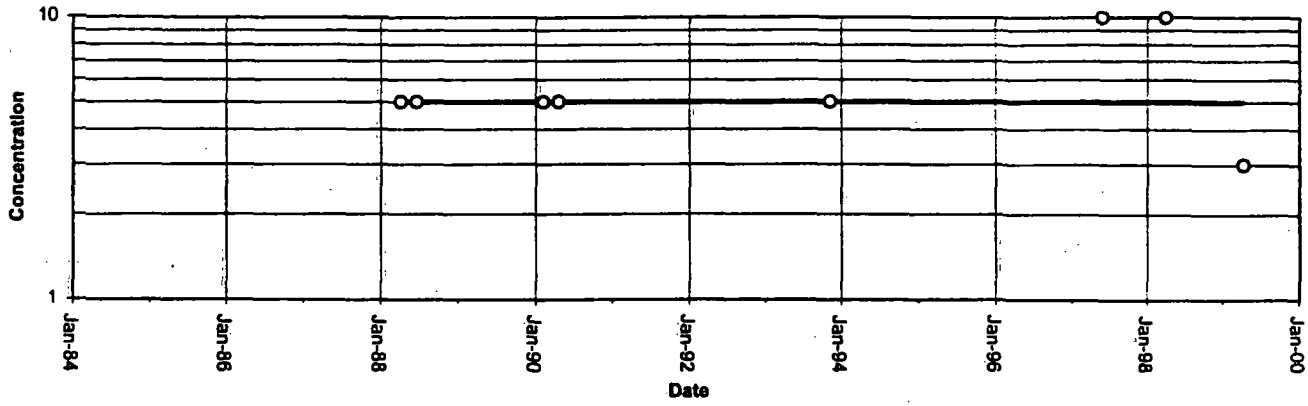
P3R



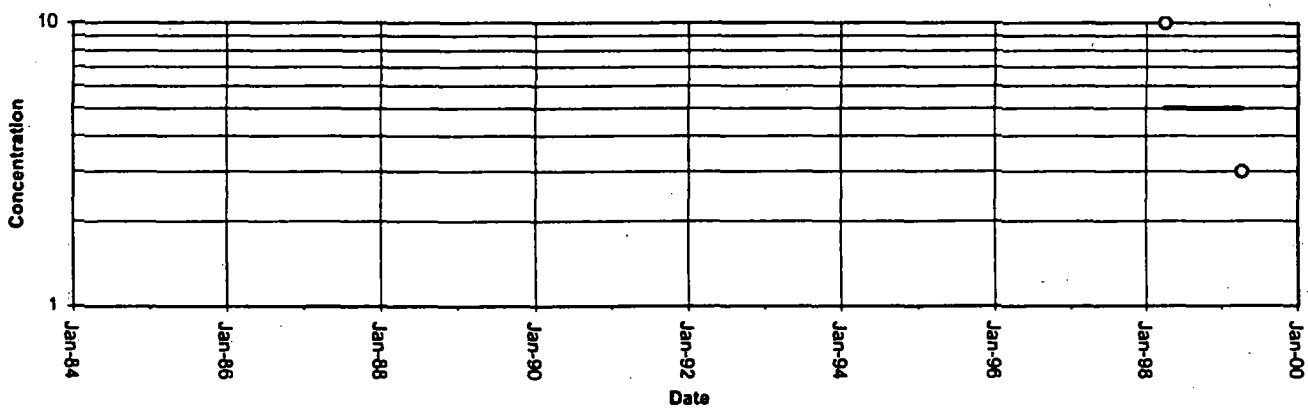
Xylenes (total) (ug/L)

AGQS Δ Concentration O NonDetect

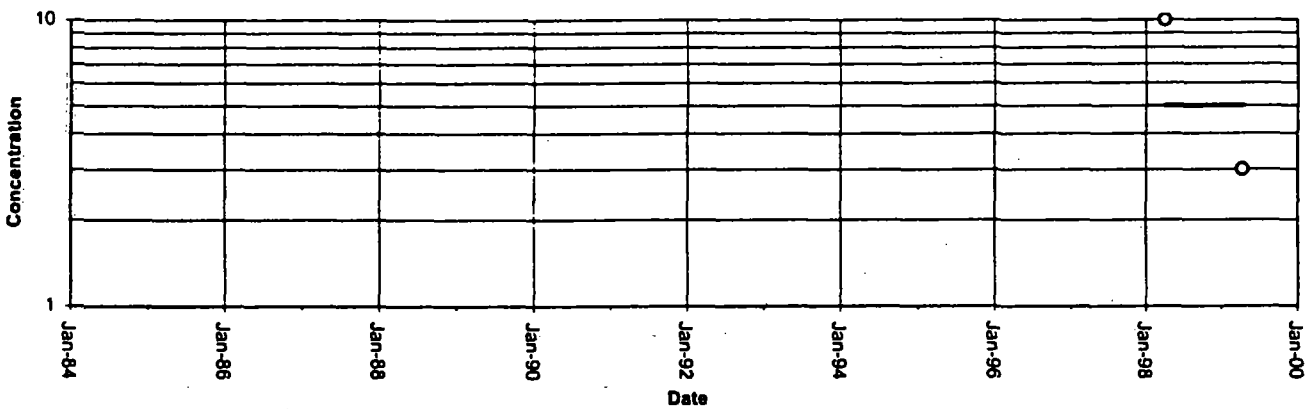
P4R



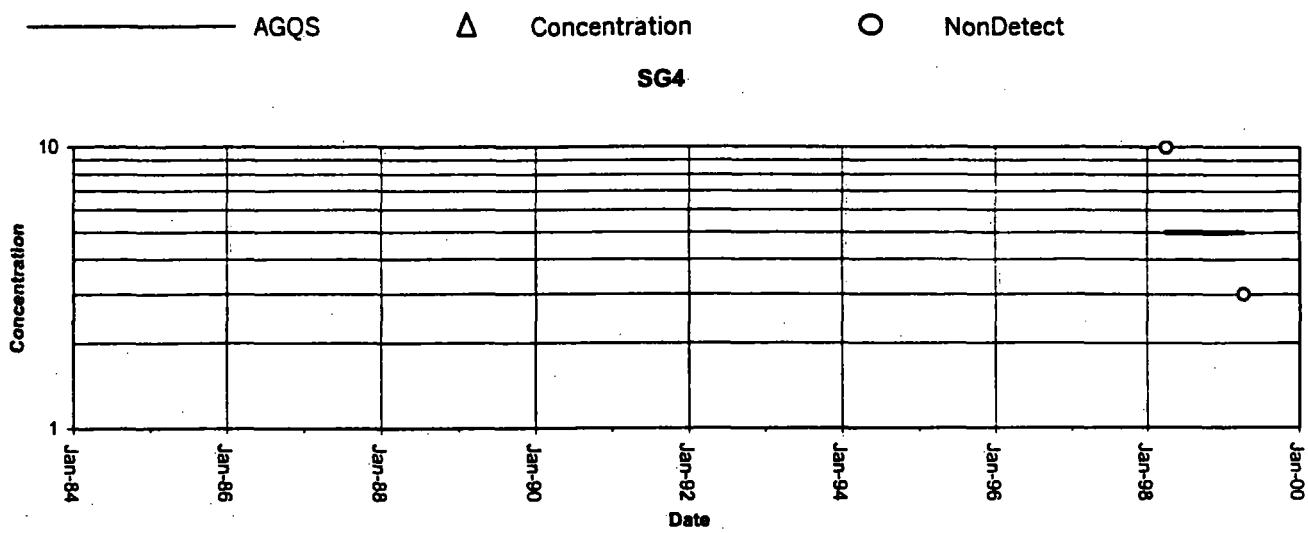
SG1



SG3



Xylenes (total) (ug/L)



1999 Pagel Landfill Groundwater Quality Data

Parameter Group: G1

Ammonia, Nitrogen (dis) **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	140	140	90	120	90	140	126
G109	0.1	0.1	0.1	0.29	0.1	0.29	0.138
G109A	0.1	0.1	0.18	0.31	0.1	0.31	0.158
G113	0.13	0.18	0.13	0.4	0.13	0.4	0.194
G113A	0.17	0.1	0.1	0.34	0.1	0.34	0.176
G114	0.6	0.83	1.1	1.4	0.6	1.4	0.906
G115	1.8	1.8	1.2	0.87	0.87	1.8	1.494
G116A	3.3	3.4	29	18	3.3	29	11.4
G116D	0.1	0.1	0.14	0.1	0.1	0.14	0.108
G117	0.1	0.1	0.1	0.1	0.1	0.1	0.1
G118A	0.1	0.1	0.1	0.1	0.1	0.1	0.1
G118R	0.1	0.1	0.1	15	0.1	15	3.08
G119	0.1	0.1	0.1	0.1	0.1	0.1	0.1
G120B	0.19	0.1	0.1	0.13	0.1	0.19	0.142
G130	0.1	0.1	0.1	0.1	0.1	0.1	0.1
G132	1	1.2	39	33	1	39	15.04
G33D	0.1	0.35	0.67	0.24	0.1	0.67	0.292
G33S	0.1	0.1	0.1	0.1	0.1	0.1	0.1
G34D	0.1	0.1	0.1	0.16	0.1	0.16	0.112
G34S	21	17	18	15	15	21	18.4
G35D	270	190	15	3.8	3.8	270	149.76
G35S	10	8.7	12	18	8.7	18	11.74
G36	0.1		0.1	0.1	0.1	0.1	0.1
G37D	1.5	2.1	2.3	1.7	1.5	2.3	1.82
G37S	0.16	0.1	0.1	0.24	0.1	0.24	0.152
G38	74	58	62	120	58	120	77.6
G39	0.21	0.24	1.3	1.1	0.21	1.3	0.612
G40	17	20	9.7	12	9.7	20	15.14
MW106	220	250	94	91	91	250	175
P1	0.51	100	140	60	0.51	140	60.204
P3R	10	13	11	150	10	150	46
P4R	0.72	0.57	3.6	47	0.57	47	10.522

Arsenic (dis) **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	5.3	3.7	5.6	7	3.7	7	5.38
G109	3	0.84	3	3	0.84	3	2.568

G109A	3	0.84	3	3	0.84	3	2.568
G113	3	0.84	3	3	0.84	3	2.568
G113A	3	0.84	3	3	0.84	3	2.568
G114	67	32	110	94	32	110	74
G115	19	23	11		11	23	18
G116A	3	0.84	3	3	0.84	3	2.568
G116D	3	0.84	3	3	0.84	3	2.568
G117	3	0.84	3	3	0.84	3	2.568
G118A	3	0.84	3	3	0.84	3	2.568
G118R	3	0.84	3	6.4	0.84	6.4	3.248
G119	3	0.84	3	3	0.84	3	2.568
G120B	3	0.84	3	3	0.84	3	2.568
G130	3	0.84	3	3	0.84	3	2.568
G132	3	0.84	3	3	0.84	3	2.568
G33D	3	0.84	3	3	0.84	3	2.568
G33S	3	0.84	3	3	0.84	3	2.568
G34D	3	0.84	3	3	0.84	3	2.568
G34S	3	0.84	3	3	0.84	3	2.568
G35D	14	13	9.2	3	3	14	10.64
G35S	3	0.84	3	3	0.84	3	2.568
G36	3	0.84	3	3	0.84	3	2.568
G37D	3	0.84	3	3	0.84	3	2.568
G37S	3	0.84	3	3	0.84	3	2.568
G38	3	0.84	5.2	6.4	0.84	6.4	3.688
G39	3	0.84	3	3	0.84	3	2.568
G40	3	0.84	3	3	0.84	3	2.568
MW106	16	13	24	21	13	24	18
P1	29	25	17	19	17	29	23.8
P3R	3.5	4.1	6.8		3.5	6.8	4.8
P4R	3	0.84	3	3	0.84	3	2.568

Boron (dis) **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	480	360	440	430	360	480	438
G109	100	100	100	100	100	100	100
G109A	100	100	100	100	100	100	100
G113	110	110	100	100	100	110	106
G113A	100	140	100	100	100	140	108
G114	100	100	120	110	100	120	106
G115	120	100	120		100	120	115
G116A	100	100	240	160	100	240	140
G116D	100	100	100	100	100	100	100
G117	100	100	100	100	100	100	100
G118A	100	100	100	100	100	100	100
G118R	180	120	170	560	120	560	242
G119	100	100	100	100	100	100	100

