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December 21, 2000

WALS 993-2632
33628

Mr. Greg Mathes
Trail Ridge Landfill, Inc.
5110 U.S. Highway 301, South
Jacksonville, Florida 32234

RE: BIENNIAL EVALUATION OF GROUNDWATER, SURFACE WATER, AND
LEACHATE MONITORING PROGRAM (1999-2000)
TRAIL RIDGE LANDFILL
JACKSONVILLE, FLORIDA

Dear Mr. Mathes:

In accordance with Specific Condition Number 41(v). of the Trail Ridge Landfill (TRLF) operating permit, Golder Associates Inc. (Golder) has prepared this report to document our review of the historical groundwater, surface water, and leachate data and present our recommendations regarding the adequacy of the existing monitoring program for the TRLF located in Jacksonville, Florida. In brief, it is our recommendation that the following be considered for the monitoring system:

1. Replacement of monitoring well MWB-11I. As documented in previous semi-annual monitoring reports to FDEP, monitoring well MWB-11I has produced samples with consistently high turbidity levels, due most likely to the presence of a silty clay seam at a depth of approximately 55 to 56 feet below ground surface (bgs) that intersects the screened interval of the well. Attempts to redevelop the well have not been successful. In order to reduce the potential for the replacement well encountering the same problem, it is recommended that its screened interval be set entirely above the silty clay seam (i.e., screen well from 44 to 54 feet bgs).
2. Begin a program of redeveloping select wells that are showing elevated turbidity measurements. If the redevelopment proves successful it should be expanded to all wells that are producing turbid samples.

INTRODUCTION

The purpose of this report is to summarize and interpret the groundwater, surface water, and leachate quality data collected during the semi-annual sampling events that took place in 1999 and 2000 at the TRLF. The data reviewed for this biennial assessment was obtained during the routine semi-annual monitoring events that took place in April 1999, October 1999, January 2000, and October 2000. This report contains the data interpretation criteria specified in the Florida Administrative Code (FAC), Chapter 62-701 and in accordance with the site's operating permit (Number 0013493-002-SC), Specific Condition Number 41(v). The report includes:

- 1) Tables and graphs of the water quality data.
- 2) A comparison of water quality results between upgradient and downgradient wells and surface water points, a trend analysis of any parameters detected, and a summary of all exceedances of applicable water standards.
- 3) A comparison of shallow, intermediate, and deep zone wells.
- 4) A discussion of erratic and /or poorly correlated data.
- 5) An interpretation of the groundwater contour maps, including an evaluation of groundwater flow rates.
- 6) An evaluation of the adequacy of the water quality monitoring frequency and sample locations based upon site conditions.
- 7) A summary of the physical condition of the monitoring system based on visual observation and sampling records.

These criteria are addressed in interpreting the data from each of the groundwater monitoring wells, surface water sample points, and leachate samples collected at TRLF.

BACKGROUND

In preparing this report we have reviewed information which was provided either by Columbia Analytical Services, Inc. or Trail Ridge Landfill, Inc. and included:

- Groundwater, Surface Water, and Leachate Data from 1999 to 2000
- Biennial Water Quality Data Report (1997-1998), Trail Ridge Landfill, Inc., January 1999
- Evaluation of Historical Data and Recommendations for Groundwater, Surface Water and Leachate Monitoring, Golder Associates Inc., October 1996
- Semiannual Groundwater, Surface Water and Leachate Monitoring results, Trail Ridge Landfill Inc., April 1998

EXISTING MONITORING PROGRAM

Regulatory Requirements

In accordance with the permitting and monitoring requirements of Chapter 62-522.300, FAC, an installation discharging to groundwater may not cause a violation of the applicable water quality standards in the receiving groundwater at or beyond the prescribed zone of discharge (ZOD), as established by permit or rule. The allowable ZOD for Trail Ridge Landfill (TRLF) is defined in Specific Condition 41 of the site's operating permit. Specific Condition 41 states that the horizontal ZOD shall be limited to 100 feet from the water management area; or to the property

boundary; or to the shortest distance between the locations of the compliance monitoring wells and the waste management area; whichever is less.

Pursuant to water quality standards established by 62-520.420, FAC, and by Specific Condition 41 of the site permit, the reported groundwater and surface water data for TRLF is compared to the Florida Primary Drinking Water Standards (PDWS) and Secondary Drinking Water Standards (SDWS) as listed in Chapter 62-550, Florida Administrative Code (FAC). Concentrations above the applicable water standards have been noted in the semi-annual reports submitted to the FDEP in accordance with Specific Condition 41 of the permit.

Site Specific Program

This biennial groundwater quality assessment is designed to interpret two years of data, by comparing the data collected to background conditions, identifying when and where analytes have exceeded allowable standards, determining trends, discussing erratic data, and evaluating the adequacy of the monitoring program.

The monitoring parameters from each sample point were evaluated qualitatively and compared to background groundwater conditions. Analytes that have exceeded the applicable Florida Drinking Water Standards are discussed. Groundwater parameters with concentrations above laboratory detection limits are included in Table 1, surface water data in Table 2, and leachate data in Table 3.

Groundwater

The groundwater monitoring wells sampled routinely (on a semi-annual basis) during 1999 and 2000 were as follows:

Location	Wells
Background	MWB-2S, MWB-2I MWB-3S, MWB-3I MWB-3ID
Phase I	MWB-7S, MWB-7I, MWB-7D MWB-11S, MWB-11I MWB-12S, MWB-12I, MWB-12D MWB-19S, MWB-19I, MWB-19D MWB-20S MWB-21S MWB-22S
Phase II	MWB-17S, MWB-17I, MWB-17D
Phase III	MWB-13S, MWB-13I
Phase V	MWB-27S, MWB-27I, MWB-27D MWB-29S, MWB-29I, MWB-29D

There are a total of 25 compliance and detection wells and 5 background wells on site that are sampled (see Figure 1). The monitoring wells are installed around the perimeter of the landfill and are screened in three zones within the Surficial Aquifer (Shallow, Intermediate and Deep zones). By zone, there are 13 shallow wells, 10 intermediate wells, and 7 deep wells. The monitoring wells are sampled and analyzed semi-annually for the parameters listed in Appendix

A. Samples are collected using dedicated bladder pumps (WellWizard®) after at least three well volumes are removed¹ and the pH, specific conductivity, and temperature readings have stabilized. The groundwater parameters include field measurements, inorganic indicator parameters, trace metals, and volatile organic compounds (VOCs). The sampling and analysis procedures are in conformance with Chapter 62-160 FAC and Chapter 62-522 FAC.

Surface Water

Surface water flow at the site mimics the topography, with runoff in a predominantly eastward direction and drainage features trending west-east. There are two surface water monitoring sites (designated SW-1 and SW-2). Monitoring location SW-1 is located in a wetland, approximately 200 feet east of the landfill's stormwater retention pond. Monitoring location SW-2 is located in a west-east trending drainage feature, approximately 500 feet north of the landfill. SW-2 is considered a background sampling location, since it does not receive run-off directly from the landfill area. In accordance with Chapter 62-701 FAC, surface water monitoring is required on a semi-annual basis in conjunction with the groundwater monitoring schedule. Surface water sampling parameters are listed in Appendix A.

Leachate

The landfill leachate is sampled and analyzed semi-annually in conjunction with the groundwater and surface water sampling. Leachate collection pipes that lie on top of the primary liner terminate at the leachate collection sumps. These sumps also collect any leachate flowing along the secondary leak detection system. The sump is designed so that the leachate from the primary and secondary systems is separated. Therefore, it is necessary to have two pumps in each sump; one for the primary leachate collection system and one for the secondary leachate collection system.

The leachate is pumped from the sumps through primary and secondary force mains to six 20,000-gallon storage tanks. Tanks 1 through 5 (interconnected) receive the leachate collected from all of the primary leachate collection sumps via one force main. Tank 6 receives leachate that is pumped through a separate force main from the secondary leachate collection sumps. Previous sampling procedures required sampling of all six tanks. However, since tanks 1 through 5 contain the same leachate, sampling procedures were reduced to the collection of two (2) samples (one for the secondary leachate collection tank and one composite sample from each of the five primary leachate collection tanks). The leachate samples collected are analyzed for a list of parameters consisting of metals, inorganics, VOCs, and indicator parameters (see Appendix A).

EVALUATION OF HISTORICAL DATA

Hydraulic Evaluation

For the evaluation of hydraulics, Golder reviewed the groundwater contour maps dating between 1999 to 2000, which have been provided to the FDEP in semi-annual reports. The contour maps reviewed included separate maps for the shallow, intermediate and deep hydrogeologic zones (see

¹ It is noted that many of the monitoring wells are equipped with packers (PurgeMizers®) that prior to purging are inflated, thus effectively isolating the screened interval and reducing the overall well volume that is required to be purged.

Appendix B). This review process included examining the average gradient across the site, and on a well-by-well basis, determining groundwater flow direction at each of the wells that are located around the perimeter of the landfill and routinely monitored.

The average horizontal gradient across the site indicates that groundwater flow in the three zones are very similar, with the deep zone, on average, having a slightly flatter gradient than the intermediate and shallow zones. It is noted that this observation may at least partially be a result of having fewer data points for the deep zone, resulting in larger interpolations between data points than in the shallow zone. Also, it is noted that there were some periods when the gradients in the deep zone were steeper than in the intermediate zone, and periods when the intermediate zone gradients were steeper than the shallow zone. There were not any obvious seasonal trends in gradient fluctuations.

As noted in previous reports, groundwater flow direction in all three zones is predominantly eastward. Current data reflects little change in flow direction in any of the three zones.

Groundwater Quality

Table 1 summarizes all 25 groundwater monitoring wells and 5 background wells, considering only those parameters for which recorded concentrations are above the laboratory detection limits. Values of those parameters above primary or secondary drinking water standards have been shaded. The most common exceedance of drinking water standards (in nearly every well) was that for total iron. Although the total iron values are high, no clear trend exists over the 2-year period (See Figure 2). For those locations and events when filtered samples were collected, dissolved iron exceeded the SDWS in only intermediate wells (MWB-19I, MWB-11I, MWB-27I, and MWB-29I) (see Figure 3). However, considering dissolved parameters were analyzed in only two semi-annual events (October 1999 and October 2000), and review of 1997-1998 data also indicates concentrations above the SDWS, there does not appear to be any trends evident.

Values of pH consistently fell below the SDWS minimum of 6.5 standard units (s.u.) in all but two wells. The higher pH values (within the SDWS range) corresponded with the deep zone wells. This difference, as noted in prior semi-annual reports, can likely be explained by the different lithology in the deep zone (carbonate material), which can provide a buffering effect to the passing groundwater. The low pH values corresponding to the shallow wells (and to a lesser extent, the intermediate wells) are consistent with the surrounding soil in this region and can be explained by the local vegetative cover. A slight trend of increasing pH is possibly occurring in the background wells (see Figure 4e). However, a review of 1997-1998 data suggests no significant trend of increasing pH levels over the 4-year period.

During the period of 1999-2000, the SDWS for color was exceeded during one or more sampling events in 12 of 30 wells sampled (see Figure 5). The color exceedances were encountered in 9 of the 13 shallow wells and 3 of the 10 intermediate wells. The groundwater at these locations is commonly tinted brown. As with the low pH, the most likely cause for this condition is tannic acid and humic material in the shallow soils. There is a distinction between shallow and intermediate color values, and there appears to be slight increasing trend in color values in both zones.

Detections of total lead were reported in five wells, but only two (MWB-11I and MWB-2S) showed an exceedance of the PDWS of 0.015 mg/L (see Figure 6). All four sampling events for MWB-11I exceeded the standard, with possibly a slight increasing trend. Other wells showed no

trend. Note that MWB-2S (a background well) had the highest lead concentration reported during the period (0.48 mg/L), however, since no other lead detections were noted prior to, or since, that sample was collected this exceedance is considered to be an erratic value, likely the result of sampling or analytical error.

Both MWB-11I (0.21 mg/L) and MWB-3S (0.6 mg/L) (a background well) had concentrations of chromium above the PDWS (0.1 mg/L). MWB-11I also had consistently high concentrations of beryllium (Figure 7), with one PDWS exceedance in January 2000. As with lead in MWB-2S, chromium was only detected during one sampling event in MWB-3S and as such, is considered to be an erratic value, likely the result of sampling or analytical error.

Vanadium, although not regulated by drinking water standards, exceeded the groundwater target cleanup level (Chapter 62-777 F.A.C., Table I) of 0.049 mg/L in one well (MWB-11I, see Figure 8). All four sampling events for this well exceeded the groundwater target cleanup level; however, there is an apparent decreasing trend in this well and all other wells containing vanadium.

Chloride, cadmium, zinc, dissolved copper and total and dissolved barium all had detections above the reportable limits, but below the drinking water standards. Chloride and barium were present in every well, while the others (cadmium, copper, and zinc) had more sporadic appearances. Zinc and cadmium show a slight decreasing trend, while barium, not present in the first two sampling events, was apparent in almost every well in the last sampling event. Chloride had no clear trend, while dissolved copper and dissolved barium were only sampled for in four wells and on only two of the four sampling events. Accordingly, although an increasing trend is possible, limited data reduces the degree of confidence in this observation.

There were no detections of VOCs in the monitoring wells during 1999-2000 semi-annual sampling events.

Surface Water

Table 2 summarizes the two surface water monitoring locations, considering only those parameters for which recorded concentrations are above the laboratory detection limits. With the exception of pH and iron (See Figures 9 and 10, respectively), all parameters are within the drinking water standards.

Leachate

Table 3 summarizes the semi-annual data for the two leachate samples retrieved from the primary (LCS) and secondary (LDSS) sump storage tanks. Although each leachate sample's analytical result does not correlate well with the other leachate sample, there does appear to be a slight decreasing trend in chromium, cobalt, and zinc for both LCS and LDSS. LCS (see Figure 11) had drinking water standard exceedances in 14 of the 30 parameters above the detectable limits, while LDSS (see Figure 12) had exceedances in 12 of the 30 parameters above the detectable limits. In general, the primary sump tank concentrations were higher than those of the secondary sump tank, particularly for chloride, iron, and total dissolved solids.

CONCLUSIONS AND RECOMMENDATIONS

Groundwater

Background monitoring well data suggests that exceedances of the SDWS for iron, color, and pH are related to the natural groundwater quality conditions of the area. Additionally, sodium and chloride were detected over the laboratory detection limits in background wells and must also be considered as natural groundwater constituents in this area. There is no apparent trend (either increasing or decreasing) with any of the above constituents in the wells, further indicating a relatively stable background groundwater quality condition. It should be noted that background monitoring well MWB-2S and MWB-3S exceeded the drinking water standards for lead and chromium, respectively. Since these exceedances were isolated to one sampling event for each well, it is possible they are the result of a sampling or analytical error.

Noted minor increases in color and pH in many of the groundwater wells over time are not likely indicative of a landfill influence. In terms of pH, increased values are possibly the result of a decreasing influence of local vegetative decay (i.e., lower tannic acid production) resulting from the fact that the site has been essentially cleared of trees for nearly 10 years. As noted above, low pH values (below the SDWS) are consistent with values presented in previous semi-annual reports and are not considered to be a major concern.

In general, there were no significant trends for the analyzed parameters, with the possible exception of barium. Although there were no drinking water exceedances, barium was detected in almost every monitoring well in the latest analysis (October 2000) after being non-detectable in each 1999 analysis for all wells. However, this increasing trend may be the result of changing background conditions, since background well data also suggests an increasing trend for this one parameter (See Table 1). Further, review of 1998 data indicated occasional detectable concentrations for barium, suggesting that a significant increasing trend is not likely occurring.

Monitoring well MWB-11I had the greatest number of exceedances of PDWS (lead, beryllium and chromium) in addition to exceedances of SDWS for pH, color, and iron. It is noted that the beryllium and chromium exceedances were in the January 2000 event but not in the two events prior or the event after. There appears to be a generally increasing trend in the concentrations of these constituents in MWB-11I. However, as noted in the 1997-1998 biennial report, there has been a high degree of field turbidity with the suspended solids contributing to metal exceedances. This trend has continued during the 1999-2000 sampling period. Attempts have been made to redevelop the well; however, high field turbidity, TDS and corresponding metal values continue. A review of the boring log for MWB-11I indicates that there is a thin silty clay layer that intersects the screened interval. This silty clay unit is the most likely source of the suspended sediment, resulting in turbid samples and elevated metal concentrations.

As with previous biennial reports, there were no detections of VOCs.

PDWS Exceedances

The table below summarizes the parameters and associated wells where exceedances of Florida's PDWS have occurred. Considering the regional groundwater quality of the surficial aquifer, exceedances of pH, color, and iron standards (which are SDWS constituents) have been excluded from the table.

Well	April 1999	October 1999	January 2000	October 2000
MWB-11I	Pb	Pb	Pb, Cr, Be	Pb
MWB-2S			Pb	

As noted previously, the detection of metals in MWB-11I is attributed to the continued high turbidity and suspended solids contained in groundwater samples from this well.

Comparisons Between Shallow, Intermediate and Deep Wells

The groundwater wells sampled at TRLF are screened in one of three monitoring zones (shallow, intermediate and deep). The shallow zone is most susceptible to meteorological changes, and as such, shows slightly more variability seasonally. Low pH values in the shallow zone (<5) are consistent with greater influence of tannic acid, as noted previously. The deep zone pH (generally >6) reflects the buffering effect of the carbonate lithology, while the intermediate zone pH is between that of the shallow and the deep. As is apparent in the above summary table, the intermediate zone contained higher concentrations of metals than either the shallow or deep zone (note MWB-11I, -19I, -27I and -29I). Higher metal concentrations generally correspond to higher total dissolved solids values for both the intermediate and deep zones.

Surface Water

The surface water data reviewed indicates that there have not been any significant impacts to surface water quality as a result of the landfill's presence. Chromium, zinc and vanadium were detected over the laboratory detection limit, but did not exceed the drinking water standards (or groundwater target cleanup levels for vanadium). Both fecal coliform and chlorophyll A show a slight increasing trend, but are not considered significant. The notable lead detection in SW-2 in January 2000 (0.44 mg/L) was not present in the latest sampling event for either SW-1 or SW-2. Considering SW-2 is representative of background conditions and SW-1 has not shown detectable levels of lead in any of the four semi-annual events, it is considered likely that the lead detection was either a sampling or analytical error. The drinking water standard exceedance of cobalt in October 1999 for both SW-1 and SW-2 would not likely be associated with background conditions. Since no detections were noted in the other sampling events, it is likely these exceedances were the result of a sampling or analytical error. Other detections seem consistent with local soil conditions (See Table 2).

Leachate

Concentrations for leachate parameters have been relatively consistent throughout each groundwater event. As noted previously, minor decreases in chromium, cobalt, and zinc over time have been noted. It should be noted that, while the permit requires the leachate samples to be analyzed with detection limits at or below groundwater standards, the criteria for evaluating the data are the standards established under 40 CFR Part 261.24. During the 1999-2000 reporting period there were no exceedances of the standards established under 40 CFR Part 261.24.

The January 2000 report of 4,640 mg/L for barium in the LDSS sample is considered an erratic data point. No other detections of barium above 2.6 mg/L were noted before or since, therefore, this reported concentration was likely the result of sampling or analytical error.

Summary of the Physical Condition of the Monitoring System

With the possible exception of MWB-11I, indications are that the monitoring system is working properly. Elevated metal concentrations and turbidity in MWB-11I suggest a continuing suspended solids problem, which is likely the result of the screened interval intersecting a silty clay unit. As many of the wells are now approaching 10 years of age, there are some indications that turbidity and color are slightly increasing at some well locations. To address this condition, it may be prudent to redevelop some of the monitoring wells to attempt to remove accumulated fines (silt and clay) from the well screen and filter pack. These fines are naturally occurring and migrate towards the well as a result of purging during the sampling events.

If you have any questions or comments regarding this report, please call.

Very truly yours,

GOLDER ASSOCIATES INC.

Richard Poff
Staff Hydrogeologist

Kenneth B. Karabiy, P.G.
Senior Project Manager/Associate

Attachments

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TABLES AND FIGURES

TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB19S	pH		6.5-8.5	4.87	4.93	NA	4.79
	Dissolved Oxygen	--	--	0.8	1.2	NA	1.6
	Specific Conductance	--	--	94	94	NA	83
	Color		15	35	15	45	30
	Total Dissolved Solids		500	47	74	64	55
	Chloride		250	8.5	10.2	14.1	1.2
	Iron - Total		0.3	0.1	0.7	ND	ND
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	1.1	0.2	0.205	0.31
	Sodium - Total	160		4.8	5.6	6.16	5.7
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.022	0.035
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB11S	pH		6.5-8.5	4.05	NA	NA	4.35
	Dissolved Oxygen	--	--	0.9	NA	1.2	NA
	Specific Conductance	--	--	139	NA	112	NA
	Color		15	5	5	ND	ND
	Total Dissolved Solids		500	62	68	67	96
	Chloride		250	9.5	9.86	14	8.05
	Iron - Total		0.3	0.4	0.7	0.24	1.4
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		5.3	5	5.1	5
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.33	0.038
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

Notes:

* Except pH and color

ND - Parameter not detected at concentrations above the laboratory detection limit

NS - Not sampled

NA - Not available

Bold - Above laboratory detection limits

Shaded - Above Florida regulated limits for drinking water standards (Primary or Secondary) as under Chapter 62-777 F.A.C.

PMCL - Primary Drinking Water Standards

SMCL - Secondary Drinking Water Standards

TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB12S	pH		6.5-8.5	4.86	5	NA	5.07
	Dissolved Oxygen	--	--	2.6	2.4	NA	2.1
	Specific Conductance	--	--	86	87	NA	116
	Color		15	15	30	35	50
	Total Dissolved Solids		500	60	57	42	51
	Chloride		250	8.6	8.29	12.9	9.14
	Iron - Total		0.3	0.2	0.2	0.14	0.15
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	0.36	0.69	0.44	0.489
	Sodium - Total	160		4.5	4.4	4.56	4.3
	Vanadium - Total	--	--	ND	0.003	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	ND	0.0055
	Dissolved Iron		0.3	ND	NS	NS	NS
	Dissolved Barium	2		ND	NS	NS	NS
	Dissolved Lead	0.015		ND	NS	NS	NS
MWB20S	pH		6.5-8.5	4.11	4.02	NA	4
	Dissolved Oxygen	--	--	2	1.9	NA	1.8
	Specific Conductance	--	--	136	151	NA	186
	Color		15	15	20	5	10
	Total Dissolved Solids		500	46	90	109	97
	Chloride		250	8.3	9.83	16.8	17.7
	Iron - Total		0.3	0.6	0.8	0.77	0.87
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	0.2	0.52	0.51	0.4
	Sodium - Total	160		5	5	8.23	8.6
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	0.05	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.059	0.05
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

Notes:

* Except pH and color

ND - Parameter not detected at concentrations above the laboratory detection limit

NS - Not sampled

NA - Not available

Bold - Above laboratory detection limits

Shaded - Above Florida regulated limits for drinking water standards (Primary or Secondary) as under Chapter 62-777 F.A.C.

PMCL - Primary Drinking Water Standards

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TABLE 1
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BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL (mg/L)	SMCL (mg/L)*	April, 1999 (mg/L)	October, 1999 (mg/L)	January, 2000 (mg/L)	October, 2000 (mg/L)
Phase 1							
MWB22S	pH		6.5-8.5	4.64	4.83	NA	4.91
	Dissolved Oxygen	--	--	1.8	1.6	NA	1.7
	Specific Conductance	--	--	98	95	NA	88
	Color		15	15	25	20	40
	Total Dissolved Solids		500	59	70	62	59
	Chloride		250	9	6.25	13.3	4.96
	Iron - Total		0.3	0.4	0.3	0.27	0.21
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	0.85	0.71	0.65	0.334
	Sodium - Total	160		6.2	5.9	5.46	4.4
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	0.06	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	ND	0.0062
	Dissolved Iron		0.3	NS	NS	ND	NS
	Dissolved Barium	2		NS	NS	ND	NS
	Dissolved Lead	0.015		NS	NS	ND	NS
MWB7S	pH		6.5-8.5	4.62	4.78	NA	4.76
	Dissolved Oxygen	--	--	1.5	2.5	NA	1.1
	Specific Conductance	--	--	88	106	NA	118
	Color		15	25	10	20	25
	Total Dissolved Solids		500	54	59	86	88
	Chloride		250	8.4	10.1	10.4	9.89
	Iron - Total		0.3	0.3	0.3	0.26	0.28
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	1.59	1.07	1.75
	Sodium - Total	160		6.2	6.7	7.06	6.4
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.011	0.0096
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

Notes:

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TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB21S	pH		6.5-8.5	4.66	4.17	NA	4.76
	Dissolved Oxygen	--	--	1.5	1.6	NA	1.3
	Specific Conductance	--	--	60	53	NA	52
	Color		15	NS	15	60	100
	Total Dissolved Solids		500	22	41	18	67
	Chloride		250	5.4	6.3	12.4	6.11
	Iron - Total		0.3	0.7	0.6	0.99	0.66
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	0.05
	Sodium - Total	160		3.8	3.5	4.54	3.5
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.033	0.026
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB19I	pH		6.5-8.5	5.06	5.17	NA	5.13
	Dissolved Oxygen	--	--	1.1	1.4	NA	1.7
	Specific Conductance	--	--	43	44	NA	40
	Color		15	90	40	5	150
	Total Dissolved Solids		500	20	50	46.2	54
	Chloride		250	5	6.04	10.1	5.8
	Iron - Total		0.3	0.9	0.9	ND	0.34
	Lead - Total	0.015		ND	0.002	0.00345	ND
	Chromium - Total	0.1		0.006	0.008	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		4.1	3.6	4.11	3.2
	Vanadium - Total	--	--	0.012	0.012	ND	ND
	Cadmium - Total	0.005		0.0016	0.0015	ND	ND
	Barium - Total	2		ND	ND	0.12	0.041
	Dissolved Sodium	160		NS	3.4	NS	3.2
	Dissolved Iron		0.3	NS	0.3	NS	0.34
	Dissolved Copper		1	NS	ND	NS	0.0056
	Dissolved Barium	2		NS	ND	NS	0.041
	Dissolved Lead	0.015		NS	ND	NS	ND