G120B	100	100	100	100	100	100	100
G130	100	100	100	100	100	100	100
G132	100	100	200	190	100	200	138
G33D	100	100	100	100	100	100	100
G33S	100	100	100	100	100	100	100
G34D	100	100	100	100	100	100	100
G34S	140	150	160	140	140	160	146
G35D	1400	1300	140	100	100	1400	868
G35S	100	100	100	140	100	140	108
G36	100	100	100	100	100	100	100
G37D	100	100	100	100	100	100	100
G37S	100	100	100	100	100	100	100
G38	330	280	520	660	280	660	424
G39	100	100	110	120	100	120	106
G40	190	180	140	140	140	190	168
MW106	1300	1200	530	510	510	1300	968
P1	830	760	630	330	330	830	676
P3R	120	120	130		120	130	123.33333333
P4R	100	100	190	450	100	450	188

Cadmium (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	1	0.3	1	0.3	0.3	1	0.72
G109	1	0.59	1	0.3	0.3	1	0.778
G109A	1	0.3	1	0.3	0.3	1	0.72
G113	1	0.3	1	0.41	0.3	1	0.742
G113A	1	0.3	1	0.46	0.3	1	0.752
G114	1	0.3	1	0.3	0.3	1	0.72
G115	1	0.3	1		0.3	1	0.825
G116A	1	0.3	1	0.3	0.3	1	0.72
G116D	1	0.3	1	0.3	0.3	1	0.72
G117	1	0.3	1	0.3	0.3	1	0.72
G118A	1	0.3	1	0.3	0.3	1	0.72
G118R	1	0.3	1	0.3	0.3	1	0.72
G119	1	0.3	1	0.3	0.3	1	0.72
G120B	1	0.3	1	0.3	0.3	1	0.72
G130	1	0.3	1	0.3	0.3	1	0.72
G132	1	0.3	1	0.3	0.3	1	0.72
G33D	1	0.3	1	0.51	0.3	1	0.762
G33S	1	0.3	1	0.3	0.3	1	0.72
G34D	1	0.3	1	0.3	0.3	1	0.72
G34S	1	0.3	1	0.3	0.3	1	0.72
G35D	1	0.3	1	0.46	0.3	1	0.752
G35S	1	0.3	1	0.3	0.3	1	0.72
G36	1	0.3	1	0.3	0.3	1	0.72
G37D	1	0.3	1	0.3	0.3	1	0.72

G37S	1	0.3	1	0.3	0.3	1	0.72
G38	1	0.3	1	0.3	0.3	1	0.72
G39	1	0.3	1	0.3	0.3	1	0.72
G40	1	0.3	1	0.3	0.3	1	0.72
MW106	1	0.3	1	0.3	0.3	1	0.72
P1	1	0.3	1	0.3	0.3	1	0.72
P3R	1	0.3	1		0.3	1	0.7666666667
P4R	1	0.3	1	0.3	0.3	1	0.72

Chloride (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	340	570	350	350	340	570	390
G109	11	18	190	31	11	190	52.2
G109A	140	150	20	190	20	190	128
G113	2	45	33	26	2	45	21.6
G113A	2	37	34	30	2	37	21
G114	32	36	90	87	32	90	55.4
G115	2	130	150		2	150	71
G116A	43	39	25	61	25	61	42.2
G116D	8.7	9.1	22	20	8.7	22	13.7
G117	50	58	29	43	29	58	46
G118A	26	27	29	30	26	30	27.6
G118R	51	63	30	520	30	520	143
G119	21	13	24	25	13	25	20.8
G120B	17	20	22	20	17	22	19.2
G130	31	6.1	19	15	6.1	31	20.42
G132	14	19	180	2	2	180	45.8
G33D	22	21	19	15	15	22	19.8
G33S	20	18	20	19	18	20	19.4
G34D	28	31	41	32	28	41	32
G34S	96	110	100	77	77	110	95.8
G35D	530	340	55	38	38	530	298.6
G35S	41	35	39	74	35	74	46
G36	33	30	26	12	12	33	26.8
G37D	26	27	37	25	25	37	28.2
G37S	22	29	26	25	22	29	24.8
G38	220	52	610	480	52	610	316.4
G39	110	100	24	120	24	120	92.8
G40	100	120	84	100	84	120	100.8
MW106	540	500	230	230	230	540	408
P1	250	260	350	33	33	350	228.6
P3R	95	61	160		61	160	105.33333333
P4R	34	35	150	340	34	340	118.6

Cyanide (Total) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G109	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G109A	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G113	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G113A	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G114	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G115	0.01	0.01	0.01		0.01	0.01	0.01
G116A	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G116D	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G117	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G118A	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G118R	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G119	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G120B	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G130	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G132	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G33D	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G33S	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G34D	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G34S	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G35D	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G35S	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G36	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G37D	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G37S	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G38	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G39	0.01	0.01	0.01	0.01	0.01	0.01	0.01
G40	0.01	0.01	0.01	0.01	0.01	0.01	0.01
MW106	0.01	0.01	0.01	0.01	0.01	0.01	0.01
P1	0.01	0.01	0.01	0.01	0.01	0.01	0.01
P3R	0.01	0.01	0.01		0.01	0.01	0.01
P4R	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Iron (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	1500	1000	1000	830	830	1500	1166
G109	290	370	690	160	160	690	360
G109A	50	50	260	200	50	260	122
G113	480	360	580	240	240	580	428
G113A	470	450	290	79	79	470	351.8
G114	13000	7500	11000	12000	7500	13000	11300
G115	43000	43000	26000		26000	43000	38750
G116A	50	50	50	50	50	50	50
G116D	50	50	140	50	50	140	68
G117	280	50	93	50	50	280	150.6
G118A	50	50	50	50	50	50	50

G118R	50	50	51	1300	50	1300	300.2
G119	50	50	64	50	50	64	52.8
G120B	50	50	74	50	50	74	54.8
G130	89	50	50	50	50	89	65.6
G132	50	50	51	50	50	51	50.2
G33D	50	50	66	50	50	66	53.2
G33S	270	92	78	50	50	270	152
G34D	50	50	50	50	50	50	50
G34S	50	50	50	50	50	50	50
G35D	430	1100	1900	50	50	1900	782
G35S	50	50	50	50	50	50	50
G36	50	50	50	50	50	50	50
G37D	50	130	50	50	50	130	66
G37S	50	2100	50	50	50	2100	460
G38	1600	1300	7400	6100	1300	7400	3600
G39	91	50	150	50	50	150	86.4
G40	50	630	78	100	50	630	181.6
MW106	5000	2200	5600	4400	2200	5600	4440
P1	3700	2400	5000	7500	2400	7500	4460
P3R	180	2300	5500		180	5500	2660
P4R	50	50	72	87	50	87	61.8

Lead (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	3	3	3	3	3	3	3
G109	3	7.7	3	3	3	7.7	3.94
G109A	3	3	4.8	3	3	4.8	3.36
G113	3	0	3	3	0	3	2.4
G113A	3	3	3	8.4	3	8.4	4.08
G114	3	3	3	3	3	3	3
G115	3	3	3		3	3	3
G116A	3	0	3	3	0	3	2.4
G116D	3	3	3	3	3	3	3
G117	3	0	3	3	0	3	2.4
G118A	3	3	3	3	3	3	3
G118R	3	3	3	3	3	3	3
G119	3	0	3	3	0	3	2.4
G120B	3	3	3	3	3	3	3
G130	3	0	3	3	0	3	2.4
G132	3	3	3	3	3	3	3
G33D	3	0	3	3	0	3	2.4
G33S	3	3	3	3	3	3	3
G34D	3	0	3	3	0	3	2.4
G34S	3	3	3	3	3	3	3
G35D	3	0	3	3	0	3	2.4
G35S	3	0	3	3	0	3	2.4

G36	3	0	3	3	0	3	2.4
G37D	3	0	3	3	0	3	2.4
G37S	3	3	3	3	3	3	3
G38	3	0	3	3	0	3	2.4
G39	3	3	3	3	3	3	3
G40	3	3	3	3	3	3	3
MW106	3	3	3	3	3	3	3
P1	3	3	3	3	3	3	3
P3R	3	3	3		3	3	3
P4R	3	3	3	3	3	3	3

Manganese (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	830	730	630	570	570	830	718
G109	40	55	370	55	40	370	112
G109A	370	440	45	230	45	440	291
G113	550	270	160	150	150	550	336
G113A	280	640	490	330	280	640	404
G114	440	240	220	1900	220	1900	648
G115	1200	1200	560		560	1200	1040
G116A	940	1000	750	850	750	1000	896
G116D	2	2	2	2	2	2	2
G117	27	2.2	4.8	4.2	2.2	27	13.04
G118A	2	2	2	2	2	2	2
G118R	4.7	5.1	26	6300	4.7	6300	1268.1
G119	2	2	2.3	2.2	2	2.3	2.1
G120B	2	2	2	2	2	2	2
G130	9.7	2	2	2.9	2	9.7	5.26
G132	2	2	560	740	2	740	261.2
G33D	2	2.5	2	3	2	3	2.3
G33S	15	4.8	12	4.2	4.2	15	10.2
G34D	2	2	2	3	2	3	2.2
G34S	69	81	80	78	69	81	75.4
G35D	100	94	160	180	94	180	126.8
G35S	44	49	35	81	35	81	50.6
G36	2	2.3	2	2	2	2.3	2.06
G37D	45	41	42	43	41	45	43.2
G37S	10	75	17	13	10	75	25
G38	630	710	350	260	260	710	516
G39	880	530	540	590	530	880	684
G40	140	180	65	110	65	180	127
MW106	82	92	34	45	34	92	67
P1	36	38	91	190	36	190	78.2
P3R	390	440	560		390	560	463.33333333
P4R	540	540	750	840	540	840	642

Nitrate Nitrogen (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	0.2	0.05	0.2	0.2	0.05	0.2	0.17
G109	0.59	0.2	2.1	0.2	0.2	2.1	0.736
G109A	2.2	0.9	0.2	0.24	0.2	2.2	1.148
G113	0.2	0.32	0.2	0.22	0.2	0.32	0.228
G113A	0.57	0.2	0.2	0.28	0.2	0.94	0.364
G114	0.2	0.05	0.2	0.2	0.05	0.2	0.17
G115	0.2	0.05	3.3		0.05	3.3	0.9375
G116A	7.7	10	3.3	0.88	0.88	10	5.916
G116D	3	3.7	7.3	9.6	3	9.6	5.32
G117	17	4.1	3.3	6.7	3.3	17	9.62
G118A	10	11	11	13	10	13	11
G118R	18	5.9	0.2	0.2	0.2	18	8.46
G119	18	16	16	18	16	18	17.2
G120B	3.8	4.7	3.8	4.5	3.8	4.7	4.12
G130	10	12	5.5	4.5	4.5	12	8.4
G132	6.3	6.7	2.1	2.5	2.1	6.7	4.78
G33D	9.4	12	7.7	7.8	7.7	12	9.26
G33S	9.1	9.7	7.9	8.8	7.9	9.7	8.92
G34D	7.8	8.7	7.5	8.8	7.5	8.8	8.12
G34S	1.8	1.2	1.1	4.8	1.1	4.8	2.14
G35D	0.2	0.065	0.2	3.4	0.065	3.4	0.813
G35S	4.7	4.4	0.57	0.38	0.38	4.7	2.95
G36	10	11	9.3	7	7	11	9.46
G37D	9.1	11	7.6	8.1	7.6	11	8.98
G37S	5.5	5.8	5.8	6.8	5.5	6.8	5.88
G38	2.3	0.3	0.2	0.43	0.2	2.3	1.106
G39	0.2	0.25	0.2	0.2	0.2	0.25	0.21
G40	0.88	1.2	2.1	1.1	0.88	2.1	1.232
MW106	1	0.05	0.2	0.2	0.05	1	0.49
P1	2.1	0.05	0.2	0.2	0.05	2.1	0.93
P3R	0.5	0.088	0.2		0.088	0.5	0.2626666667
P4R	8.1	9	0.2	0.2	0.2	9	5.12

pH S.U.