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TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB111	pH		6.5-8.5	5.22	NA	NA	5.33
	Dissolved Oxygen	--	--	0.8	NA	NA	1.3
	Specific Conductance	--	--	42	NA	NA	45
	Color		15	15	10	ND	500
	Total Dissolved Solids		500	100	91	119	462
	Chloride		250	4.7	5.62	9.1	12.3
	Iron - Total		0.3	0.9	1.7	6.13	6.3
	Lead - Total	0.015		0.03	0.023	0.106	0.076
	Chromium - Total	0.1		0.1	0.086	0.21	0.042
	Nitrogen as Ammonia	--	--	ND	ND	ND	0.042
	Sodium - Total	160		3.3	3.3	3.56	3.1
	Vanadium - Total	--	--	0.11	0.114	0.24	0.049
	Zinc - Total		5	ND	0.06	ND	ND
	Beryllium - Total	0.004		0.0027	0.0029	0.004	0.0019
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.92	0.45
	Dissolved Sodium	160		NS	3	NS	2.9
	Dissolved Iron		0.3	NS	0.3	NS	0.5
	Dissolved Barium	2		NS	ND	NS	0.043
	Dissolved Lead	0.015		NS	ND	NS	ND
MWB121	pH		6.5-8.5	5.34	5.51	NA	5.16
	Dissolved Oxygen	--	--	1	1.1	NA	1
	Specific Conductance	--	--	47	46	NA	53
	Color		15	ND	ND	5	5
	Total Dissolved Solids		500	42	50	36	37
	Chloride		250	4.9	5.56	6.08	5.3
	Iron - Total		0.3	0.4	0.4	0.43	0.42
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.6	3.7	7.75	3.4
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.056	0.05
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

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SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB71	pH		6.5-8.5	5.31	5.17	NA	5.24
	Dissolved Oxygen	--	--	1.2	1.4	NA	1.1
	Specific Conductance	--	--	48	51	NA	52
	Color		15	10	ND	5	ND
	Total Dissolved Solids		500	34	46	62	67
	Chloride		250	5.1	5.62	9.68	5.75
	Iron - Total		0.3	0.3	0.6	0.38	0.43
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.5	3.4	3.61	3.3
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	0.05	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.064	0.057
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB19D	pH		6.5-8.5	7.36	7.1	NA	6.72
	Dissolved Oxygen	--	--	1.1	1.2	NA	1.2
	Specific Conductance	--	--	343	348	NA	325
	Color		15	ND	5	5	10
	Total Dissolved Solids		500	190	220	192	212
	Chloride		250	3.4	4.61	4.18	4.54
	Iron - Total		0.3	0.9	1.6	ND	1.4
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	0.005	ND	ND
	Nitrogen as Ammonia	--	--	0.12	0.14	ND	ND
	Sodium - Total	160		5.2	4.7	5.27	4.9
	Vanadium - Total	--	--	ND	0.006	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.11	0.099
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

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TABLE 1

SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 1		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB12D	pH		6.5-8.5	7.33	6.86	NA	6.47
	Dissolved Oxygen	--	--	1	0.9	NA	1.1
	Specific Conductance	--	--	390	362	NA	408
	Color		15	10	10	5	10
	Total Dissolved Solids		500	210	250	215	213
	Chloride		250	3.9	4.35	7.67	4.28
	Iron - Total		0.3	0.9	0.8	1.74	0.95
	Lead - Total	0.015		0.003	0.003	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	0.18	0.25	0.198
	Sodium - Total	160		6.3	5.8	6.23	5.9
	Vanadium	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.12	0.12
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB7D	pH		6.5-8.5	7.54	7.03	NA	6.89
	Dissolved Oxygen	--	--	1.4	0.8	NA	1.8
	Specific Conductance	--	--	351	361	NA	339
	Color		15	10	5	10	10
	Total Dissolved Solids		500	190	200	208	212
	Chloride		250	3.8	4.34	7.65	4.34
	Iron - Total		0.3	0.2	0.3	0.29	0.31
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	0.17	ND	0.13
	Sodium - Total	160		4.6	4.6	4.98	4.7
	Vanadium	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.88	0.081
	Dissolved Iron		0.3	NS	NS	ND	NS
	Dissolved Barium	2		NS	NS	ND	NS
	Dissolved Lead	0.015		NS	NS	ND	NS

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BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 2		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB17S	pH		6.5-8.5	4.69	4.91	NA	5.27
	Dissolved Oxygen	--	--	1.4	1.4	NA	1.8
	Specific Conductance	--	--	85	74	NA	102
	Color		15	20	30	60	50
	Total Dissolved Solids		500	24	42	61	67
	Chloride		250	9.2	9.05	13.9	11.9
	Iron - Total		0.3	0.5	0.2	ND	0.21
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	0.48	0.89	0.313	0.72
	Sodium - Total	160		6.8	5.6	5.83	7.2
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	0.11	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	ND	0.0066
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB17I	pH		6.5-8.5	4.78	4.93	NA	4.98
	Dissolved Oxygen	--	--	1.4	1.6	NA	2
	Specific Conductance	--	--	39	38	NA	42
	Color		15	5	5	ND	ND
	Total Dissolved Solids		500	11	27	22	42
	Chloride		250	7.9	5.64	5.26	5.33
	Iron - Total		0.3	0.3	0.3	ND	0.37
	Lead - Total	0.015		ND	ND	ND	ND
	Copper - Total	1		ND	ND	0.079	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.8	3.4	4.04	3.3
	Vanadium	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	0.26	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.042	0.038
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

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BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 2		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB17D	pH		6.5-8.5	5.68	5.82	NA	5.77
	Dissolved Oxygen	--	--	1.8	0.8	NA	2
	Specific Conductance	--	--	108	80	NA	71
	Color		15	10	5	ND	ND
	Total Dissolved Solids		500	30	53	52	60
	Chloride		250	5.5	6.41	5.76	5.97
	Iron - Total		0.3	0.6	0.7	0.75	0.74
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	0.12	ND	ND
	Sodium - Total	160		3.8	3.8	3.98	3.4
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.042	0.034
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

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TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 3		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB13S	pH		6.5-8.5	5.08	5.01	NA	5.09
	Dissolved Oxygen	--	--	3.4	0.9	NA	2.3
	Specific Conductance	--	--	94	122	NA	119
	Color		15	20	5	15	15
	Total Dissolved Solids		500	ND	26	53	40
	Chloride		250	7.4	9.53	11.9	8.1
	Iron - Total		0.3	0.3	0.2	0.62	0.93
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	0.86	0.53	0.68	ND
	Sodium - Total	160		6	6.1	5.67	5.4
	Vanadium - Total	--	--	ND	0.004	ND	0.0072
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.011	0.011
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB13I	pH		6.5-8.5	5.07	5.24	NA	5.3
	Dissolved Oxygen	--	--	1.1	1.4	NA	1.9
	Specific Conductance	--	--	43	40	NA	47
	Color		15	15	10	5	75
	Total Dissolved Solids		500	47	43	46	35
	Chloride		250	4.9	5.43	10.4	5.08
	Iron - Total		0.3	0.3	0.5	0.42	0.15
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	0.004	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.7	3.4	3.21	0.44
	Vanadium - Total	--	--	ND	0.005	ND	ND
	Zinc - Total		5	ND	0.06	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.034	0.034
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

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TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 5		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB27S	pH		6.5-8.5	NA	5.33	NA	5.23
	Dissolved Oxygen	--	--	NA	1.7	NA	2.2
	Specific Conductance	--	--	NA	62	NA	77
	Color		15	NA	30	100	75
	Total Dissolved Solids		500	NA	60	56	65
	Chloride		250	NA	5.64	8.58	5.65
	Iron - Total		0.3	NA	0.3	0.22	0.44
	Lead - Total	0.015		NA	ND	ND	ND
	Chromium - Total	0.1		NA	0.003	ND	ND
	Nitrogen as Ammonia	--	--	NA	0.1	ND	0.105
	Sodium - Total	160		NA	3.4	3.49	4.1
	Vanadium - Total	--	--	NA	0.005	ND	ND
	Zinc - Total		5	NA	ND	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	0.015	ND
	Dissolved Iron		0.3	NA	NS	NS	NS
	Dissolved Barium	2		NA	NS	NS	NS
	Dissolved Lead	0.015		NA	NS	NS	NS
MWB27I	pH		6.5-8.5	NA	5.56	NA	5.71
	Dissolved Oxygen	--	--	NA	0.8	NA	1.3
	Specific Conductance	--	--	NA	58	NA	65
	Color		15	NA	5	ND	ND
	Total Dissolved Solids		500	NA	66	61	58
	Chloride		250	NA	5.42	8.78	5.11
	Iron - Total		0.3	NA	0.5	1.42	0.39
	Lead - Total	0.015		NA	ND	ND	ND
	Chromium - Total	0.1		NA	0.003	ND	ND
	Nitrogen as Ammonia	--	--	NA	0.1	ND	ND
	Sodium - Total	160		NA	3.5	3.9	3.2
	Vanadium - Total	--	--	NA	0.002	ND	ND
	Zinc - Total		5	NA	ND	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	0.066	0.045
	Dissolved Sodium	160		NA	NS	NS	3.2
	Dissolved Iron		0.3	NA	NS	NS	0.39
	Dissolved Barium	2		NA	NS	NS	0.045
	Dissolved Lead	0.015		NA	NS	NS	ND

Notes:

* Except pH and color

ND - Parameter not detected at concentrations above the laboratory detection limit

NS - Not sampled

NA - Not available

Bold - Above laboratory detection limits

Shaded - Above Florida regulated limits for drinking water standards (Primary or Secondary) as under Chapter 62-777 F.A.C.

PMCL - Primary Drinking Water Standards

SMCL - Secondary Drinking Water Standards

TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 5		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB27D	pH		6.5-8.5	NA	5.95	NA	6.01
	Dissolved Oxygen	--	--	NA	0.8	NA	2.4
	Specific Conductance	--	--	NA	109	NA	119
	Color		15	NA	5	10	5
	Total Dissolved Solids		500	NA	92	76	88
	Chloride		250	NA	5.89	9.1	5.71
	Iron - Total		0.3	NA	0.9	1.4	1.3
	Lead - Total	0.015		NA	ND	ND	ND
	Chromium - Total	0.1		NA	ND	ND	ND
	Nitrogen as Ammonia	--	--	NA	ND	ND	ND
	Sodium - Total	160		NA	4.2	4.23	3.9
	Vanadium - Total	--	--	NA	ND	ND	ND
	Zinc - Total		5	NA	0.05	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	0.066	0.06
	Dissolved Iron		0.3	NA	NS	NS	NS
	Dissolved Barium	2		NA	NS	NS	NS
	Dissolved Lead	0.015		NA	NS	NS	NS
MWB29S	pH		6.5-8.5	NA	4.61	NA	4.7
	Dissolved Oxygen	--	--	NA	1.3	NA	1.9
	Specific Conductance	--	--	NA	43	NA	47
	Color		15	NA	15	ND	15
	Total Dissolved Solids		500	NA	33	36	35
	Chloride		250	NA	5.46	9.08	5.15
	Iron - Total		0.3	NA	0.3	0.26	ND
	Lead - Total	0.015		NA	ND	ND	ND
	Chromium - Total	0.1		NA	ND	ND	ND
	Nitrogen as Ammonia	--	--	NA	ND	ND	ND
	Sodium - Total	160		NA	3.1	3.26	3.1
	Vanadium - Total	--	--	NA	ND	ND	ND
	Zinc - Total		5	NA	ND	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	ND	0.0071
	Dissolved Iron		0.3	NA	NS	NS	NS
	Dissolved Barium	2		NA	NS	NS	NS
	Dissolved Lead	0.015		NA	NS	NS	NS

Notes:

* Except pH and color

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NS - Not sampled

NA - Not available

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PMCL - Primary Drinking Water Standards

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TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Phase 5		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB29I	pH		6.5-8.5	NA	5.08	NA	5.2
	Dissolved Oxygen	--	--	NA	1.3	NA	1.5
	Specific Conductance	--	--	NA	42	NA	47
	Color		15	NA	ND	5	ND
	Total Dissolved Solids		500	NA	48	65	41
	Chloride		250	NA	4.94	9.59	4.82
	Iron - Total		0.3	NA	0.4	0.65	0.38
	Lead - Total	0.015		NA	0.003	0.004	ND
	Chromium - Total	0.1		NA	ND	ND	ND
	Nitrogen as Ammonia	--	--	NA	ND	ND	ND
	Sodium - Total	160		NA	3.5	3.46	2.9
	Vanadium - Total	--	--	NA	0.004	ND	ND
	Zinc - Total		5	NA	ND	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	0.061	0.04
	Dissolved Sodium	160		NA	2.9	NS	2.9
	Dissolved Iron		0.3	NA	0.3	NS	0.38
	Dissolved Barium	2		NA	ND	NS	0.04
	Dissolved Lead	0.015		NA	ND	NS	0.0041
MWB29D	pH		6.5-8.5	NA	5.69	NA	5.7
	Dissolved Oxygen	--	--	NA	1	NA	1.2
	Specific Conductance	--	--	NA	81	NA	91
	Color		15	NA	5	ND	5
	Total Dissolved Solids		500	NA	50	87	59
	Chloride		250	NA	6.43	8.67	6.16
	Iron - Total		0.3	NA	1.5	1.59	1.5
	Lead - Total	0.015		NA	ND	ND	ND
	Chromium - Total	0.1		NA	ND	ND	ND
	Nitrogen as Ammonia	--	--	NA	ND	ND	ND
	Sodium - Total	160		NA	4	4.25	3.8
	Vanadium - Total	--	--	NA	ND	ND	ND
	Zinc - Total		5	NA	ND	ND	ND
	Beryllium - Total	0.004		NA	ND	ND	ND
	Cadmium - Total	0.005		NA	ND	ND	ND
	Barium - Total	2		NA	ND	0.067	0.053
	Dissolved Iron		0.3	NA	NS	NS	NS
	Dissolved Barium	2		NA	NS	NS	NS
	Dissolved Lead	0.015		NA	NS	NS	NS

Notes:

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TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Background		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB2S	pH		6.5-8.5	4.39	4.46	NA	4.51
	Dissolved Oxygen	--	--	1.4	1.8	NA	2
	Specific Conductance	--	--	50	61	NA	64
	Color		15	ND	5	ND	5
	Total Dissolved Solids		500	14	24	ND	29
	Chloride		250	4.6	5.75	8.41	4.83
	Iron - Total		0.3	0.4	0.7	ND	0.49
	Lead - Total	0.015		ND	ND	0.48	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.7	4	4.1	3.3
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.018	0.015
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS
MWB2I	pH		6.5-8.5	4.66	4.78	NA	4.86
	Dissolved Oxygen	--	--	1.7	1.5	NA	1.8
	Specific Conductance	--	--	42	43	NA	49
	Color		15	15	10	ND	10
	Total Dissolved Solids		500	16	20	56	41
	Chloride		250	6.5	7.5	11	7.38
	Iron - Total		0.3	0.3	0.3	0.35	0.41
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		4.6	4.4	4.3	4.3
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.024	0.021
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

Notes:

* Except pH and color

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NA - Not available

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SMCL - Secondary Drinking Water Standards

TABLE 1
SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Background		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB3S	pH		6.5-8.5	4.53	4.75	NA	4.88
	Dissolved Oxygen	--	--	1.4	1.5	NA	1.5
	Specific Conductance	--	--	46	45	NA	49
	Color		15	5	ND	ND	5
	Total Dissolved Solids		500	ND	23	32	28
	Chloride		250	4.8	4.91	8.93	4.66
	Iron - Total		0.3	0.6	0.8	0.62	0.78
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		0.6	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.8	3.5	3.89	3.3
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	ND	0.0071
	Disolved Iron		0.3	NS	NS	NS	NS
	Disolved Barium	2		NS	NS	NS	NS
	Disolved Lead	0.015		NS	NS	NS	NS
MWB3I	pH		6.5-8.5	4.75	4.93	NA	4.98
	Dissolved Oxygen	--	--	64	1.4	NA	1.6
	Specific Conductance	--	--	36	39	NA	41
	Color		15	ND	ND	ND	ND
	Total Dissolved Solids		500	ND	19	38	31
	Chloride		250	4.6	4.79	4.49	4.62
	Iron - Total		0.3	0.6	0.6	0.62	0.66
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	ND	ND	ND
	Sodium - Total	160		3.3	3.2	3.4	3
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.024	0.019
	Disolved Iron		0.3	NS	NS	NS	NS
	Disolved Barium	2		NS	NS	NS	NS
	Disolved Lead	0.015		NS	NS	NS	NS

Notes:

* Except pH and color

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NA - Not available

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SMCL - Secondary Drinking Water Standards

TABLE 1

SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Well	Component	PMCL	SMCL	April, 1999	October, 1999	January, 2000	October, 2000
Background		(mg/L)	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MWB31D	pH		6.5-8.5	6.95	6.93	NA	6.61
	Dissolved Oxygen	--	--	1.2	0.8	NA	1.8
	Specific Conductance	--	--	386	343	NA	394
	Color		15	ND	10	5	10
	Total Dissolved Solids		500	200	220	283	230
	Chloride		250	4.8	5.52	9.87	5.3
	Iron - Total		0.3	0.4	0.3	0.53	0.49
	Lead - Total	0.015		ND	ND	ND	0.0034
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen as Ammonia	--	--	ND	0.14	ND	0.135
	Sodium - Total	160		6.9	6.9	6.76	6.5
	Vanadium - Total	--	--	ND	ND	ND	ND
	Zinc - Total		5	ND	ND	ND	ND
	Beryllium - Total	0.004		ND	ND	ND	ND
	Cadmium - Total	0.005		ND	ND	ND	ND
	Barium - Total	2		ND	ND	0.11	0.091
	Dissolved Iron		0.3	NS	NS	NS	NS
	Dissolved Barium	2		NS	NS	NS	NS
	Dissolved Lead	0.015		NS	NS	NS	NS

Notes:

* Except pH and color

ND - Parameter not detected at concentrations above the laboratory detection limit

NS - Not sampled

NA - Not available

Bold - Above laboratory detection limits

Shaded - Above Florida regulated limits for drinking water standards (Primary or Secondary) as under Chapter 62-777 F.A.C.

PMCL - Primary Drinking Water Standards

SMCL - Secondary Drinking Water Standards

TABLE 2
SUMMARY OF DETECTED PARAMETERS IN SURFACE WATER
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Sample Point	Component	PMCL (mg/L)	SMCL (mg/L)*	April, 1999 (mg/L)	October, 1999 (mg/L)	January, 2000 (mg/L)	October, 2000 (mg/L)
SW-1	pH		6.5-8.5	6.55	6.78	NA	6.22
	Dissolved Oxygen	--	--	5.6	4.2	NA	6.7
	Specific Conductance	--	--	158	245	NA	238
	Total Dissolved Solids	--	500	72	110	152	168
	Total Organic Carbon	--	--	10	6.73	10.9	9.44
	Hardness as CaCO3	--	--	46	94	NA	100
	Iron - Total		0.3	0.2	0.1	0.45	0.18
	Lead - Total	0.015		ND	ND	ND	ND
	Chromium - Total	0.1		0.052	ND	ND	ND
	Nitrogen - Total	--	--	0.7	ND	0.62	0.6
	Cobalt - Total	0.42		ND	22	ND	ND
	Zinc - Total	5		ND	0.06	ND	ND
	Vanadium	--	--	0.036	ND	ND	ND
	Chlorophyll A	--	--	1.3	ND	2.3	4.2
	Fecal Coliform	--	--	24	560	TNTC	62
SW-2**	pH		6.5-8.5	5.57	5.41	NA	4.19
	Dissolved Oxygen	--	--	5.7	5.3	NA	5.8
	Specific Conductance	--	--	73	45	NA	127
	Total Dissolved Solids	--	500	44	11	79	153
	Total Organic Carbon	--	--	5.2	4	11.7	19
	Hardness as CaCO3	--	--	7	5.54	NA	24
	Iron - Total		0.3	0.3	0.2	ND	1.6
	Lead - Total	0.015		ND	0.003	0.44	ND
	Chromium - Total	0.1		ND	ND	ND	ND
	Nitrogen - Total	--	--	ND	ND	ND	1.86
	Cobalt - Total	0.42		ND	15	ND	ND
	Zinc - Total	5		ND	ND	ND	ND
	Vanadium	--	--	ND	ND	ND	ND
	Chlorophyll A	--	--	3.8	ND	ND	5.2
	Fecal Coliform	--	--	14	140	104	Z

Notes:

* Except pH and color

** January, 2000 data for SW-2 was listed as SW-3 and assumed to be SW-2. Sampling at SW-3 was eliminated in 1996.

ND - Parameter not detected at concentrations above the laboratory detection limit

NS - Not sampled

NA - Not available

Bold - Above laboratory detection limits

Shaded - Above Florida regulated limits for drinking water standards (Primary or Secondary) as under Chapter 62-777 F.A.C.

PMCL - Primary Drinking Water Standards

SMCL - Secondary Drinking Water Standards

Z - Too numerous to count

TABLE 3
SUMMARY OF DETECTED PARAMETERS IN LEACHATE
BIENNIAL WATER QUALITY DATA REPORT

TRAIL RIDGE LANDFILL

BALDWIN, FLORIDA

Sump	Component	PMCL (mg/L)	SMCL (mg/L)*	April, 1999 (mg/L)	October, 1999 (mg/L)	January, 2000 (mg/L)	October, 2000 (mg/L)
LCS	pH		6.5-8.5	7.37	7.41	NA	7.48
	Dissolved Oxygen	--	--	0.3	0.2	NA	0.2
	Specific Conductance	--	--	5740	10350	NA	9680
	Bicarbonate	--	--	1800	4500	4580	6550
	Total Dissolved Solids		500	2200	6200	3450	11000
	Antimony - Total	0.006		ND	ND	ND	0.026
	Arsenic - Total	0.05		0.03	0.69	0.38	0.24
	Barium - Total	2		ND	2.6	1.32	0.47
	Chloride		250	570	1250	815	1368
	Iron - Total		0.3	140	2900	1660	2300
	Lead - Total	0.015		ND	0.11	0.042	0.031
	Chromium - Total	0.1		0.051	0.734	0.23	0.08
	Nitrogen, Ammonia	--	--	300	702	474	542
	Mercury - Total	0.002		ND	0.0057	0.0025	0.0064
	Nickel - Total	0.1		0.14	1.1	0.43	0.22
	Copper - Total	1		0.07	1.8	0.42	0.96
	Cobalt - Total	--	--	0.07	0.76	3U (b)	0.055
	Selenium - Total	0.05		ND	ND	ND	0.01
	Zinc - Total	5		0.07	2	0.94	0.46
	Silver - Total		0.1	ND	0.074	1.0U (b)	ND
	Sodium - Total	160		660	1100	978	880
	Thallium - Total	0.002		0.002	0.045	0.048	ND
	Vanadium - Total	--	--	0.045	0.706	0.34	0.097
	Acetone	700		5.4	ND	9.2U (b)	1.3
	2-Butanone	4200	--	5.8	190	12U (b)	1.4
	1,4-Dichlorobenzene	0.075		ND	ND	0.012	0.011
	Ethylbenzene	0.7	--	0.027	ND	0.05	0.034
	4-Methyl-2-Pentanone	--	--	0.18	ND	ND	ND
	Toluene	1		0.043	ND	0.038	ND
	Xylene (Total)	10		0.068	ND	0.12	0.056
LDSS	pH		6.5-8.5	8.76	7.63	NA	7.55
	Dissolved Oxygen	--	--	2.8	0.1	NA	0.7
	Specific Conductance	--	--	9750	8800	NA	7090
	Bicarbonate	--	--	3400	2920	1515	2390
	Total Dissolved Solids		500	4100	5200	NA	5000
	Antimony - Total	0.006		ND	ND	0.17	0.0058
	Arsenic - Total	0.05		0.037	0.33	ND	0.047
	Barium - Total	2		ND	ND	4640	0.28
	Chloride		250	1200	1000	0.3U (c.)	927
	Iron - Total		0.3	12	24	ND	40.8
	Lead - Total	0.015		ND	ND	0.19	0.003
	Chromium - Total	0.1		0.052	0.069	ND	0.027
	Nitrogen, Ammonia	--	--	780	455	699	368
	Mercury - Total	0.002		ND	ND	ND	ND
	Nickel - Total	0.1		0.18	0.16	ND	0.088
	Copper - Total	1		0.06	ND	ND	0.01
	Cobalt - Total	--	--	0.08	0.09	11.95	0.022
	Selenium - Total	0.05		ND	ND	0.1U (c.)	0.023
	Zinc - Total	5		ND	0.06	ND	ND
	Silver - Total		0.1	ND	ND	1430	ND
	Sodium - Total	160		1200	1000	4610	1000
	Thallium - Total	0.002		ND	ND	ND	ND
	Vanadium - Total	--	--	0.036	0.045	0.063	0.033
	Acetone	700		ND	1.2	ND	ND
	2-Butanone	4200	--	ND	4.6	0.74	ND
	1,4-Dichlorobenzene	0.7		ND	ND	ND	ND
	Ethylbenzene	0.7	--	ND	ND	0.018	ND
	4-Methyl-2-Pentanone	--	--	ND	ND	ND	ND
	Toluene	1		ND	ND	ND	ND
	Xylene (Total)	10		ND	ND	0.11	0.02

Notes:

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SMCL - Secondary Drinking Water Standards