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	7.14	8.3	7.14	6.17	6.17	8.3	7.178
G109	6.68	7.5	6.66	5.96	5.96	7.5	6.696
G109A	6.97	7.7	6.45	6.78	6.45	7.7	6.974
G113	6.77	7.7	6.66	5.94	5.94	7.7	6.768
G113A	6.83	7.6	6.69	6.21	6.21	7.6	6.832
G114	6.51	7.7	6.35	6.94	6.35	7.7	6.802
G115	6.54	6.8	6.61		6.54	6.8	6.6225
G116A	7.26	8.1	7.18	6.22	6.22	8.1	7.204

G116D	7.21	8.1	7.35	5.46	5.46	8.1	7.066
G117	7.21	8.1	7.45	7.26	7.21	8.1	7.446
G118A	6.95	7.7	7.18	6.68	6.68	7.7	7.092
G118R	6.88	7.5	7.01	7.46	6.88	7.5	7.146
G119	7.07	8.2	7.33	6.42	6.42	8.2	7.218
G120B	7.06	7.9	7.77	5.95	5.95	7.9	7.148
G130	6.63	8.2	7.4	7.8	6.63	8.2	7.332
G132	7.01	8	7.44	7.05	7.01	8	7.302
G33D	7.21	8.3	7.53	7.84	7.21	8.3	7.618
G33S	7.16	8.2	7.48	7.38	7.16	8.2	7.476
G34D	7.66	7.6	7.43	5.33	5.33	7.66	7.136
G34S	7.38	8	7.19	6.48	6.48	8	7.286
G35D	7.46	8	7.13	7.45	7.13	8	7.5
G35S	7.07	8	7.15	7.38	7.07	8	7.334
G36	6.56	7.8	7.56	7.01	6.56	7.8	7.098
G37D	7.2	8.1	7.34	7.17	7.17	8.1	7.402
G37S	7.38	8.3	7.46	7.27	7.27	8.3	7.558
G38	6.79	8	6.92	6.94	6.79	8	7.088
G39	6.83	7.8	6.83	6.86	6.83	7.8	7.03
G40	7	7.6	7.02	7.35	7	7.6	7.194
MW106	7.43	8	7.08	6.64	6.64	8	7.316
P1	7.21	7.6	7.28	6.46	6.46	7.6	7.152
P3R	7.4	7.5	6.31		6.31	7.5	7.1525
P4R	7.07	7.9	6.93	6.83	6.83	7.9	7.16

Phenol **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	15	10	10	20	10	20	14
G109	11	10	10	10	10	11	10.4
G109A	10	10	10	31	10	31	14.2
G113	10	10	10	10	10	10	10
G113A	10	10	10	30	10	30	14
G114	10	10	10	10	10	10	10
G115	64	10	10		10	64	37
G116A	13	10	10	20	10	20	13.2
G116D	10	10	10	19	10	19	11.8
G117	10	10	10	17	10	17	11.4
G118A	10	10	10	41	10	41	16.2
G118R	10	13	10	20	10	20	12.6
G119	44	26	10	10	10	44	26.8
G120B	12	10	10	10	10	12	10.8
G130	10	10	10	10	10	10	10
G132	10	10	10	10	10	10	10
G33D	10	190	10	10	10	190	46
G33S	15	10	15	10	10	15	13
G34D	12	10	10	15	10	15	11.8

G34S	10	10	10	10	10	10	10
G35D	16	17	10	16	10	17	15
G35S	10	26	10	10	10	26	13.2
G36	10	10	10	10	10	10	10
G37D	10	10	10	54	10	54	18.8
G37S	10	10	10	10	10	10	10
G38	10	10	790	12	10	790	166.4
G39	10	10	10	10	10	10	10
G40	48	14	10	22	10	48	28.4
MW106	26	11	10	10	10	26	16.6
P1	19	10	13	26	10	26	17.4
P3R	10	23	10		10	23	14.333333333
P4R	10	10	10	19	10	19	11.8

Specific Conductance umhos

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	2750	2700	2850	2750	2700	2850	2760
G109	1540	1490	1710	1708	1490	1710	1597.6
G109A	1710	1640	1510	1908	1510	1908	1695.6
G113	1330	1320	1330	1375	1320	1375	1337
G113A	1260	1360	1300	1458	1260	1458	1327.6
G114	1490	1420	1600	1389	1389	1600	1477.8
G115	1760	1700	1660		1660	1760	1720
G116A	815	790	1320	1103	790	1320	968.6
G116D	615	690	625	697	615	697	648.4
G117	1030	1090	830	962	830	1090	988.4
G118A	750	690	720	786	690	786	739.2
G118R	985	765	712	3068	712	3068	1303
G119	710	670	725	825	670	825	728
G120B	655	610	635	714	610	714	653.8
G130	715	715	685	622	622	715	690.4
G132	655	670	670	1643	655	1643	858.6
G33D	670	705	670	581	581	705	659.2
G33S	680	680	670	676	670	680	677.2
G34D	650	705	760	803	650	803	713.6
G34S	1140	1150	1120	1136	1120	1150	1137.2
G35D	3800	4140	895	769	769	4140	2680.8
G35S	820	750	800	833	750	833	804.6
G36	715	730	700	833	700	833	738.6
G37D	740	730	750	939	730	939	779.8
G37S	700	710	710	888	700	888	741.6
G38	2010	1600	3640	3049	1600	3640	2461.8
G39	1410	1270	1310	1685	1270	1685	1417
G40	1340	1400	1150	323	323	1400	1110.6
MW106	4110	3900	2229	2597	2229	4110	3389.2
P1	2370	2310	2780	1857	1857	2780	2337.4

P3R	1200	1040	1410		1040	1410	1212.5
P4R	985	790	1320	2494	790	2494	1314.8

Sulfate (dis) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	22	33	15	15	15	33	21.4
G109	10	12	52	14	10	52	19.6
G109A	30	27	14	18	14	30	23.8
G113	37	31	25	18	18	37	29.6
G113A	32	32	29	23	23	32	29.6
G114	30	33	29	41	29	41	32.6
G115	2	2	7.6		2	7.6	3.4
G116A	27	27	23	26	23	27	26
G116D	32	32	32	32	32	32	32
G117	39	43	25	36	25	43	36.4
G118A	23	24	23	22	22	24	23
G118R	28	33	21	32	21	33	28.4
G119	16	10	12	15	10	16	13.8
G120B	27	29	25	26	25	29	26.8
G130	30	6	36	39	6	39	28.2
G132	28	28	23	22	22	28	25.8
G33D	33	32	38	36	32	38	34.4
G33S	33	32	33	30	30	33	32.2
G34D	24	25	28	29	24	29	26
G34S	23	24	24	23	23	24	23.4
G35D	7.8	14	24	24	7.8	24	15.52
G35S	28	28	31	27	27	31	28.4
G36	29	28	31	41	28	41	31.6
G37D	25	25	24	24	24	25	24.6
G37S	21	25	22	19	19	25	21.6
G38	18	20	13	13	13	20	16.4
G39	29	26	33	24	24	33	28.2
G40	24	24	27	25	24	27	24.8
MW106	10	8.5	21	21	8.5	21	14.1
P1	10	10	15	22	10	22	13.4
P3R	33	32	25		25	33	30
P4R	30	29	25	17	17	30	26.2

Total Dissolved Solids (TDS) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	1100	1100	1400	1000	1000	1400	1133.3333333
G109	870	895	1200	900	870	1200	938.33333333
G109A	960	950	990	950	930	990	960
G113	800	790	790	700	700	820	778.33333333
G113A	760	800	990	740	740	990	808.33333333
G114	870	890	1100	870	870	1100	915

G115	860	900	1100		860	1100	924
G116A	420	455	730	440	420	730	486.66666667
G116D	350	380	460	380	350	460	383.33333333
G117	600	660	570	550	550	660	606.66666667
G118A	410	420	500	400	400	500	426.66666667
G118R	550	480	430	1800	430	1800	715
G119	450	390	460	420	390	460	426.66666667
G120B	340	360	500	370	340	500	378.33333333
G130	420	460	500	390	390	500	441.66666667
G132	370	395	990	700	370	990	536.66666667
G33D	380	405	520	380	380	520	411.66666667
G33S	370	415	520	380	370	520	411.66666667
G34D	380	425	560	420	380	560	431.66666667
G34S	520	610	710	510	510	710	580
G35D	1300	1100	480	410	410	1300	948.33333333
G35S	410	420	500	440	410	500	433.33333333
G36	420	420	480	360	360	480	420
G37D	410	430	530	400	400	530	435
G37S	390	445	490	410	390	490	428.33333333
G38	800	835	1900	1600	800	1900	1128.3333333
G39	770	725	840	730	710	840	760
G40	710	710	700	690	690	710	705
MW106	1400	1400	960	820	820	1400	1230
P1	890	905	1100	620	620	1100	885
P3R	660	525	850		510	850	640
P4R	450	445	940	1100	430	1100	638.33333333

Zinc (dis) **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R	1700	1100	390	40	40	1700	986
G109	1100	2700	11000	520	520	11000	3284
G109A	6500	6300	1900	8700	1900	8700	5980
G113	300	130	74	65	65	300	173.8
G113A	140	490	530	360	140	530	332
G114	100	76	30	97	30	100	80.6
G115	20	20	20		20	20	20
G116A	20	20	20	20	20	20	20
G116D	20	20	20	20	20	20	20
G117	110	56	38	120	38	120	86.8
G118A	20	20	20	35	20	35	23
G118R	20	20	20	23	20	23	20.6
G119	20	20	20	20	20	20	20
G120B	20	20	20	20	20	20	20
G130	20	20	20	20	20	20	20
G132	20	20	20	20	20	20	20
G33D	20	20	20	20	20	20	20

G33S	20	20	20	20	20	20	20
G34D	20	20	20	25	20	25	21
G34S	20	22	20	31	20	31	22.6
G35D	20	20	20	20	20	20	20
G35S	20	20	20	20	20	20	20
G36	20	20	20	20	20	20	20
G37D	20	20	20	20	20	20	20
G37S	20	20	39	20	20	39	23.8
G38	20	35	32	50	20	50	31.4
G39	33	83	20	36	20	83	41
G40	20	20	20	20	20	20	20
MW106	1300	990	20	20	20	1300	726
P1	20	32	570	880	20	880	304.4
P3R	52	20	20		20	52	30.666666667
P4R	20	20	20	20	20	20	20

Parameter Group: G2

1,1,1,2-Tetrachloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1

G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,1,1-Trichloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1.7			1.7	1.7	1.7
G130		1			1	1	1
G132		2			2	2	2
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		2.1			2.1	2.1	2.1

1,1,2,2-Tetrachloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1

G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,1,2-Trichloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1

G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,1-Dichloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2.5			2.5	2.5	2.5
G109		1			1	1	1
G109A		1.6			1.6	1.6	1.6
G113		1.3			1.3	1.3	1.3
G113A		1			1	1	1
G114		1.4			1.4	1.4	1.4
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1.5			1.5	1.5	1.5
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1

G37S		1			1	1	1
G38		1			1	1	1
G39		1.9			1.9	1.9	1.9
G40		1.8			1.8	1.8	1.8
MW106		1			1	1	1
P1		1			1	1	1
P3R		2.4			2.4	2.4	2.4
P4R		1.3			1.3	1.3	1.3

1,1-Dichloroethene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,1-Dichloropropene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2,3-Trichlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1

G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2,3-Trichloropropane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1

G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2,4-Trichlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2,4-Trimethylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2-Dibromo-3-chloropropane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G114		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2

G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

1,2-Dichlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		2.4			2.4	2.4	2.4
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1

G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1.4			1.4	1.4	1.4
MW106		1.4			1.4	1.4	1.4
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,2-Dichloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1

P3R		1			1	1	1
P4R		1			1	1	1

1,2-Dichloropropane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,3,5-Trimethylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1

G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,3-Dichlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1

G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,3-Dichloropropane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1

MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

1,4-Dichlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		9.4			9.4	9.4	9.4
G109		1.4			1.4	1.4	1.4
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		25			25	25	25
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		2.7			2.7	2.7	2.7
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		6.3			6.3	6.3	6.3
MW106		6.6			6.6	6.6	6.6
P1		3.9			3.9	3.9	3.9
P3R		1			1	1	1
P4R		1			1	1	1

2,2-Dichloropropane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1

G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

2,4,5-TP(silvex) ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.5			0.5	0.5	0.5
G109		0.5			0.5	0.5	0.5
G109A		0.5			0.5	0.5	0.5
G113		0.5			0.5	0.5	0.5
G113A		0.5			0.5	0.5	0.5
G114		0.5			0.5	0.5	0.5
G115		0.5			0.5	0.5	0.5
G116A		0.5			0.5	0.5	0.5
G116D		0.5			0.5	0.5	0.5
G117		0.5			0.5	0.5	0.5
G118A		0.5			0.5	0.5	0.5
G118R		0.5			0.5	0.5	0.5
G119		0.5			0.5	0.5	0.5
G120B		0.5			0.5	0.5	0.5
G130		0.5			0.5	0.5	0.5

G132		0.5			0.5	0.5	0.5
G33D		0.5			0.5	0.5	0.5
G33S		0.5			0.5	0.5	0.5
G34D		0.5			0.5	0.5	0.5
G34S		0.5			0.5	0.5	0.5
G35D		0.5			0.5	0.5	0.5
G35S		0.5			0.5	0.5	0.5
G36		0.5			0.5	0.5	0.5
G37D		0.5			0.5	0.5	0.5
G37S		0.5			0.5	0.5	0.5
G38		0.5			0.5	0.5	0.5
G39		0.5			0.5	0.5	0.5
G40		0.5			0.5	0.5	0.5
MW106		0.5			0.5	0.5	0.5
P1		0.5			0.5	0.5	0.5
P3R		0.5			0.5	0.5	0.5
P4R		0.5			0.5	0.5	0.5

2,4-D **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.5			0.5	0.5	0.5
G109		0.5			0.5	0.5	0.5
G109A		0.5			0.5	0.5	0.5
G113		0.5			0.5	0.5	0.5
G113A		0.5			0.5	0.5	0.5
G114		0.5			0.5	0.5	0.5
G115		0.5			0.5	0.5	0.5
G116A		0.5			0.5	0.5	0.5
G116D		0.5			0.5	0.5	0.5
G117		0.5			0.5	0.5	0.5
G118A		0.5			0.5	0.5	0.5
G118R		0.5			0.5	0.5	0.5
G119		0.5			0.5	0.5	0.5
G120B		0.5			0.5	0.5	0.5
G130		0.5			0.5	0.5	0.5
G132		0.5			0.5	0.5	0.5
G33D		0.5			0.5	0.5	0.5
G33S		0.5			0.5	0.5	0.5
G34D		0.5			0.5	0.5	0.5
G34S		0.5			0.5	0.5	0.5
G35D		0.5			0.5	0.5	0.5
G35S		0.5			0.5	0.5	0.5
G36		0.5			0.5	0.5	0.5
G37D		0.5			0.5	0.5	0.5
G37S		0.5			0.5	0.5	0.5
G38		0.5			0.5	0.5	0.5

G39		0.5			0.5	0.5	0.5
G40		0.5			0.5	0.5	0.5
MW106		0.5			0.5	0.5	0.5
P1		0.5			0.5	0.5	0.5
P3R		0.5			0.5	0.5	0.5
P4R		0.5			0.5	0.5	0.5

2-Butanone ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

2-Hexanone ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5

G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

4-Methyl-2-pentanone ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5

G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Acetone **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5

G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Acrolein **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		10			10	10	10
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		10			10	10	10
G119		10			10	10	10
G120B		10			10	10	10
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		10			10	10	10
G34S		10			10	10	10
G35D		10			10	10	10
G35S		10			10	10	10
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		10			10	10	10
P1		10			10	10	10
P3R		10			10	10	10
P4R		10			10	10	10

Acrylonitrile **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Alachlor **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2

G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Aldicarb **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1

G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Aldrin ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.052			0.052	0.052	0.052
G109		0.051			0.051	0.051	0.051
G109A		0.052			0.052	0.052	0.052
G113		0.052			0.052	0.052	0.052
G113A		0.051			0.051	0.051	0.051
G114		0.051			0.051	0.051	0.051
G115		0.051			0.051	0.051	0.051
G116A		0.052			0.052	0.052	0.052
G116D		0.052			0.052	0.052	0.052
G117		0.051			0.051	0.051	0.051
G118A		0.051			0.051	0.051	0.051
G118R		0.055			0.055	0.055	0.055
G119		0.052			0.052	0.052	0.052
G120B		0.052			0.052	0.052	0.052
G130		0.052			0.052	0.052	0.052
G132		0.051			0.051	0.051	0.051
G33D		0.051			0.051	0.051	0.051
G33S		0.051			0.051	0.051	0.051
G34D		0.052			0.052	0.052	0.052
G34S		0.053			0.053	0.053	0.053
G35D		0.051			0.051	0.051	0.051
G35S		0.051			0.051	0.051	0.051
G36		0.052			0.052	0.052	0.052
G37D		0.053			0.053	0.053	0.053
G37S		0.052			0.052	0.052	0.052
G38		0.052			0.052	0.052	0.052
G39		0.051			0.051	0.051	0.051
G40		0.051			0.051	0.051	0.051
MW106		0.051			0.051	0.051	0.051
P1		0.052			0.052	0.052	0.052
P3R		0.052			0.052	0.052	0.052
P4R		0.052			0.052	0.052	0.052

Aluminum mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		7600			7600	7600	7600
G109		500			500	500	500
G109A		630			630	630	630
G113		50			50	50	50
G113A		13000			13000	13000	13000
G114		380			380	380	380
G115		87000			87000	87000	87000
G116A		250			250	250	250
G116D		84			84	84	84
G117		10000			10000	10000	10000
G118A		280			280	280	280
G118R		21000			21000	21000	21000
G119		73000			73000	73000	73000
G120B		120			120	120	120
G130		39000			39000	39000	39000
G132		50			50	50	50
G33D		3000			3000	3000	3000
G33S		32000			32000	32000	32000
G34D		50			50	50	50
G34S		8800			8800	8800	8800
G35D		1300			1300	1300	1300
G35S		81000			81000	81000	81000
G36		1000			1000	1000	1000
G37D		7700			7700	7700	7700
G37S		18000			18000	18000	18000
G38		6900			6900	6900	6900
G39		510			510	510	510
G40		51000			51000	51000	51000
MW106		170			170	170	170
P1		860			860	860	860
P3R		52000			52000	52000	52000
P4R		50			50	50	50

Ammonia, Nitrogen mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.1			0.1	0.1	0.1
G109		0.1			0.1	0.1	0.1
G109A		0.1			0.1	0.1	0.1
G113		0.18			0.18	0.18	0.18
G113A		0.1			0.1	0.1	0.1
G114		0.74			0.74	0.74	0.74
G115		2			2	2	2
G116A		3.5			3.5	3.5	3.5

G116D		0.1			0.1	0.1	0.1
G117		0.1			0.1	0.1	0.1
G118A		0.1			0.1	0.1	0.1
G118R		0.12			0.12	0.12	0.12
G119		0.1			0.1	0.1	0.1
G120B		0.1			0.1	0.1	0.1
G130		0.1			0.1	0.1	0.1
G132		0.41			0.41	0.41	0.41
G33D		0.1			0.1	0.1	0.1
G33S		0.1			0.1	0.1	0.1
G34D		280			280	280	280
G34S		23			23	23	23
G35D		140			140	140	140
G35S		12			12	12	12
G36		0.1			0.1	0.1	0.1
G37D		2.2			2.2	2.2	2.2
G37S		0.1			0.1	0.1	0.1
G38		82			82	82	82
G39		0.31			0.31	0.31	0.31
G40		19			19	19	19
MW106		280			280	280	280
P1		120			120	120	120
P3R		13			13	13	13
P4R		0.65			0.65	0.65	0.65

Antimony **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		6			6	6	6
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5

G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Arsenic **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		37			37	37	37
G109		3			3	3	3
G109A		3			3	3	3
G113		3			3	3	3
G113A		3.9			3.9	3.9	3.9
G114		74			74	74	74
G115		96			96	96	96
G116A		3			3	3	3
G116D		3			3	3	3
G117		3.1			3.1	3.1	3.1
G118A		3			3	3	3
G118R		7.7			7.7	7.7	7.7
G119		61			61	61	61
G120B		3			3	3	3
G130		15			15	15	15
G132		3			3	3	3
G33D		4.9			4.9	4.9	4.9
G33S		11			11	11	11
G34D		3			3	3	3
G34S		11			11	11	11
G35D		36			36	36	36
G35S		100			100	100	100
G36		3			3	3	3
G37D		4.6			4.6	4.6	4.6
G37S		6.7			6.7	6.7	6.7
G38		6.1			6.1	6.1	6.1
G39		3			3	3	3
G40		29			29	29	29
MW106		26			26	26	26
P1		35			35	35	35

P3R		40			40	40	40
P4R		3			3	3	3

Atrazine ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Barium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		380			380	380	380
G109		220			220	220	220
G109A		180			180	180	180
G113		150			150	150	150
G113A		230			230	230	230
G114		500			500	500	500
G115		1800			1800	1800	1800

G116A		310			310	310	310
G116D		100			100	100	100
G117		120			120	120	120
G118A		41			41	41	41
G118R		310			310	310	310
G119		430			430	430	430
G120B		68			68	68	68
G130		620			620	620	620
G132		68			68	68	68
G33D		110			110	110	110
G33S		280			280	280	280
G34D		32			32	32	32
G34S		370			370	370	370
G35D		560			560	560	560
G35S		1000			1000	1000	1000
G36		210			210	210	210
G37D		98			98	98	98
G37S		140			140	140	140
G38		1100			1100	1100	1100
G39		160			160	160	160
G40		490			490	490	490
MW106		730			730	730	730
P1		390			390	390	390
P3R		640			640	640	640
P4R		110			110	110	110

Benzene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1.5			1.5	1.5	1.5
G109		2			2	2	2
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		2.7			2.7	2.7	2.7
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1

G34D		1			1	1	1
G34S		1			1	1	1
G35D		1.2			1.2	1.2	1.2
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		2			2	2	2
P1		1.2			1.2	1.2	1.2
P3R		1			1	1	1
P4R		1			1	1	1

Benzo(a)pyrene **ug/L**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10	10	10	10	10	10
G109A		10	10	10	10	10	10
G113		10	10	10	10	10	10
G113A		11	10	10	10	11	10.333333333
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11	10	10	10	11	10.333333333
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11

P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Beryllium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		3.6			3.6	3.6	3.6
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		3.1			3.1	3.1	3.1
G120B		1			1	1	1
G130		1.1			1.1	1.1	1.1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1.1			1.1	1.1	1.1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		3.5			3.5	3.5	3.5
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1.4			1.4	1.4	1.4
MW106		1			1	1	1
P1		1			1	1	1
P3R		1.8			1.8	1.8	1.8
P4R		1			1	1	1

BHC, gamma ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.052			0.052	0.052	0.052
G109		0.051			0.051	0.051	0.051
G109A		0.052			0.052	0.052	0.052
G113		0.052			0.052	0.052	0.052
G113A		0.051			0.051	0.051	0.051

G114		0.051			0.051	0.051	0.051
G115		0.051			0.051	0.051	0.051
G116A		0.052			0.052	0.052	0.052
G116D		0.052			0.052	0.052	0.052
G117		0.051			0.051	0.051	0.051
G118A		0.051			0.051	0.051	0.051
G118R		0.055			0.055	0.055	0.055
G119		0.052			0.052	0.052	0.052
G120B		0.052			0.052	0.052	0.052
G130		0.052			0.052	0.052	0.052
G132		0.051			0.051	0.051	0.051
G33D		0.051			0.051	0.051	0.051
G33S		0.051			0.051	0.051	0.051
G34D		0.052			0.052	0.052	0.052
G34S		0.053			0.053	0.053	0.053
G35D		0.051			0.051	0.051	0.051
G35S		0.051			0.051	0.051	0.051
G36		0.052			0.052	0.052	0.052
G37D		0.053			0.053	0.053	0.053
G37S		0.052			0.052	0.052	0.052
G38		0.052			0.052	0.052	0.052
G39		0.051			0.051	0.051	0.051
G40		0.051			0.051	0.051	0.051
MW106		0.051			0.051	0.051	0.051
P1		0.052			0.052	0.052	0.052
P3R		0.052			0.052	0.052	0.052
P4R		0.052			0.052	0.052	0.052

Biological Oxygen Demand (BOD) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		37			37	37	37
G109		3.5			3.5	3.5	3.5
G109A		2			2	2	2
G113		2.2			2.2	2.2	2.2
G113A		3.6			3.6	3.6	3.6
G114		4			4	4	4
G115		82			82	82	82
G116A		2.4			2.4	2.4	2.4
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		29			29	29	29
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		23			23	23	23