TRAIL RIDGE LANDFILL

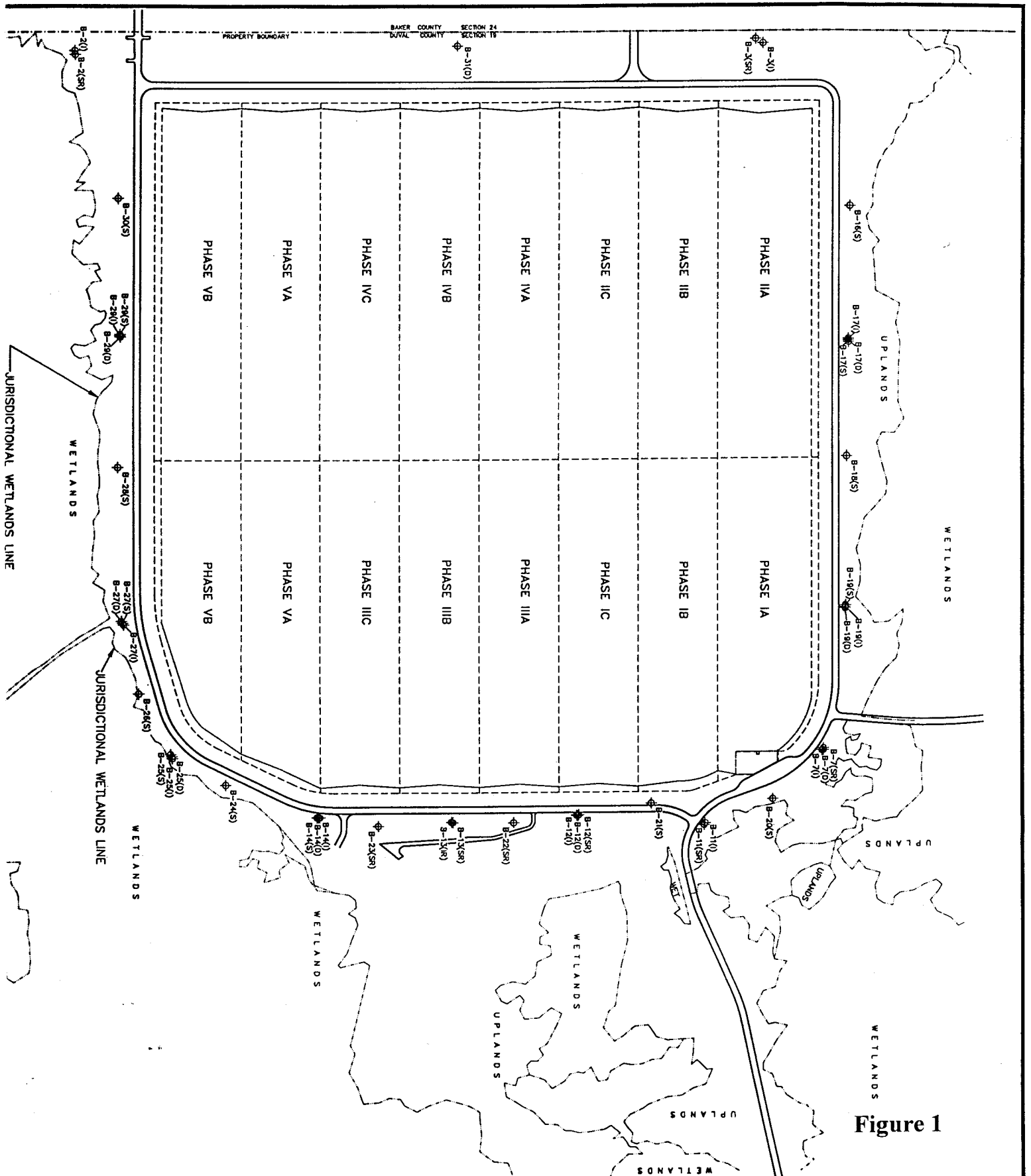


Figure 1

Total Iron Concentrations (Phase I Wells)

(SDWS = 0.3 mg/L)

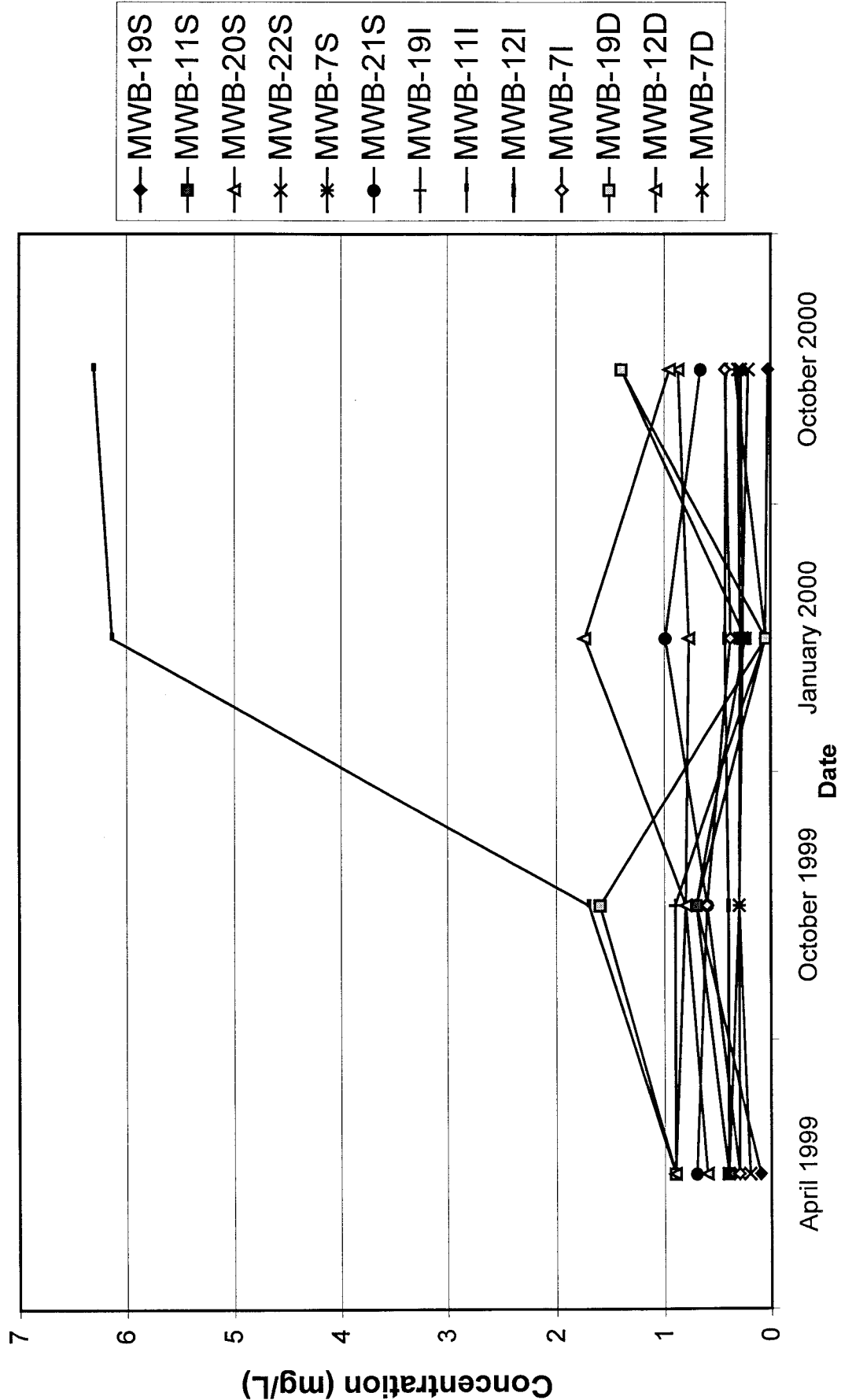


Figure 2 (a)

Total Iron Concentrations (Phase II Wells)

(SDWS = 0.3 mg/L)

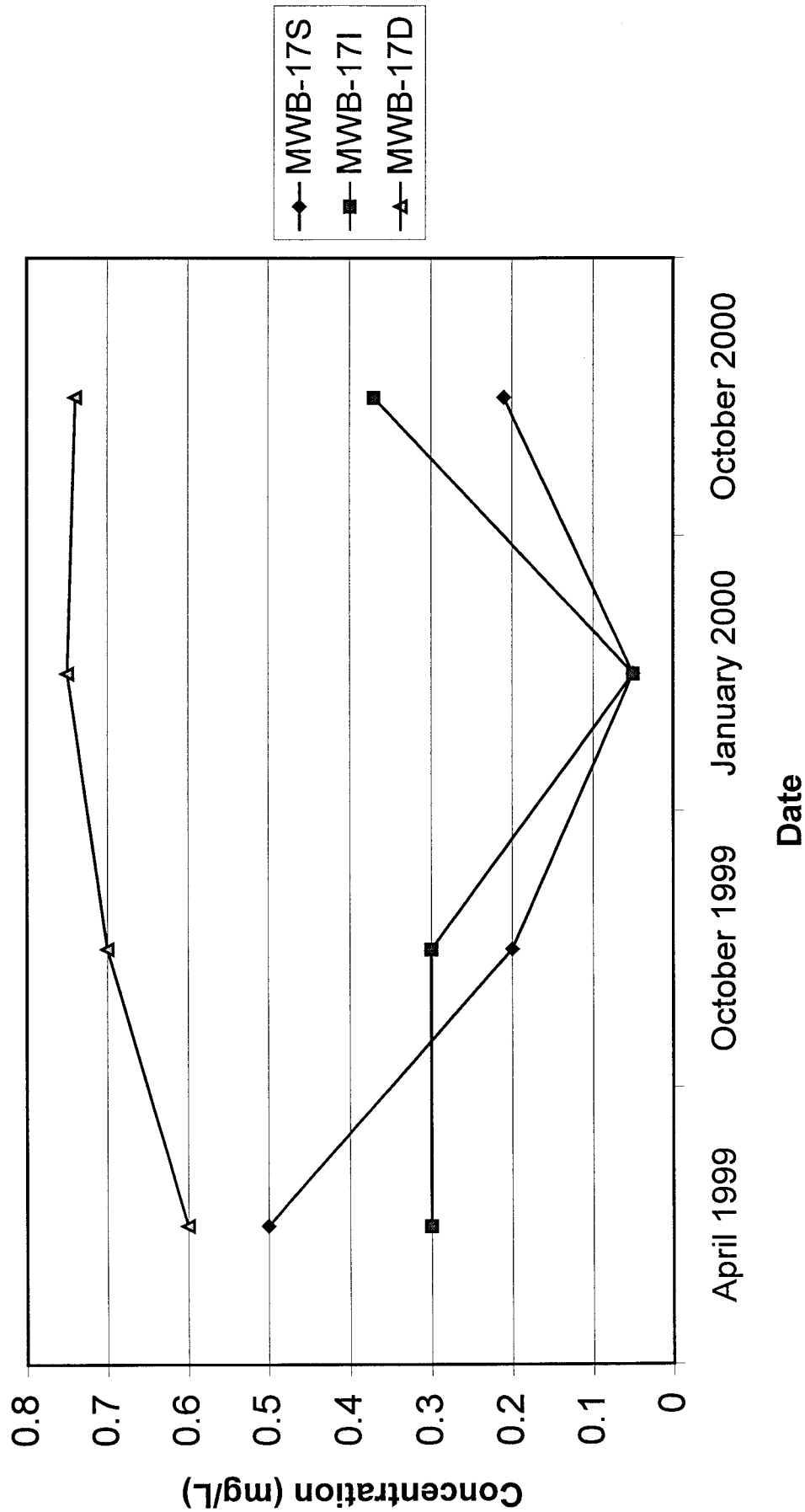


Figure 2 (b)

Total Iron Concentrations (Phase III Wells)

(SDWS = 0.3 mg/L)

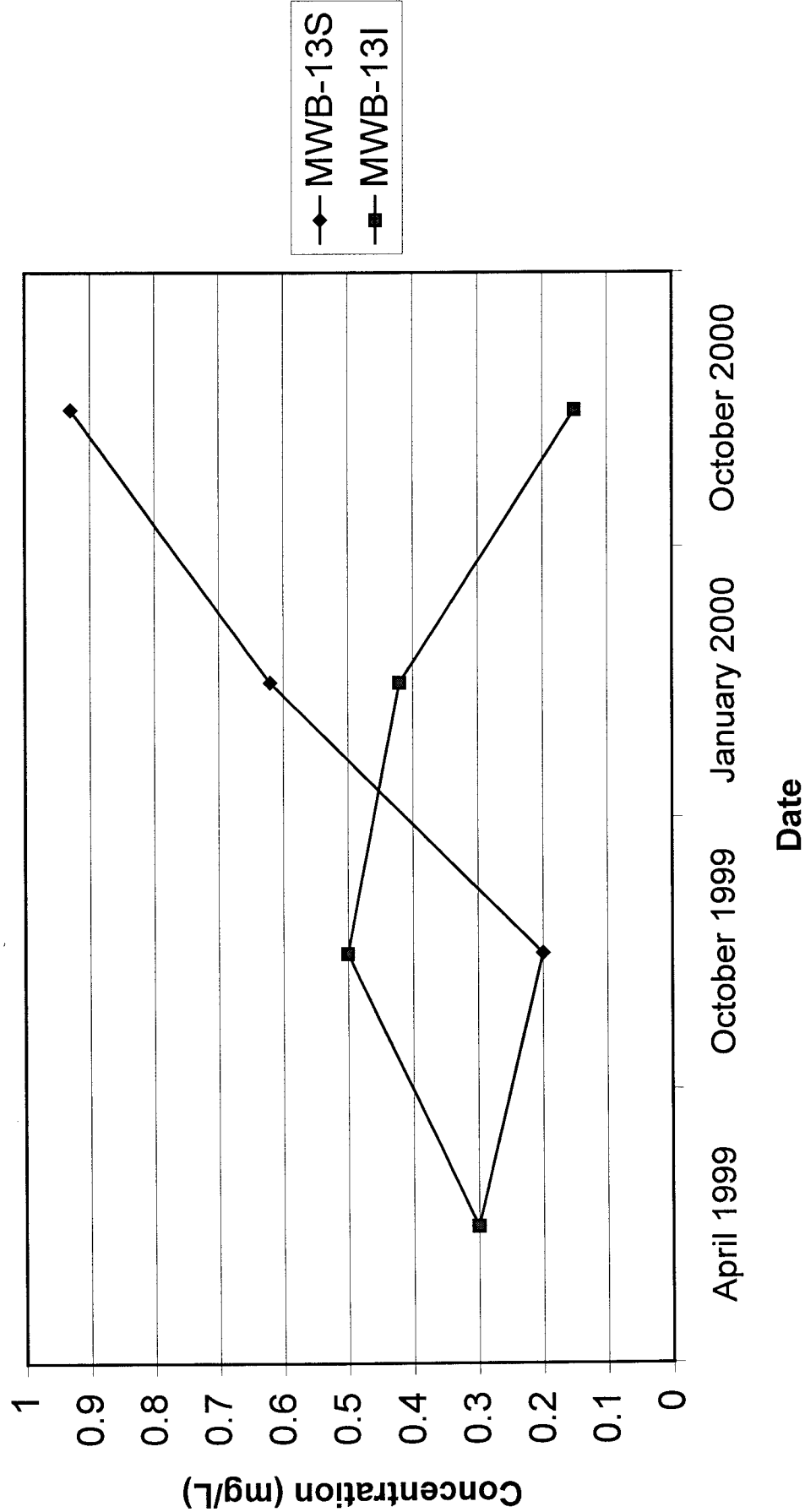


Figure 2 (c)