G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2.1			2.1	2.1	2.1
G35D		5.9			5.9	5.9	5.9
G35S		5.3			5.3	5.3	5.3
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		4			4	4	4
G39		20			20	20	20
G40		15			15	15	15
MW106		25			25	25	25
P1		24			24	24	24
P3R		21			21	21	21
P4R		22			22	22	22

bis(2-Ethylhexyl)phthalate ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		33			33	33	33
G109A		65			65	65	65
G113		10			10	10	10
G113A		4.8			4.8	4.8	4.8
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		5.1			5.1	5.1	5.1
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		5.7			5.7	5.7	5.7

G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Boron mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		370			370	370	370
G109		98			98	98	98
G109A		98			98	98	98
G113		98			98	98	98
G113A		150			150	150	150
G114		100			100	100	100
G115		180			180	180	180
G116A		98			98	98	98
G116D		98			98	98	98
G117		98			98	98	98
G118A		98			98	98	98
G118R		150			150	150	150
G119		130			130	130	130
G120B		98			98	98	98
G130		98			98	98	98
G132		98			98	98	98
G33D		98			98	98	98
G33S		98			98	98	98
G34D		98			98	98	98
G34S		170			170	170	170
G35D		1200			1200	1200	1200
G35S		140			140	140	140
G36		98			98	98	98
G37D		98			98	98	98
G37S		98			98	98	98
G38		290			290	290	290
G39		100			100	100	100
G40		230			230	230	230
MW106		1200			1200	1200	1200
P1		790			790	790	790
P3R		190			190	190	190
P4R		98			98	98	98

Bromobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1

G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Bromochloromethane **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1

G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Bromodichloromethane **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1

G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Bromoform ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Bromomethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2

G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G114		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Cadmium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		8			8	8	8
G109		2.2			2.2	2.2	2.2
G109A		2.3			2.3	2.3	2.3
G113		1			1	1	1
G113A		2.1			2.1	2.1	2.1
G114		1			1	1	1
G115		4			4	4	4
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1

G119		2			2	2	2
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		4.7			4.7	4.7	4.7
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1.3			1.3	1.3	1.3
MW106		5.2			5.2	5.2	5.2
P1		1			1	1	1
P3R		2			2	2	2
P4R		1			1	1	1

Calcium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		150			150	150	150
G109		240			240	240	240
G109A		200			200	200	200
G113		180			180	180	180
G113A		400			400	400	400
G114		230			230	230	230
G115		390			390	390	390
G116A		82			82	82	82
G116D		74			74	74	74
G117		160			160	160	160
G118A		80			80	80	80
G118R		120			120	120	120
G119		480			480	480	480
G120B		69			69	69	69
G130		230			230	230	230
G132		73			73	73	73
G33D		93			93	93	93
G33S		250			250	250	250
G34D		84			84	84	84
G34S		160			160	160	160
G35D		43			43	43	43
G35S		670			670	670	670
G36		82			82	82	82

G37D		140			140	140	140
G37S		130			130	130	130
G38		120			120	120	120
G39		140			140	140	140
G40		460			460	460	460
MW106		62			62	62	62
P1		79			79	79	79
P3R		880			880	880	880
P4R		90			90	90	90

Carbofuran ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Carbon disulfide ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2.2			2.2	2.2	2.2
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Carbon tetrachloride ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1

G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Chemical Oxygen Demand (COD) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		120			120	120	120
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		14			14	14	14
G114		10			10	10	10
G115		61			61	61	61
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		30			30	30	30
G119		10			10	10	10
G120B		10			10	10	10
G130		36			36	36	36
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		10			10	10	10

G34S		14			14	14	14
G35D		240			240	240	240
G35S		10			10	10	10
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		120			120	120	120
G39		10			10	10	10
G40		10			10	10	10
MW106		270			270	270	270
P1		56			56	56	56
P3R		10			10	10	10
P4R		10			10	10	10

Chlordane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1

P3R		1			1	1	1
P4R		1			1	1	1

Chloride mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		20			20	20	20
G109		2.5			2.5	2.5	2.5
G109A		160			160	160	160
G113		20			20	20	20
G113A		32			32	32	32
G114		36			36	36	36
G115		120			120	120	120
G116A		39			39	39	39
G116D		9.9			9.9	9.9	9.9
G117		55			55	55	55
G118A		26			26	26	26
G118R		63			63	63	63
G119		12			12	12	12
G120B		20			20	20	20
G130		31			31	31	31
G132		20			20	20	20
G33D		42			42	42	42
G33S		19			19	19	19
G34D		32			32	32	32
G34S		100			100	100	100
G35D		550			550	550	550
G35S		36			36	36	36
G36		31			31	31	31
G37D		29			29	29	29
G37S		32			32	32	32
G38		29			29	29	29
G39		110			110	110	110
G40		100			100	100	100
MW106		520			520	520	520
P1		28			28	28	28
P3R		57			57	57	57
P4R		34			34	34	34

Chlorobenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1.3			1.3	1.3	1.3
G109		1.6			1.6	1.6	1.6
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		11			11	11	11

G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1.9			1.9	1.9	1.9
P1		1.9			1.9	1.9	1.9
P3R		1			1	1	1
P4R		1			1	1	1

Chlorodibromomethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1

G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Chloroethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G114		2			2	2	2
G115		4.8			4.8	4.8	4.8
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2

MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Chloroform ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Chloromethane ug/L

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2

G113A		2			2	2	2
G114		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Chromium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		160			160	160	160
G109		38			38	38	38
G109A		34			34	34	34
G113		3			3	3	3
G113A		53			53	53	53
G114		9.1			9.1	9.1	9.1
G115		180			180	180	180
G116A		6.6			6.6	6.6	6.6
G116D		3			3	3	3
G117		44			44	44	44
G118A		6.9			6.9	6.9	6.9
G118R		1400			1400	1400	1400
G119		140			140	140	140
G120B		3			3	3	3
G130		82			82	82	82

G132		3			3	3	3
G33D		27			27	27	27
G33S		78			78	78	78
G34D		3			3	3	3
G34S		37			37	37	37
G35D		14			14	14	14
G35S		190			190	190	190
G36		15			15	15	15
G37D		19			19	19	19
G37S		35			35	35	35
G38		33			33	33	33
G39		41			41	41	41
G40		120			120	120	120
MW106		100			100	100	100
P1		35			35	35	35
P3R		140			140	140	140
P4R		3			3	3	3

cis-1,2-Dichloroethene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		5.6			5.6	5.6	5.6
G113		5.5			5.5	5.5	5.5
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		3.2			3.2	3.2	3.2
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		11			11	11	11
G130		1			1	1	1
G132		7.8			7.8	7.8	7.8
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		2.5			2.5	2.5	2.5
G35D		1			1	1	1
G35S		3.5			3.5	3.5	3.5
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1

G39		3			3	3	3
G40		2.3			2.3	2.3	2.3
MW106		1			1	1	1
P1		1			1	1	1
P3R		2.7			2.7	2.7	2.7
P4R		10			10	10	10

cis-1,3-Dichloropropene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Cobalt mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		74			74	74	74
G109		3			3	3	3

G109A		3			3	3	3
G113		3			3	3	3
G113A		5.3			5.3	5.3	5.3
G114		11			11	11	11
G115		52			52	52	52
G116A		3			3	3	3
G116D		3			3	3	3
G117		6.8			6.8	6.8	6.8
G118A		3			3	3	3
G118R		24			24	24	24
G119		52			52	52	52
G120B		3			3	3	3
G130		22			22	22	22
G132		3			3	3	3
G33D		3			3	3	3
G33S		24			24	24	24
G34D		3			3	3	3
G34S		9.5			9.5	9.5	9.5
G35D		14			14	14	14
G35S		57			57	57	57
G36		3			3	3	3
G37D		5.3			5.3	5.3	5.3
G37S		13			13	13	13
G38		9.4			9.4	9.4	9.4
G39		3			3	3	3
G40		29			29	29	29
MW106		16			16	16	16
P1		7.2			7.2	7.2	7.2
P3R		34			34	34	34
P4R		3			3	3	3

Copper mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		150			150	150	150
G109		12			12	12	12
G109A		10			10	10	10
G113		13			13	13	13
G113A		39			39	39	39
G114		17			17	17	17
G115		190			190	190	190
G116A		10			10	10	10
G116D		10			10	10	10
G117		17			17	17	17
G118A		10			10	10	10
G118R		47			47	47	47
G119		230			230	230	230

G120B		10			10	10	10
G130		69			69	69	69
G132		10			10	10	10
G33D		36			36	36	36
G33S		120			120	120	120
G34D		10			10	10	10
G34S		43			43	43	43
G35D		13			13	13	13
G35S		270			270	270	270
G36		11			11	11	11
G37D		25			25	25	25
G37S		54			54	54	54
G38		61			61	61	61
G39		10			10	10	10
G40		130			130	130	130
MW106		17			17	17	17
P1		11			11	11	11
P3R		210			210	210	210
P4R		10			10	10	10

DDT **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.1			0.1	0.1	0.1
G109		0.1			0.1	0.1	0.1
G109A		0.1			0.1	0.1	0.1
G113		0.1			0.1	0.1	0.1
G113A		0.1			0.1	0.1	0.1
G114		0.1			0.1	0.1	0.1
G115		0.1			0.1	0.1	0.1
G116A		0.1			0.1	0.1	0.1
G116D		0.1			0.1	0.1	0.1
G117		0.1			0.1	0.1	0.1
G118A		0.1			0.1	0.1	0.1
G118R		0.11			0.11	0.11	0.11
G119		0.1			0.1	0.1	0.1
G120B		0.1			0.1	0.1	0.1
G130		0.1			0.1	0.1	0.1
G132		0.1			0.1	0.1	0.1
G33D		0.1			0.1	0.1	0.1
G33S		0.1			0.1	0.1	0.1
G34D		0.1			0.1	0.1	0.1
G34S		0.11			0.11	0.11	0.11
G35D		0.1			0.1	0.1	0.1
G35S		0.1			0.1	0.1	0.1
G36		0.1			0.1	0.1	0.1
G37D		0.11			0.11	0.11	0.11

G37S		0.1			0.1	0.1	0.1
G38		0.1			0.1	0.1	0.1
G39		0.1			0.1	0.1	0.1
G40		0.1			0.1	0.1	0.1
MW106		0.1			0.1	0.1	0.1
P1		0.1			0.1	0.1	0.1
P3R		0.1			0.1	0.1	0.1
P4R		0.1			0.1	0.1	0.1

Di-n-butyl phthalate ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		11			11	11	11
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Dichlorodifluoromethane ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R		2			2	2	2
G109		3.1			3.1	3.1	3.1
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G114		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2
G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Dieldrin **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.1			0.1	0.1	0.1
G109		0.1			0.1	0.1	0.1
G109A		0.1			0.1	0.1	0.1
G113		0.1			0.1	0.1	0.1
G113A		0.1			0.1	0.1	0.1
G114		0.1			0.1	0.1	0.1
G115		0.1			0.1	0.1	0.1
G116A		0.1			0.1	0.1	0.1
G116D		0.1			0.1	0.1	0.1
G117		0.1			0.1	0.1	0.1
G118A		0.1			0.1	0.1	0.1

G118R		0.11			0.11	0.11	0.11
G119		0.1			0.1	0.1	0.1
G120B		0.1			0.1	0.1	0.1
G130		0.1			0.1	0.1	0.1
G132		0.1			0.1	0.1	0.1
G33D		0.1			0.1	0.1	0.1
G33S		0.1			0.1	0.1	0.1
G34D		0.1			0.1	0.1	0.1
G34S		0.11			0.11	0.11	0.11
G35D		0.1			0.1	0.1	0.1
G35S		0.1			0.1	0.1	0.1
G36		0.1			0.1	0.1	0.1
G37D		0.11			0.11	0.11	0.11
G37S		0.1			0.1	0.1	0.1
G38		0.1			0.1	0.1	0.1
G39		0.1			0.1	0.1	0.1
G40		0.1			0.1	0.1	0.1
MW106		0.1			0.1	0.1	0.1
P1		0.1			0.1	0.1	0.1
P3R		0.1			0.1	0.1	0.1
P4R		0.1			0.1	0.1	0.1

Diethyl phthalate **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		11			11	11	11
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11