Total Iron Concentrations (Phase V Wells)

(SDWS = 0.3 mg/L)

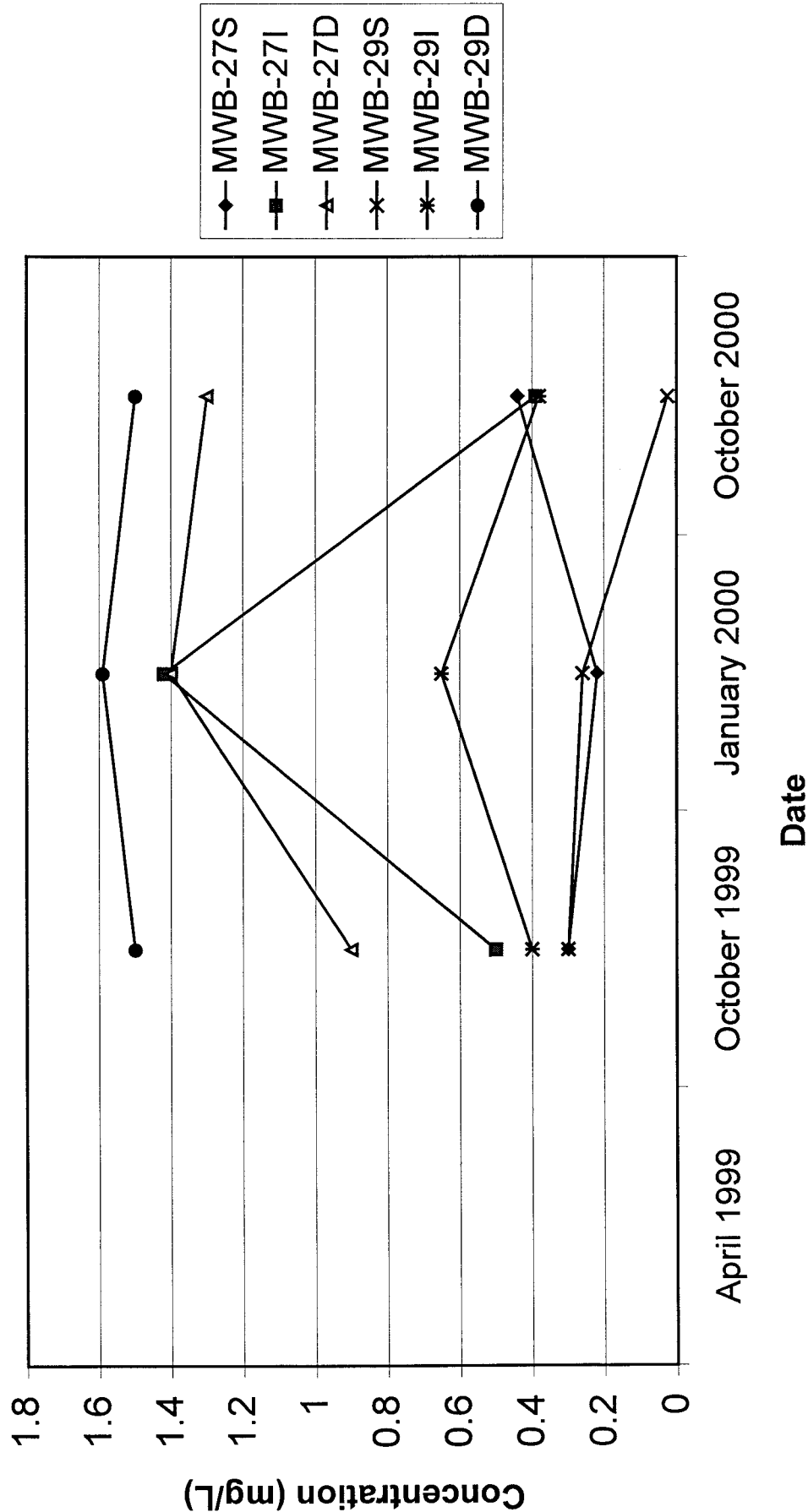


Figure 2 (d)

Total Iron Concentrations (Background Wells)

(SDWS = 0.3 mg/L)

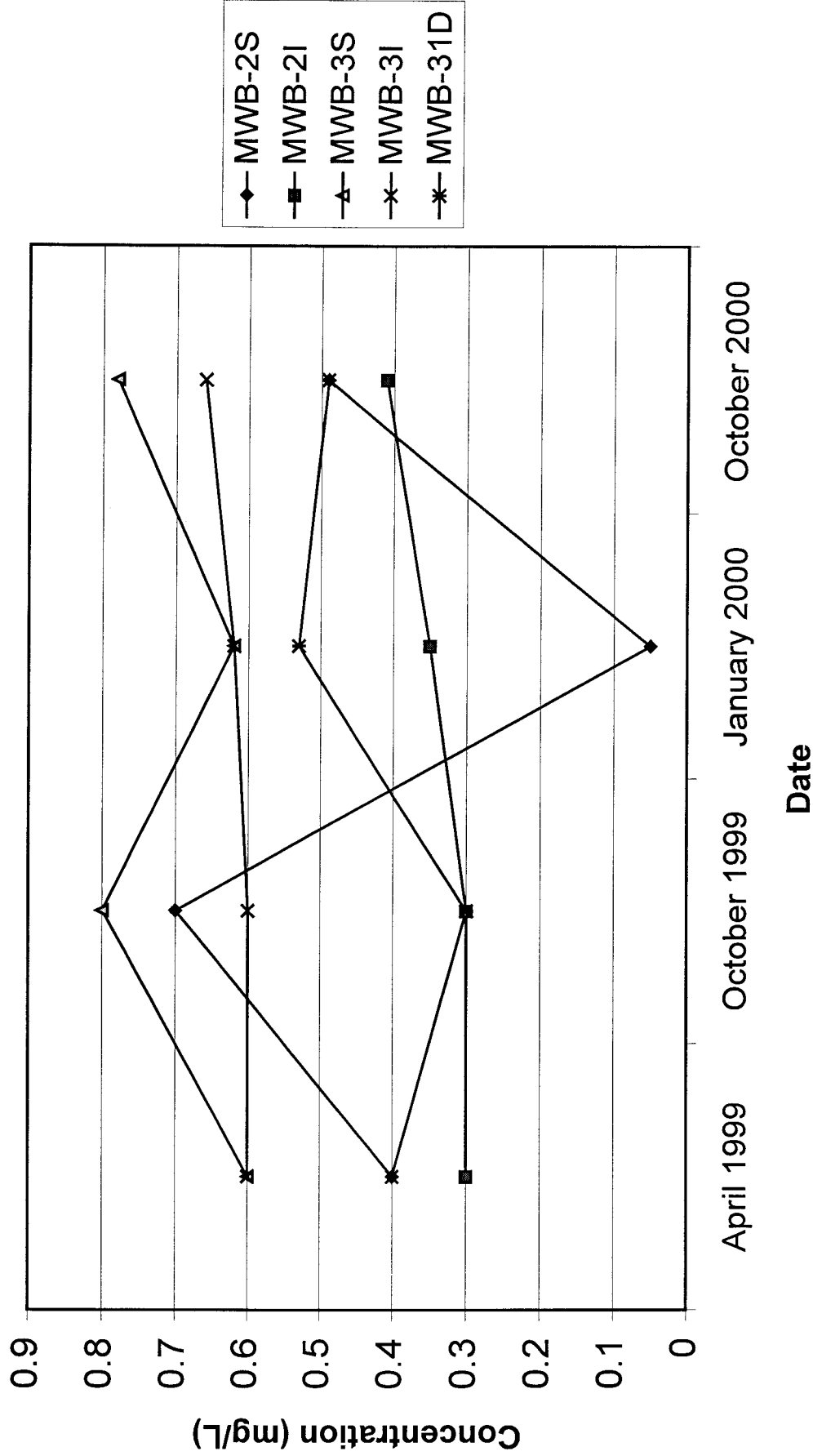


Figure 2 (e)

Dissolved Iron Concentrations

(SDWS = 0.3 mg/L)

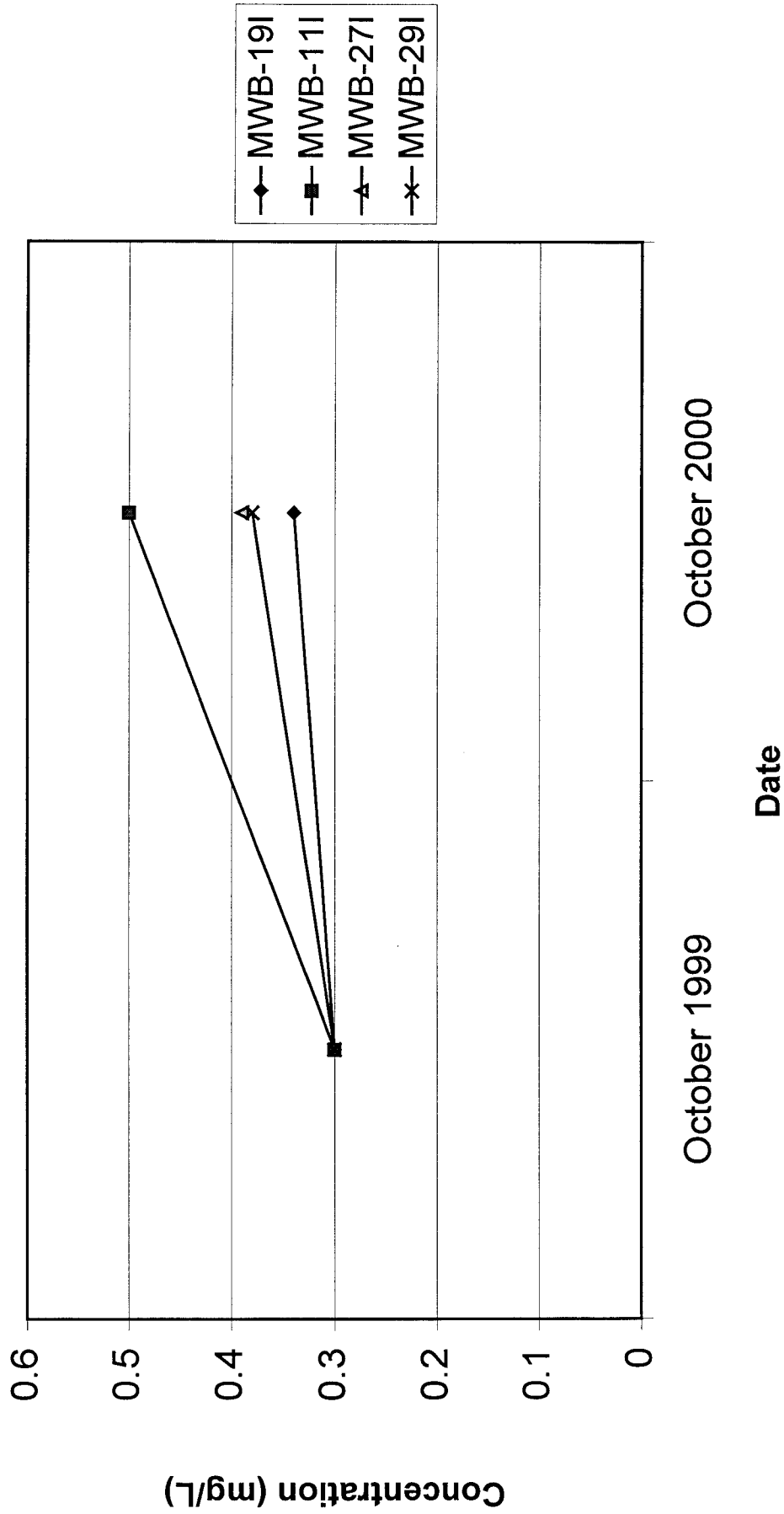


Figure 3

pH Values (Phase I Wells) (SDWS = 6.5 < pH < 8.5)

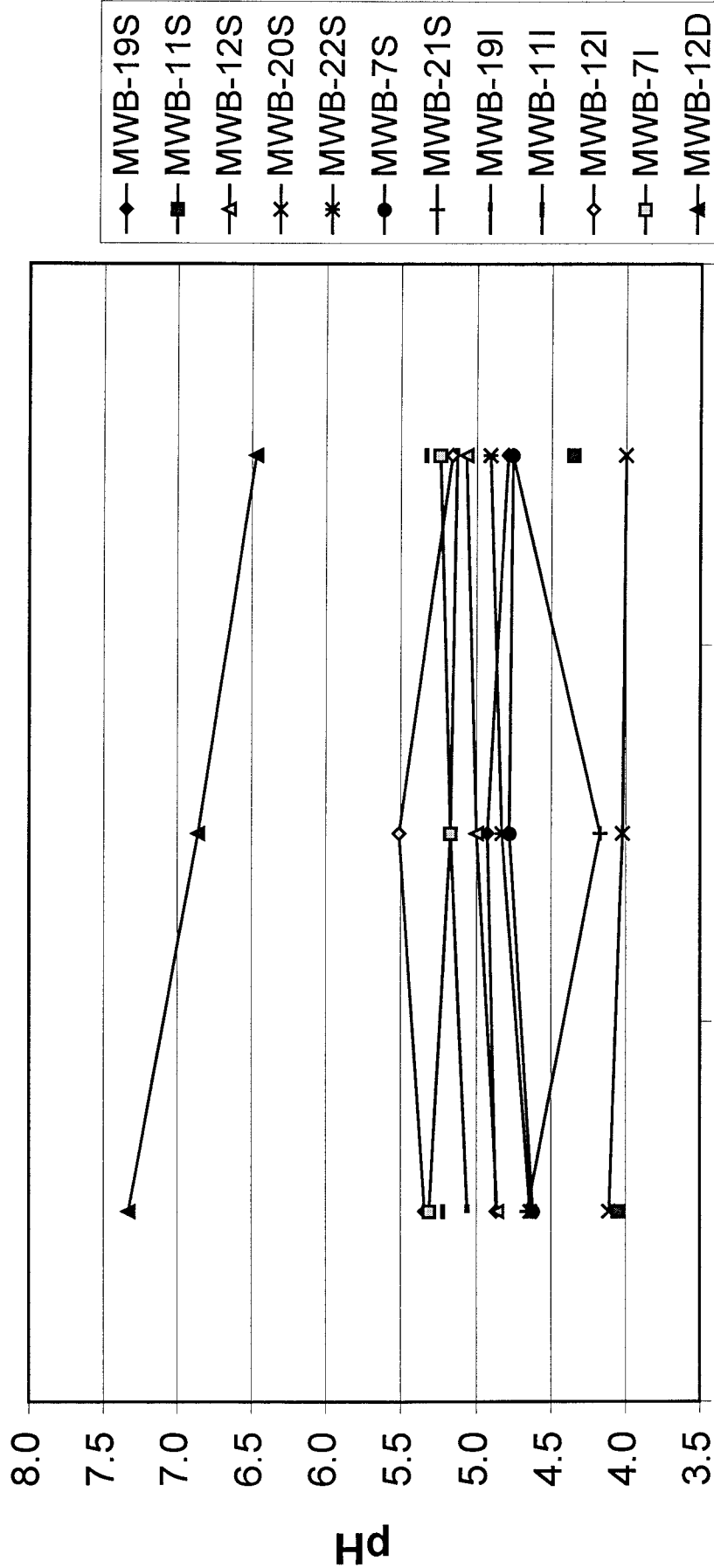


Figure 4 (a)

pH Values (Phase II Wells)

(SDWS = $6.5 < \text{pH} < 8.5$)

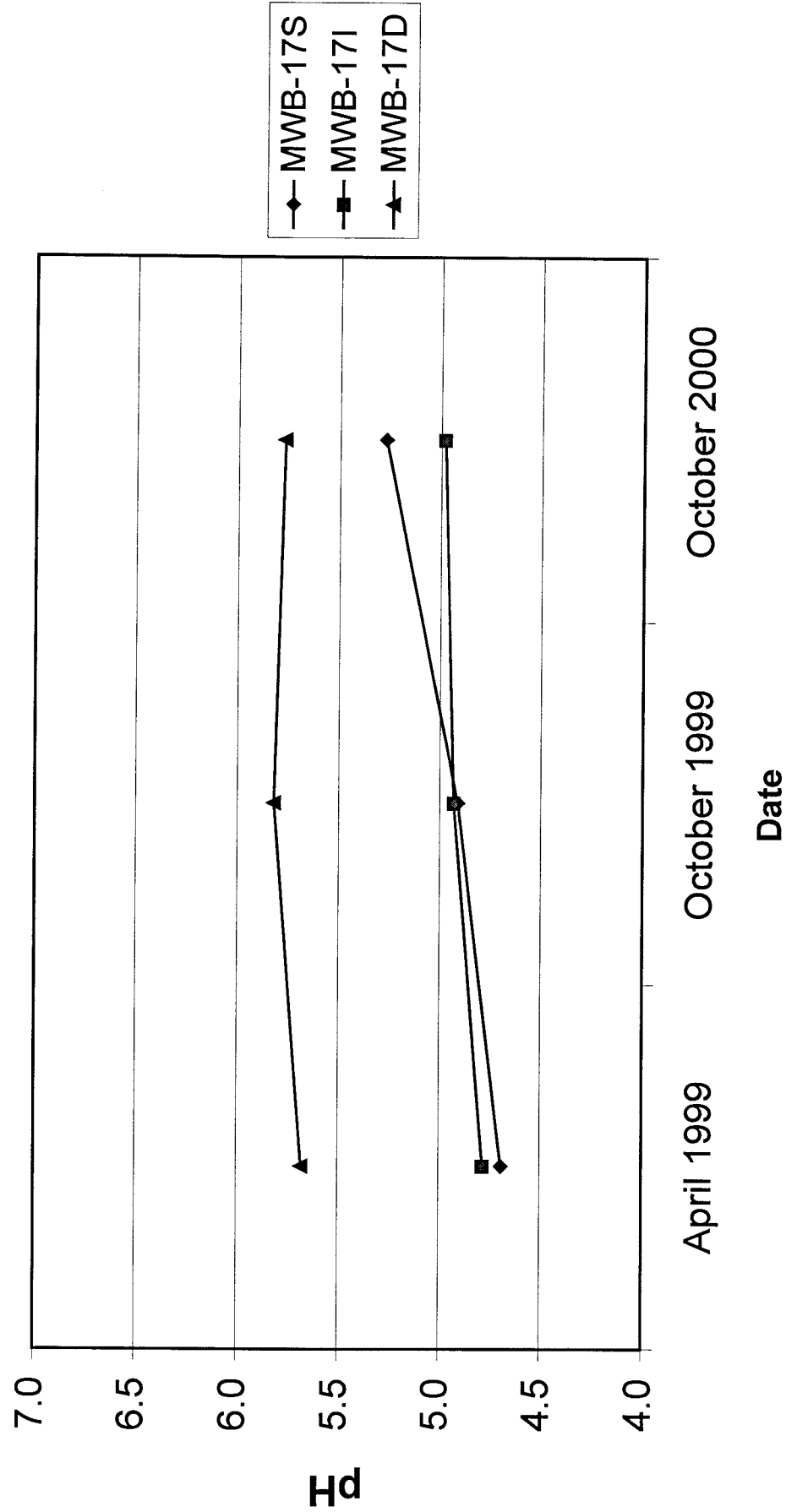


Figure 4 (b)

pH Values (Phase III Wells)

(SDWS = 6.5 < pH < 8.5)

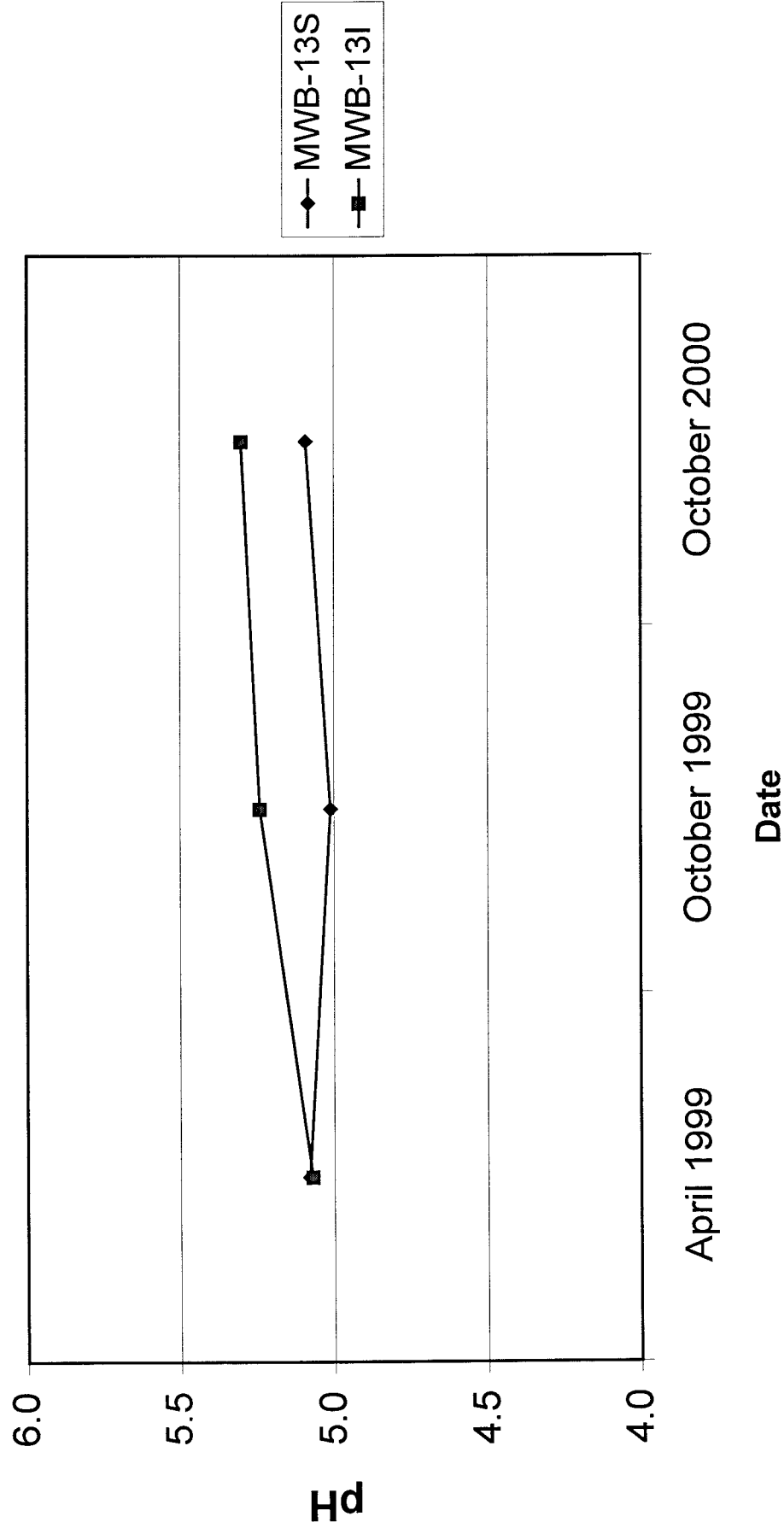


Figure 4 (c)

pH Values (Phase V Wells)

(SDWS = 6.5 < pH < 8.5)

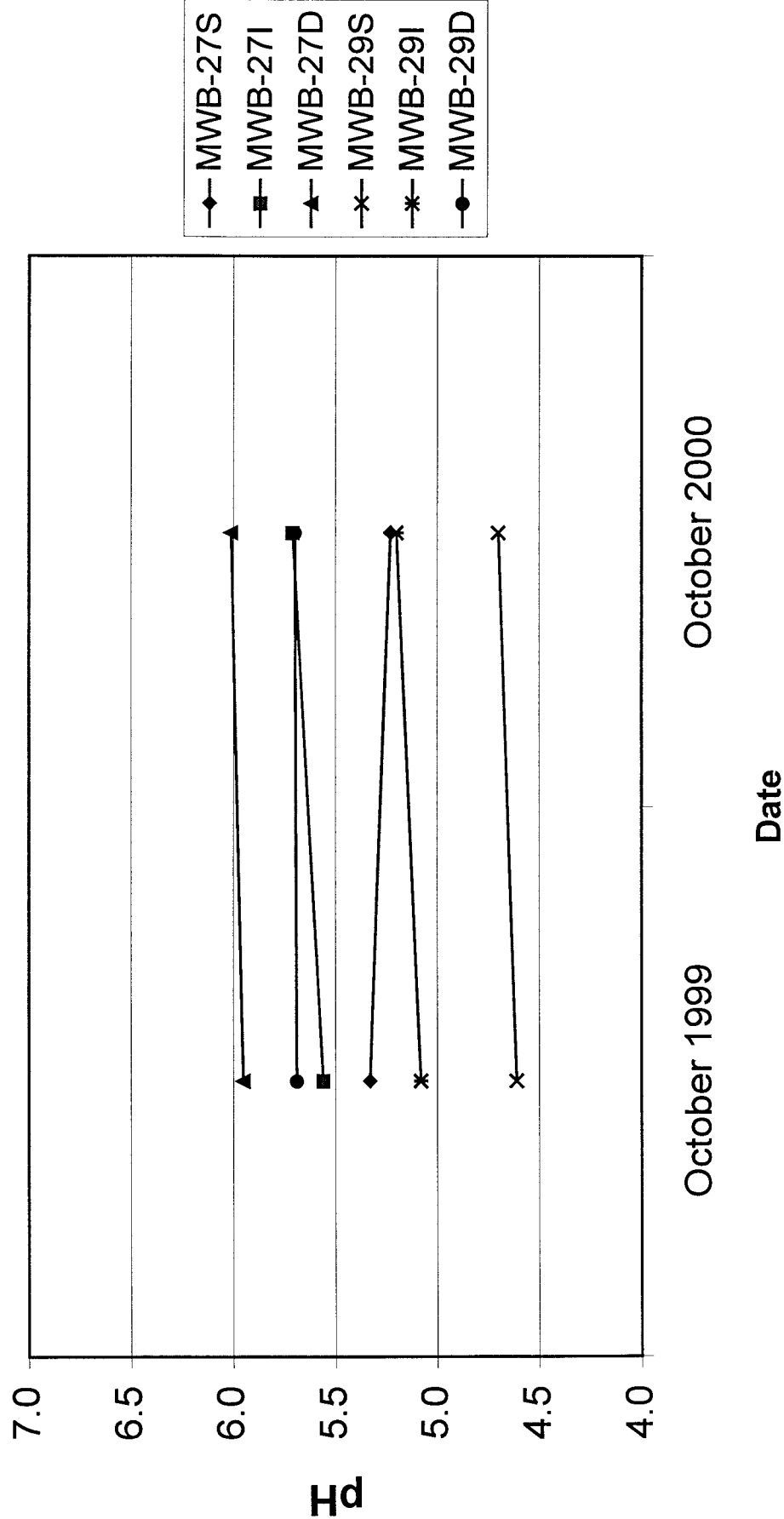


Figure 4 (d)

pH Values (Background Wells) (SDWS = 6.5 < pH < 8.5)