G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Dimethyl phthalate **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		11			11	11	11
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Endrin ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.1			0.1	0.1	0.1
G109		0.1			0.1	0.1	0.1
G109A		0.1			0.1	0.1	0.1
G113		0.1			0.1	0.1	0.1
G113A		0.1			0.1	0.1	0.1
G114		0.1			0.1	0.1	0.1
G115		0.1			0.1	0.1	0.1
G116A		0.1			0.1	0.1	0.1
G116D		0.1			0.1	0.1	0.1
G117		0.1			0.1	0.1	0.1
G118A		0.1			0.1	0.1	0.1
G118R		0.11			0.11	0.11	0.11
G119		0.1			0.1	0.1	0.1
G120B		0.1			0.1	0.1	0.1
G130		0.1			0.1	0.1	0.1
G132		0.1			0.1	0.1	0.1
G33D		0.1			0.1	0.1	0.1
G33S		0.1			0.1	0.1	0.1
G34D		0.1			0.1	0.1	0.1
G34S		0.11			0.11	0.11	0.11
G35D		0.1			0.1	0.1	0.1
G35S		0.1			0.1	0.1	0.1
G36		0.1			0.1	0.1	0.1
G37D		0.11			0.11	0.11	0.11
G37S		0.1			0.1	0.1	0.1
G38		0.1			0.1	0.1	0.1
G39		0.1			0.1	0.1	0.1
G40		0.1			0.1	0.1	0.1
MW106		0.1			0.1	0.1	0.1
P1		0.1			0.1	0.1	0.1
P3R		0.1			0.1	0.1	0.1
P4R		0.1			0.1	0.1	0.1

Ethylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1

G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Fluoride mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.65			0.65	0.65	0.65
G109		0.49			0.49	0.49	0.49
G109A		0.45			0.45	0.45	0.45
G113		0.84			0.84	0.84	0.84
G113A		0.78			0.78	0.78	0.78
G114		0.82			0.82	0.82	0.82
G115		0.81			0.81	0.81	0.81
G116A		0.1			0.1	0.1	0.1
G116D		0.1			0.1	0.1	0.1
G117		0.1			0.1	0.1	0.1
G118A		0.87			0.87	0.87	0.87
G118R		0.66			0.66	0.66	0.66
G119		0.1			0.1	0.1	0.1
G120B		0.64			0.64	0.64	0.64
G130		0.1			0.1	0.1	0.1
G132		1			1	1	1
G33D		0.1			0.1	0.1	0.1
G33S		0.1			0.1	0.1	0.1
G34D		0.1			0.1	0.1	0.1

G34S		0.1			0.1	0.1	0.1
G35D		0.1			0.1	0.1	0.1
G35S		0.12			0.12	0.12	0.12
G36		0.77			0.77	0.77	0.77
G37D		0.1			0.1	0.1	0.1
G37S		0.1			0.1	0.1	0.1
G38		0.1			0.1	0.1	0.1
G39		0.91			0.91	0.91	0.91
G40		0.76			0.76	0.76	0.76
MW106		0.69			0.69	0.69	0.69
P1		0.63			0.63	0.63	0.63
P3R		0.71			0.71	0.71	0.71
P4R		0.65			0.65	0.65	0.65

Heptachlor ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.052			0.052	0.052	0.052
G109		0.051			0.051	0.051	0.051
G109A		0.052			0.052	0.052	0.052
G113		0.052			0.052	0.052	0.052
G113A		0.051			0.051	0.051	0.051
G114		0.051			0.051	0.051	0.051
G115		0.051			0.051	0.051	0.051
G116A		0.052			0.052	0.052	0.052
G116D		0.052			0.052	0.052	0.052
G117		0.051			0.051	0.051	0.051
G118A		0.051			0.051	0.051	0.051
G118R		0.055			0.055	0.055	0.055
G119		0.052			0.052	0.052	0.052
G120B		0.052			0.052	0.052	0.052
G130		0.052			0.052	0.052	0.052
G132		0.051			0.051	0.051	0.051
G33D		0.051			0.051	0.051	0.051
G33S		0.051			0.051	0.051	0.051
G34D		0.052			0.052	0.052	0.052
G34S		0.053			0.053	0.053	0.053
G35D		0.051			0.051	0.051	0.051
G35S		0.051			0.051	0.051	0.051
G36		0.052			0.052	0.052	0.052
G37D		0.053			0.053	0.053	0.053
G37S		0.052			0.052	0.052	0.052
G38		0.052			0.052	0.052	0.052
G39		0.051			0.051	0.051	0.051
G40		0.051			0.051	0.051	0.051
MW106		0.051			0.051	0.051	0.051
P1		0.052			0.052	0.052	0.052

P3R		0.052			0.052	0.052	0.052
P4R		0.052			0.052	0.052	0.052

Heptachlor epoxide ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.052			0.052	0.052	0.052
G109		0.051			0.051	0.051	0.051
G109A		0.052			0.052	0.052	0.052
G113		0.052			0.052	0.052	0.052
G113A		0.051			0.051	0.051	0.051
G114		0.051			0.051	0.051	0.051
G115		0.051			0.051	0.051	0.051
G116A		0.052			0.052	0.052	0.052
G116D		0.052			0.052	0.052	0.052
G117		0.051			0.051	0.051	0.051
G118A		0.051			0.051	0.051	0.051
G118R		0.055			0.055	0.055	0.055
G119		0.052			0.052	0.052	0.052
G120B		0.052			0.052	0.052	0.052
G130		0.052			0.052	0.052	0.052
G132		0.051			0.051	0.051	0.051
G33D		0.051			0.051	0.051	0.051
G33S		0.051			0.051	0.051	0.051
G34D		0.052			0.052	0.052	0.052
G34S		0.053			0.053	0.053	0.053
G35D		0.051			0.051	0.051	0.051
G35S		0.051			0.051	0.051	0.051
G36		0.052			0.052	0.052	0.052
G37D		0.053			0.053	0.053	0.053
G37S		0.052			0.052	0.052	0.052
G38		0.052			0.052	0.052	0.052
G39		0.051			0.051	0.051	0.051
G40		0.051			0.051	0.051	0.051
MW106		0.051			0.051	0.051	0.051
P1		0.052			0.052	0.052	0.052
P3R		0.052			0.052	0.052	0.052
P4R		0.052			0.052	0.052	0.052

Hexachlorobutadiene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		11			11	11	11
G114		10			10	10	10

G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Hexachlorocyclopentadiene ug/L

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10	10	10	10	10	10
G109A		10	10	10	10	10	10
G113		10	10	10	10	10	10
G113A		11	10	10	10	11	10.333333333
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11	10	10	10	11	10.333333333
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10

G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
PI		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Iodomethane **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5

MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Iron mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		32			32	32	32
G109		2.7			2.7	2.7	2.7
G109A		1.8			1.8	1.8	1.8
G113		0.56			0.56	0.56	0.56
G113A		12			12	12	12
G114		12			12	12	12
G115		230			230	230	230
G116A		0.72			0.72	0.72	0.72
G116D		0.05			0.05	0.05	0.05
G117		11			11	11	11
G118A		0.39			0.39	0.39	0.39
G118R		27			27	27	27
G119		150			150	150	150
G120B		0.074			0.074	0.074	0.074
G130		55			55	55	55
G132		0.058			0.058	0.058	0.058
G33D		11			11	11	11
G33S		64			64	64	64
G34D		0.05			0.05	0.05	0.05
G34S		23			23	23	23
G35D		8.2			8.2	8.2	8.2
G35S		270			270	270	270
G36		2.8			2.8	2.8	2.8
G37D		14			14	14	14
G37S		24			24	24	24
G38		17			17	17	17
G39		1.4			1.4	1.4	1.4
G40		84			84	84	84
MW106		11			11	11	11
P1		8.8			8.8	8.8	8.8
P3R		100			100	100	100
P4R		0.05			0.05	0.05	0.05

Isophorone ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10

G113A		11			11	11	11
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		10			10	10	10
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Lead **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		130			130	130	130
G109		75			75	75	75
G109A		29			29	29	29
G113		5			5	5	5
G113A		31			31	31	31
G114		5.9			5.9	5.9	5.9
G115		72			72	72	72
G116A		5			5	5	5
G116D		5			5	5	5
G117		9.3			9.3	9.3	9.3
G118A		5			5	5	5
G118R		19			19	19	19
G119		68			68	68	68
G120B		5			5	5	5
G130		28			28	28	28

G132		5			5	5	5
G33D		7.6			7.6	7.6	7.6
G33S		35			35	35	35
G34D		5			5	5	5
G34S		9.6			9.6	9.6	9.6
G35D		5			5	5	5
G35S		60			60	60	60
G36		5			5	5	5
G37D		11			11	11	11
G37S		18			18	18	18
G38		6.2			6.2	6.2	6.2
G39		5			5	5	5
G40		43			43	43	43
MW106		88			88	88	88
P1		5			5	5	5
P3R		65			65	65	65
P4R		5			5	5	5

Magnesium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		99			99	99	99
G109		87			87	87	87
G109A		82			82	82	82
G113		59			59	59	59
G113A		200			200	200	200
G114		56			56	56	56
G115		210			210	210	210
G116A		40			40	40	40
G116D		39			39	39	39
G117		74			74	74	74
G118A		41			41	41	41
G118R		61			61	61	61
G119		270			270	270	270
G120B		37			37	37	37
G130		120			120	120	120
G132		39			39	39	39
G33D		51			51	51	51
G33S		120			120	120	120
G34D		41			41	41	41
G34S		78			78	78	78
G35D		39			39	39	39
G35S		280			280	280	280
G36		44			44	44	44
G37D		72			72	72	72
G37S		65			65	65	65
G38		78			78	78	78

G39		61			61	61	61
G40		240			240	240	240
MW106		53			53	53	53
P1		54			54	54	54
P3R		410			410	410	410
P4R		41			41	41	41

Manganese mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1600			1600	1600	1600
G109		98			98	98	98
G109A		400			400	400	400
G113		270			270	270	270
G113A		1200			1200	1200	1200
G114		230			230	230	230
G115		4700			4700	4700	4700
G116A		960			960	960	960
G116D		2			2	2	2
G117		290			290	290	290
G118A		34			34	34	34
G118R		4400			4400	4400	4400
G119		3900			3900	3900	3900
G120B		4.2			4.2	4.2	4.2
G130		2500			2500	2500	2500
G132		2			2	2	2
G33D		110			110	110	110
G33S		1900			1900	1900	1900
G34D		2			2	2	2
G34S		740			740	740	740
G35D		120			120	120	120
G35S		6300			6300	6300	6300
G36		44			44	44	44
G37D		310			310	310	310
G37S		780			780	780	780
G38		1000			1000	1000	1000
G39		660			660	660	660
G40		1600			1600	1600	1600
MW106		120			120	120	120
P1		66			66	66	66
P3R		2900			2900	2900	2900
P4R		570			570	570	570

Mercury mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.7			0.7	0.7	0.7
G109		0.2			0.2	0.2	0.2

G109A		0.2			0.2	0.2	0.2
G113		0.2			0.2	0.2	0.2
G113A		0.2			0.2	0.2	0.2
G114		0.2			0.2	0.2	0.2
G115		0.25			0.25	0.25	0.25
G116A		0.2			0.2	0.2	0.2
G116D		0.2			0.2	0.2	0.2
G117		0.2			0.2	0.2	0.2
G118A		0.2			0.2	0.2	0.2
G118R		0.2			0.2	0.2	0.2
G119		0.2			0.2	0.2	0.2
G120B		0.2			0.2	0.2	0.2
G130		0.2			0.2	0.2	0.2
G132		0.2			0.2	0.2	0.2
G33D		0.2			0.2	0.2	0.2
G33S		0.2			0.2	0.2	0.2
G34D		0.2			0.2	0.2	0.2
G34S		0.2			0.2	0.2	0.2
G35D		0.2			0.2	0.2	0.2
G35S		0.2			0.2	0.2	0.2
G36		0.2			0.2	0.2	0.2
G37D		0.2			0.2	0.2	0.2
G37S		0.2			0.2	0.2	0.2
G38		0.2			0.2	0.2	0.2
G39		0.2			0.2	0.2	0.2
G40		0.2			0.2	0.2	0.2
MW106		0.2			0.2	0.2	0.2
P1		0.2			0.2	0.2	0.2
P3R		0.2			0.2	0.2	0.2
P4R		0.2			0.2	0.2	0.2

Methoxychlor ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.52			0.52	0.52	0.52
G109		0.51			0.51	0.51	0.51
G109A		0.52			0.52	0.52	0.52
G113		0.52			0.52	0.52	0.52
G113A		0.51			0.51	0.51	0.51
G114		0.51			0.51	0.51	0.51
G115		0.51			0.51	0.51	0.51
G116A		0.52			0.52	0.52	0.52
G116D		0.52			0.52	0.52	0.52
G117		0.51			0.51	0.51	0.51
G118A		0.51			0.51	0.51	0.51
G118R		0.55			0.55	0.55	0.55
G119		0.52			0.52	0.52	0.52

G120B		0.52			0.52	0.52	0.52
G130		0.52			0.52	0.52	0.52
G132		0.51			0.51	0.51	0.51
G33D		0.51			0.51	0.51	0.51
G33S		0.51			0.51	0.51	0.51
G34D		0.52			0.52	0.52	0.52
G34S		0.53			0.53	0.53	0.53
G35D		0.51			0.51	0.51	0.51
G35S		0.51			0.51	0.51	0.51
G36		0.52			0.52	0.52	0.52
G37D		0.53			0.53	0.53	0.53
G37S		0.52			0.52	0.52	0.52
G38		0.52			0.52	0.52	0.52
G39		0.51			0.51	0.51	0.51
G40		0.51			0.51	0.51	0.51
MW106		0.51			0.51	0.51	0.51
P1		0.52			0.52	0.52	0.52
P3R		0.52			0.52	0.52	0.52
P4R		0.52			0.52	0.52	0.52

Methylene chloride ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1

G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

n-Butylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

n-Propylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Naphthalene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		10			10	10	10
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		11			11	11	11
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10

G118R		11			11	11	11
G119		10			10	10	10
G120B		11			11	11	11
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		11			11	11	11
G34S		10			10	10	10
G35D		2.3			2.3	2.3	2.3
G35S		11			11	11	11
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		11			11	11	11
P1		10			10	10	10
P3R		11			11	11	11
P4R		10			10	10	10

Nickel **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		390			390	390	390
G109		19			19	19	19
G109A		22			22	22	22
G113		7			7	7	7
G113A		36			36	36	36
G114		94			94	94	94
G115		130			130	130	130
G116A		16			16	16	16
G116D		5			5	5	5
G117		30			30	30	30
G118A		5			5	5	5
G118R		150			150	150	150
G119		130			130	130	130
G120B		5			5	5	5
G130		78			78	78	78
G132		5			5	5	5
G33D		16			16	16	16
G33S		60			60	60	60
G34D		6.5			6.5	6.5	6.5
G34S		41			41	41	41
G35D		110			110	110	110
G35S		200			200	200	200

G36		7.6			7.6	7.6	7.6
G37D		17			17	17	17
G37S		31			31	31	31
G38		49			49	49	49
G39		35			35	35	35
G40		100			100	100	100
MW106		170			170	170	170
P1		51			51	51	51
P3R		160			160	160	160
P4R		5			5	5	5

Nitrate, Nitrogen mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		0.05			0.05	0.05	0.05
G109		0.29			0.29	0.29	0.29
G109A		2.6			2.6	2.6	2.6
G113		0.3			0.3	0.3	0.3
G113A		0.05			0.05	0.05	0.05
G114		0.05			0.05	0.05	0.05
G115		0.05			0.05	0.05	0.05
G116A		8.2			8.2	8.2	8.2
G116D		2.3			2.3	2.3	2.3
G117		1.7			1.7	1.7	1.7
G118A		11			11	11	11
G118R		6.4			6.4	6.4	6.4
G119		13			13	13	13
G120B		4.6			4.6	4.6	4.6
G130		9.4			9.4	9.4	9.4
G132		6.9			6.9	6.9	6.9
G33D		1.6			1.6	1.6	1.6
G33S		7.6			7.6	7.6	7.6
G34D		6.9			6.9	6.9	6.9
G34S		1.6			1.6	1.6	1.6
G35D		0.2			0.2	0.2	0.2
G35S		3.6			3.6	3.6	3.6
G36		11			11	11	11
G37D		8.9			8.9	8.9	8.9
G37S		3.9			3.9	3.9	3.9
G38		8.9			8.9	8.9	8.9
G39		0.21			0.21	0.21	0.21
G40		1.2			1.2	1.2	1.2
MW106		0.05			0.05	0.05	0.05
P1		0.05			0.05	0.05	0.05
P3R		0.078			0.078	0.078	0.078
P4R		9.5			9.5	9.5	9.5

Oil (Hexane soluble or equiv) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5.3			5.3	5.3	5.3
G109A		5.3			5.3	5.3	5.3
G113		5.3			5.3	5.3	5.3
G113A		5.4			5.4	5.4	5.4
G114		5.3			5.3	5.3	5.3
G115		5			5	5	5
G116A		5.2			5.2	5.2	5.2
G116D		5			5	5	5
G117		5			5	5	5
G118A		5.4			5.4	5.4	5.4
G118R		5.3			5.3	5.3	5.3
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5.3			5.3	5.3	5.3
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5.2			5.2	5.2	5.2
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5.2			5.2	5.2	5.2
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

p-Cresol ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1

G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Parathion **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1

G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1016 **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1

P4R		1			1	1	1

PCB-1221 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1232 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1

G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1242 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1

G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1248 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1

P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1254 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

PCB-1260 ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1

G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1.1			1.1	1.1	1.1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.1			1.1	1.1	1.1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1.1			1.1	1.1	1.1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Pentachlorophenol ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		26			26	26	26
G109		26			26	26	26
G109A		26			26	26	26
G113		26			26	26	26
G113A		27			27	27	27
G114		26			26	26	26
G116A		26			26	26	26
G116D		26			26	26	26
G117		26			26	26	26
G118A		26			26	26	26
G118R		26			26	26	26
G119		25			25	25	25
G120B		26			26	26	26
G130		25			25	25	25
G132		26			26	26	26
G33D		25			25	25	25

G33S		26			26	26	26
G34D		26			26	26	26
G34S		26			26	26	26
G35D		26			26	26	26
G35S		26			26	26	26
G36		25			25	25	25
G37D		26			26	26	26
G37S		26			26	26	26
G38		26			26	26	26
G39		25			25	25	25
G40		25			25	25	25
MW106		27			27	27	27
P1		26			26	26	26
P3R		28			28	28	28
P4R		25			25	25	25

Potassium **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		56			56	56	56
G109		0.94			0.94	0.94	0.94
G109A		0.89			0.89	0.89	0.89
G113		5.3			5.3	5.3	5.3
G113A		11			11	11	11
G114		2.2			2.2	2.2	2.2
G115		18			18	18	18
G116A		5.1			5.1	5.1	5.1
G116D		1.3			1.3	1.3	1.3
G117		6.4			6.4	6.4	6.4
G118A		3			3	3	3
G118R		15			15	15	15
G119		23			23	23	23
G120B		1.6			1.6	1.6	1.6
G130		11			11	11	11
G132		1.9			1.9	1.9	1.9
G33D		2.2			2.2	2.2	2.2
G33S		9.7			9.7	9.7	9.7
G34D		1.9			1.9	1.9	1.9
G34S		17			17	17	17
G35D		100			100	100	100
G35S		24			24	24	24
G36		1.4			1.4	1.4	1.4
G37D		6.7			6.7	6.7	6.7
G37S		12			12	12	12
G38		37			37	37	37
G39		5.6			5.6	5.6	5.6
G40		30			30	30	30

MW106		100			100	100	100
P1		62			62	62	62
P3R		23			23	23	23
P4R		3.9			3.9	3.9	3.9

sec-Butylbenzene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Selenium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		6			6	6	6
G109		3			3	3	3
G109A		3			3	3	3
G113		3			3	3	3

G113A		3			3	3	3
G114		6			6	6	6
G115		3			3	3	3
G116A		3			3	3	3
G116D		3			3	3	3
G117		3			3	3	3
G118A		6			6	6	6
G118R		6			6	6	6
G119		3			3	3	3
G120B		6			6	6	6
G130		3			3	3	3
G132		6			6	6	6
G33D		3			3	3	3
G33S		3			3	3	3
G34D		3			3	3	3
G34S		3			3	3	3
G35D		3			3	3	3
G35S		3			3	3	3
G36		3			3	3	3
G37D		3			3	3	3
G37S		3			3	3	3
G38		3			3	3	3
G39		6			6	6	6
G40		6			6	6	6
MW106		6			6	6	6
P1		6			6	6	6
P3R		6			6	6	6
P4R		6			6	6	6

Silver **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5

G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Sodium **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		170			170	170	170
G109		10			10	10	10
G109A		57			57	57	57
G113		33			33	33	33
G113A		45			45	45	45
G114		12			12	12	12
G115		72			72	72	72
G116A		14			14	14	14
G116D		4.9			4.9	4.9	4.9
G117		30			30	30	30
G118A		8.6			8.6	8.6	8.6
G118R		41			41	41	41
G119		5.3			5.3	5.3	5.3
G120B		8.1			8.1	8.1	8.1
G130		13			13	13	13
G132		6.6			6.6	6.6	6.6
G33D		7.3			7.3	7.3	7.3
G33S		7.2			7.2	7.2	7.2
G34D		6.1			6.1	6.1	6.1
G34S		48			48	48	48
G35D		18			18	18	18
G35S		20			20	20	20
G36		11			11	11	11
G37D		9.8			9.8	9.8	9.8
G37S		6.1			6.1	6.1	6.1
G38		83			83	83	83

G39		45			45	45	45
G40		63			63	63	63
MW106		280			280	280	280
P1		150			150	150	150
P3R		43			43	43	43
P4R		12			12	12	12

Styrene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Sulfate mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		28			28	28	28
G109		12	34	13	12	34	19.666666667

G109A		24	15	18	15	24	19
G113		13	24	18	13	24	18.333333333
G113A		29	29	23	23	29	27
G114		30			30	30	30
G115		33			33	33	33
G116A		27			27	27	27
G116D		30			30	30	30
G117		44			44	44	44
G118A		2			2	2	2
G118R		30			30	30	30
G119		9.5			9.5	9.5	9.5
G120B		29	26	15	15	29	23.333333333
G130		29			29	29	29
G132		9.4			9.4	9.4	9.4
G33D		63			63	63	63
G33S		32			32	32	32
G34D		24			24	24	24
G34S		25			25	25	25
G35D		8.3			8.3	8.3	8.3
G35S		28			28	28	28
G36		27			27	27	27
G37D		25			25	25	25
G37S		25			25	25	25
G38		25			25	25	25
G39		11			11	11	11
G40		25			25	25	25
MW106		7.9			7.9	7.9	7.9
P1		24			24	24	24
P3R		27			27	27	27
P4R		30			30	30	30

tert-butylbenzene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1

G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Tetrachloroethene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1.2			1.2	1.2	1.2
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		5			5	5	5
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		2.2			2.2	2.2	2.2
G130		1			1	1	1
G132		8.1			8.1	8.1	8.1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.9			1.9	1.9	1.9
G35D		1			1	1	1
G35S		4.5			4.5	4.5	4.5
G36		1			1	1	1
G37D		1.3			1.3	1.3	1.3

G37S		1			1	1	1
G38		1.4			1.4	1.4	1.4
G39		1.6			1.6	1.6	1.6
G40		1.5			1.5	1.5	1.5
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		11			11	11	11

Tetrahydrofuran ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		34			34	34	34
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		16			16	16	16
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		18			18	18	18
G39		5			5	5	5
G40		5			5	5	5
MW106		48			48	48	48
P1		22			22	22	22
P3R		5			5	5	5
P4R		5			5	5	5

Thallium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average

B15R		62			62	62	62
G109		10			10	10	10
G109A		10			10	10	10
G113		10			10	10	10
G113A		10			10	10	10
G114		10			10	10	10
G115		10			10	10	10
G116A		10			10	10	10
G116D		10			10	10	10
G117		10			10	10	10
G118A		10			10	10	10
G118R		10			10	10	10
G119		10			10	10	10
G120B		10			10	10	10
G130		10			10	10	10
G132		10			10	10	10
G33D		10			10	10	10
G33S		10			10	10	10
G34D		10			10	10	10
G34S		10			10	10	10
G35D		10			10	10	10
G35S		10			10	10	10
G36		10			10	10	10
G37D		10			10	10	10
G37S		10			10	10	10
G38		10			10	10	10
G39		10			10	10	10
G40		10			10	10	10
MW106		10			10	10	10
P1		10			10	10	10
P3R		10			10	10	10
P4R		10			10	10	10

Toluene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1

G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

Total Organic Carbon (TOC) mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		22			22	22	22
G109		1.7			1.7	1.7	1.7
G109A		1.4			1.4	1.4	1.4
G113		2.3			2.3	2.3	2.3
G113A		3.4			3.4	3.4	3.4
G114		4.3			4.3	4.3	4.3
G115		1.3			1.3	1.3	1.3
G116A		1.4			1.4	1.4	1.4
G116D		1			1	1	1
G117		4.1			4.1	4.1	4.1
G118A		3.7			3.7	3.7	3.7
G118R		11			11	11	11
G119		1.1			1.1	1.1	1.1
G120B		1			1	1	1
G130		1.6			1.6	1.6	1.6
G132		1			1	1	1
G33D		22			22	22	22
G33S		1			1	1	1
G34D		1			1	1	1
G34S		4.7			4.7	4.7	4.7
G35D		61			61	61	61
G35S		1.4			1.4	1.4	1.4

G36		1			1	1	1
G37D		1			1	1	1
G37S		4.3			4.3	4.3	4.3
G38		1			1	1	1
G39		3			3	3	3
G40		3.7			3.7	3.7	3.7
MW106		1			1	1	1
P1		29			29	29	29
P3R		3.9			3.9	3.9	3.9
P4R		1			1	1	1

Toxaphene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2.5			2.5	2.5	2.5
G109		2.5			2.5	2.5	2.5
G109A		2.5			2.5	2.5	2.5
G113		2.5			2.5	2.5	2.5
G113A		2.5			2.5	2.5	2.5
G114		2.5			2.5	2.5	2.5
G115		2.5			2.5	2.5	2.5
G116A		2.5			2.5	2.5	2.5
G116D		2.5			2.5	2.5	2.5
G117		2.5			2.5	2.5	2.5
G118A		2.5			2.5	2.5	2.5
G118R		2.5			2.5	2.5	2.5
G119		2.5			2.5	2.5	2.5
G120B		2.5			2.5	2.5	2.5
G130		2.5			2.5	2.5	2.5
G132		2.5			2.5	2.5	2.5
G33D		2.5			2.5	2.5	2.5
G33S		2.5			2.5	2.5	2.5
G34D		2.5			2.5	2.5	2.5
G34S		2.5			2.5	2.5	2.5
G35D		2.5			2.5	2.5	2.5
G35S		2.5			2.5	2.5	2.5
G36		2.5			2.5	2.5	2.5
G37D		2.5			2.5	2.5	2.5
G37S		2.5			2.5	2.5	2.5
G38		2.5			2.5	2.5	2.5
G39		2.5			2.5	2.5	2.5
G40		2.5			2.5	2.5	2.5
MW106		2.5			2.5	2.5	2.5
P1		2.5			2.5	2.5	2.5
P3R		2.5			2.5	2.5	2.5
P4R		2.5			2.5	2.5	2.5

trans-1,2-Dichloroethene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

trans-1,3-Dichloropropene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1			1	1	1
G113		1			1	1	1
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		1			1	1	1

G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		1			1	1	1
G130		1			1	1	1
G132		1			1	1	1
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1			1	1	1
G35D		1			1	1	1
G35S		1			1	1	1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1			1	1	1
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1
P3R		1			1	1	1
P4R		1			1	1	1

trans-1,4-Dichloro-2-butene ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5
G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5

G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Trichloroethene **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		1			1	1	1
G109		1			1	1	1
G109A		1.9			1.9	1.9	1.9
G113		2.4			2.4	2.4	2.4
G113A		1			1	1	1
G114		1			1	1	1
G115		1			1	1	1
G116A		2			2	2	2
G116D		1			1	1	1
G117		1			1	1	1
G118A		1			1	1	1
G118R		1			1	1	1
G119		1			1	1	1
G120B		3			3	3	3
G130		1			1	1	1
G132		4.3			4.3	4.3	4.3
G33D		1			1	1	1
G33S		1			1	1	1
G34D		1			1	1	1
G34S		1.3			1.3	1.3	1.3
G35D		1			1	1	1
G35S		2.1			2.1	2.1	2.1
G36		1			1	1	1
G37D		1			1	1	1
G37S		1			1	1	1
G38		1			1	1	1
G39		1.6			1.6	1.6	1.6
G40		1			1	1	1
MW106		1			1	1	1
P1		1			1	1	1

P3R		1			1	1	1
P4R		4.8			4.8	4.8	4.8

Vanadium mg/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		22			22	22	22
G109		5			5	5	5
G109A		6.9			6.9	6.9	6.9
G113		5			5	5	5
G113A		13			13	13	13
G114		5			5	5	5
G115		260			260	260	260
G116A		5			5	5	5
G116D		5			5	5	5
G117		20			20	20	20
G118A		5			5	5	5
G118R		48			48	48	48
G119		190			190	190	190
G120B		5			5	5	5
G130		120			120	120	120
G132		5			5	5	5
G33D		10			10	10	10
G33S		110			110	110	110
G34D		5			5	5	5
G34S		28			28	28	28
G35D		5.1			5.1	5.1	5.1
G35S		270			270	270	270
G36		5			5	5	5
G37D		18			18	18	18
G37S		44			44	44	44
G38		16			16	16	16
G39		5			5	5	5
G40		120			120	120	120
MW106		5			5	5	5
P1		5			5	5	5
P3R		100			100	100	100
P4R		5			5	5	5

Vinyl acetate ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		5			5	5	5
G109		5			5	5	5
G109A		5			5	5	5
G113		5			5	5	5
G113A		5			5	5	5
G114		5			5	5	5

G115		5			5	5	5
G116A		5			5	5	5
G116D		5			5	5	5
G117		5			5	5	5
G118A		5			5	5	5
G118R		5			5	5	5
G119		5			5	5	5
G120B		5			5	5	5
G130		5			5	5	5
G132		5			5	5	5
G33D		5			5	5	5
G33S		5			5	5	5
G34D		5			5	5	5
G34S		5			5	5	5
G35D		5			5	5	5
G35S		5			5	5	5
G36		5			5	5	5
G37D		5			5	5	5
G37S		5			5	5	5
G38		5			5	5	5
G39		5			5	5	5
G40		5			5	5	5
MW106		5			5	5	5
P1		5			5	5	5
P3R		5			5	5	5
P4R		5			5	5	5

Vinyl chloride **ug/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		2			2	2	2
G109		2			2	2	2
G109A		2			2	2	2
G113		2			2	2	2
G113A		2			2	2	2
G114		2			2	2	2
G115		2			2	2	2
G116A		2			2	2	2
G116D		2			2	2	2
G117		2			2	2	2
G118A		2			2	2	2
G118R		2			2	2	2
G119		2			2	2	2
G120B		2			2	2	2
G130		2			2	2	2
G132		2			2	2	2
G33D		2			2	2	2

G33S		2			2	2	2
G34D		2			2	2	2
G34S		2			2	2	2
G35D		2			2	2	2
G35S		2			2	2	2
G36		2			2	2	2
G37D		2			2	2	2
G37S		2			2	2	2
G38		2			2	2	2
G39		2			2	2	2
G40		2			2	2	2
MW106		2			2	2	2
P1		2			2	2	2
P3R		2			2	2	2
P4R		2			2	2	2

Xylenes (total) ug/l

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		3			3	3	3
G109		3			3	3	3
G109A		3			3	3	3
G113		3			3	3	3
G113A		3			3	3	3
G114		3			3	3	3
G115		3			3	3	3
G116A		3			3	3	3
G116D		3			3	3	3
G117		3			3	3	3
G118A		3			3	3	3
G118R		3			3	3	3
G119		3			3	3	3
G120B		3			3	3	3
G130		3			3	3	3
G132		3			3	3	3
G33D		3			3	3	3
G33S		3			3	3	3
G34D		3			3	3	3
G34S		3			3	3	3
G35D		3			3	3	3
G35S		3			3	3	3
G36		3			3	3	3
G37D		3			3	3	3
G37S		3			3	3	3
G38		3			3	3	3
G39		3			3	3	3
G40		3			3	3	3

MW106		3			3	3	3
P1		3			3	3	3
P3R		3			3	3	3
P4R		3			3	3	3

Zinc **mg/l**

WELL ID	Jan 99	Apr 99	July 99	Nov 99	Minimum	Maximum	Average
B15R		8900			8900	8900	8900
G109		3100			3100	3100	3100
G113		130			130	130	130
G113A		2300			2300	2300	2300
G114		1100			1100	1100	1100
G115		460			460	460	460
G116A		20			20	20	20
G116D		20			20	20	20
G117		340			340	340	340
G118A		20			20	20	20
G118R		170			170	170	170
G119		390			390	390	390
G120B		20			20	20	20
G130		180			180	180	180
G132		20			20	20	20
G33D		39			39	39	39
G33S		240			240	240	240
G34D		20			20	20	20
G34S		150			150	150	150
G35D		21			21	21	21
G35S		440			440	440	440
G36		20			20	20	20
G37D		53			53	53	53
G37S		100			100	100	100
G38		56			56	56	56
G39		130			130	130	130
G40		290			290	290	290
MW106		10000			10000	10000	10000
P1		50			50	50	50
P3R		370			370	370	370
P4R		20			20	20	20

APPENDIX E

TINMASS

1 INTRODUCTION

TinMass is a MapInfo application that runs with SiteGIS. TinMass can be used to calculate the mass of a dissolved constituent in groundwater based on the water quality data entered into SiteGIS format. Input data for TinMass include the following parameters at each sample location: (1) aquifer or interval thickness; (2) concentration of the constituent or chemical; and (3) porosity. Coordinates of each sample are taken directly from the MapInfo® object representing the sample location.

The underlying computational procedures used in TinMass are based on its predecessor, MASSCALC. MASSCALC was developed to evaluate pump-and-treat technology and is described in the U.S. EPA document "Methods for Monitoring Pump-and-Treat Performance" (USEPA, 1994), pages 49-51. The technique is briefly discussed below.

2 COMPUTATIONAL TECHNIQUE

A triangulated irregular network (TIN) is used as an interpolation technique for estimating mass-in-place of the dissolved contaminant. It is a simple numerical integration approach commonly used to estimate volumes in civil engineering applications. In the first step, an optimum network of triangles connecting all sample locations is generated using the Dulauney Triangulation procedure. Dulauney Triangulation connects points to form a network of triangles they have as nearly equal angles at their vertices as possible. The procedure was based on an algorithm described by Watson (1982).

In the second step, an estimate of the mass of dissolved contaminant within each triangle is determined based on the assumption that concentration (C), porosity (n), and aquifer/interval thickness (b) vary linearly between the sample locations. The dissolved mass within the aquifer bounded areally by each triangle is determined by:

$$\int_{area} nCb \; dxdy \qquad \text{(A-1)}$$

where n, C, and b vary linearly across the triangle. Further details on the interpolation and integration may be found in Istok (1984), pages 90-91. The total mass of dissolved contaminants is calculated by summing the contaminant mass from each triangle.

The accuracy of the mass-calculation procedure depends upon the adequacy of the well network to define the extent and degree of contamination. Because concentrations typically decrease in an exponential manner away from the source, the linear interpolation used in this procedure has a tendency to overestimate mass-in-place. Overestimation is a concern when the monitoring network is limited to few wells. The procedure estimates mass-in-place of a contaminant in a single aquifer or vertical interval of an aquifer. In order to estimate mass-in-place in three dimensions, it is necessary to estimate mass-in-place for separate layers (monitoring depth zones) and sum the results. For monitoring well clusters, which monitor different depths, the concentration data from individual wells should not be combined into a single data set for plumes in which concentration varies with depth.

3 ENHANCEMENTS MADE IN TINMASS

The enhancements made in TinMass which distinguish it from its predecessor, MASSCALC include: (1) data for the input parameters are stored in GIS tables in MapInfo; (2) coordinates of each sample are taken directly from the MapInfo object representing the sample location; (3) the calculated mass may be output in units of lb or Kg directly; (4) the TIN network is created as a MapInfo table by TinMass; and (5) statistics of the results (input data fields or values entered, number of nodes, TIN triangles generated, and total mass) are stored in another MapInfo summary table indexed by a Run ID. The Run ID may be used as an identifier of the contaminant and the sampling period. Thus, results from multiple periods and different chemicals may be summarized in one summary table. This approach is useful in determining the mass-in-place trends over time.