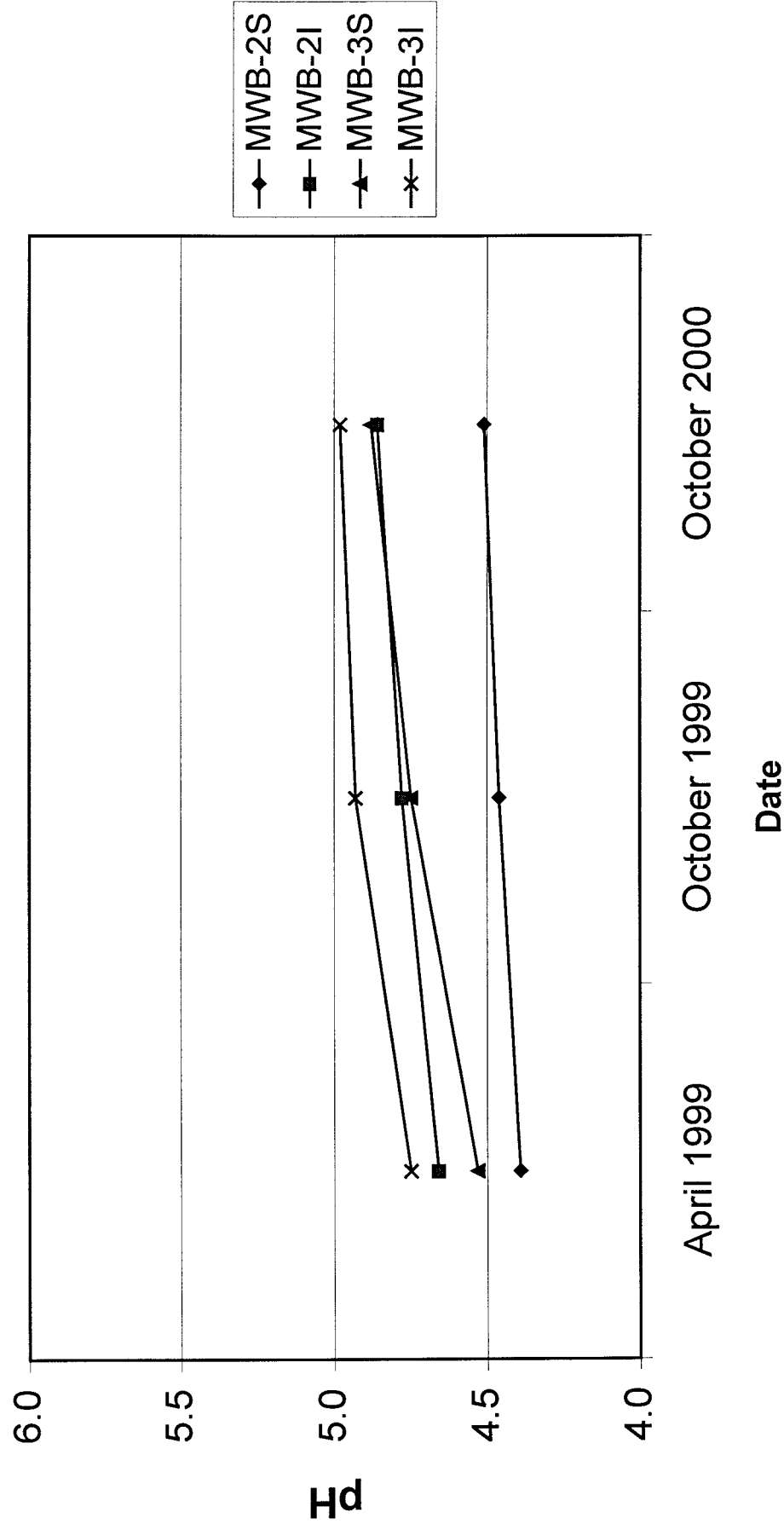


Figure 4 (e)

Color Values - Shallow Wells

(SDWS = 15 c.u.)

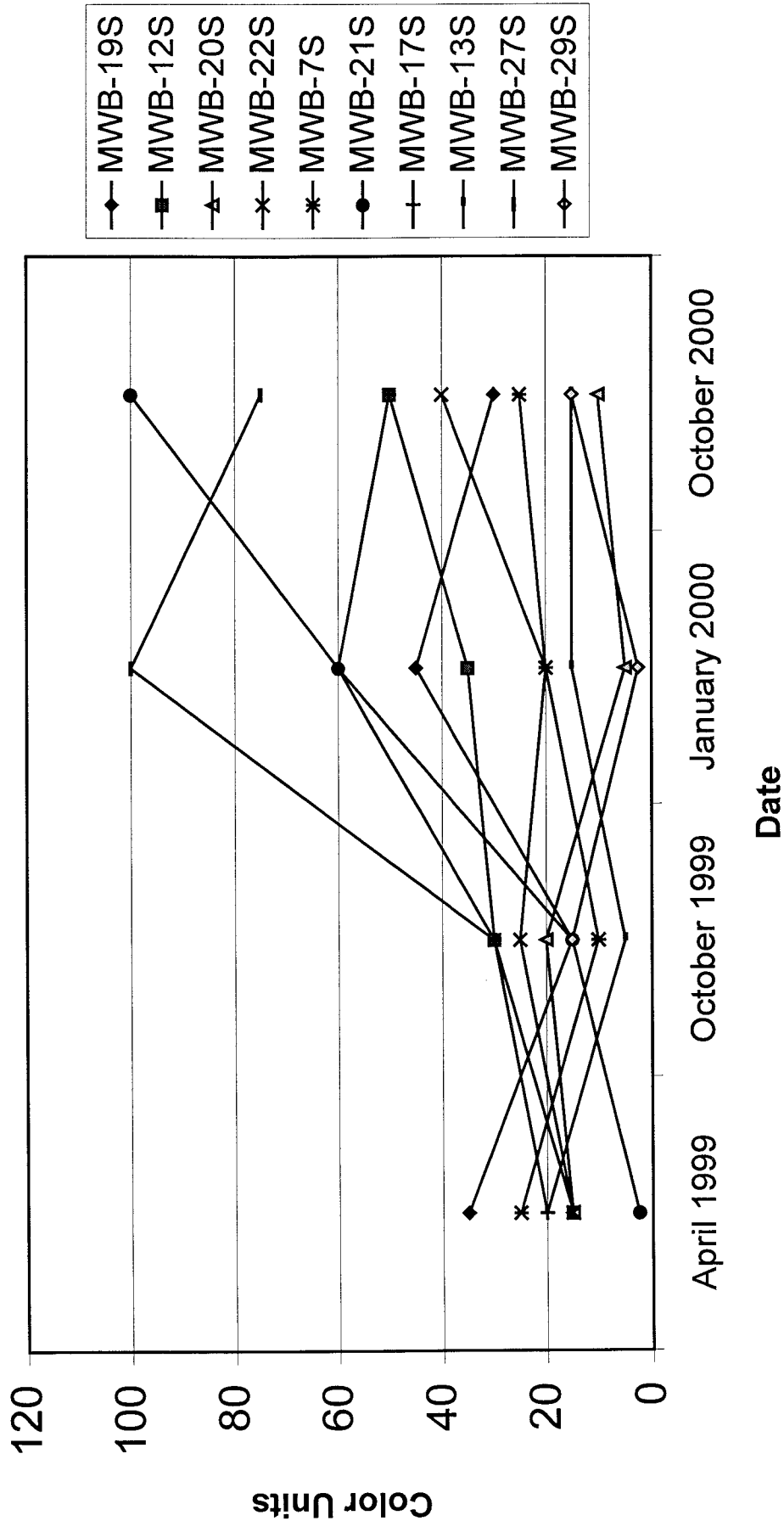


Figure 5 (a)

Color Values - Intermediate Wells

(SDWS = 15 c.u.)

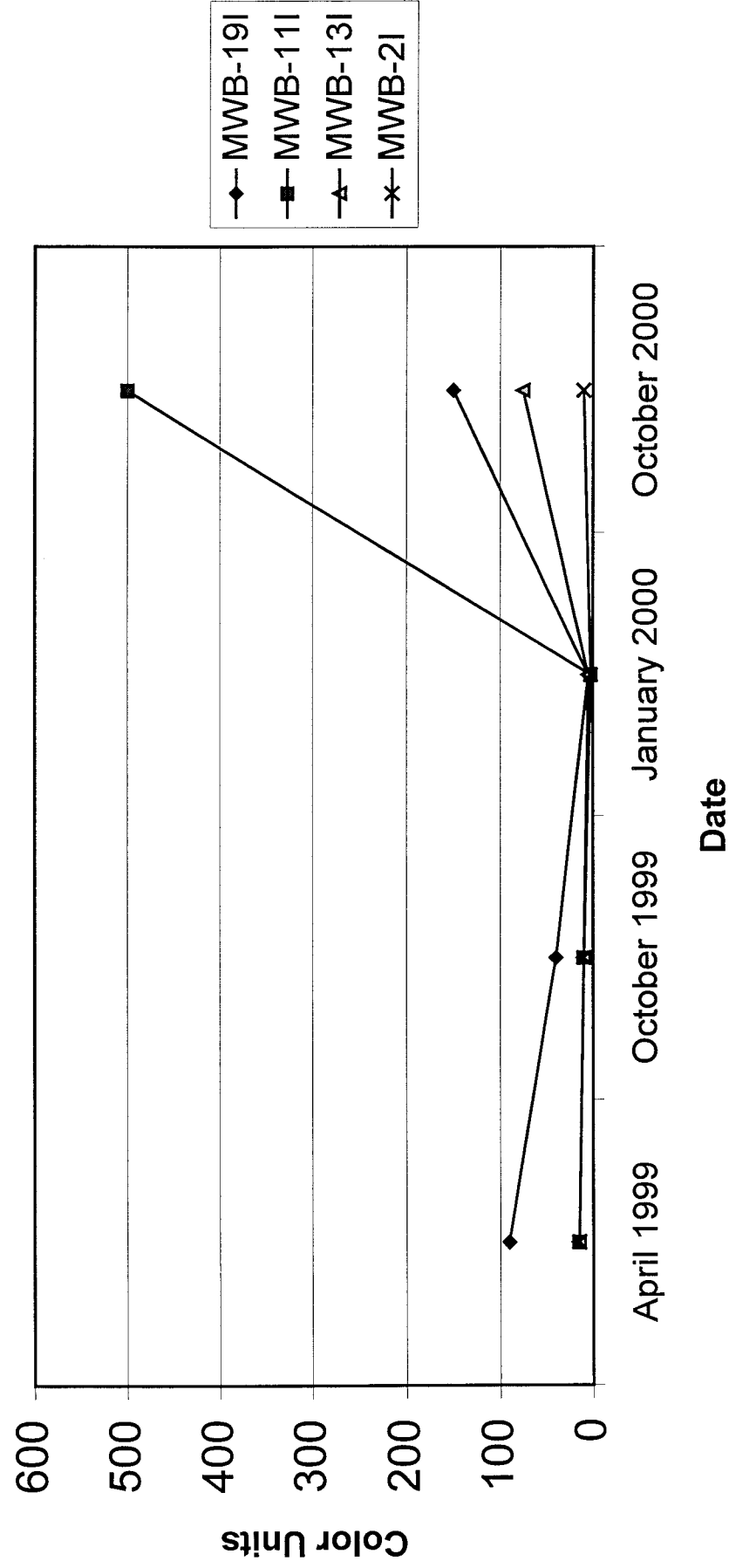


Figure 5 (b)

Total Lead Concentrations

(PDWS = 0.015mg/L)

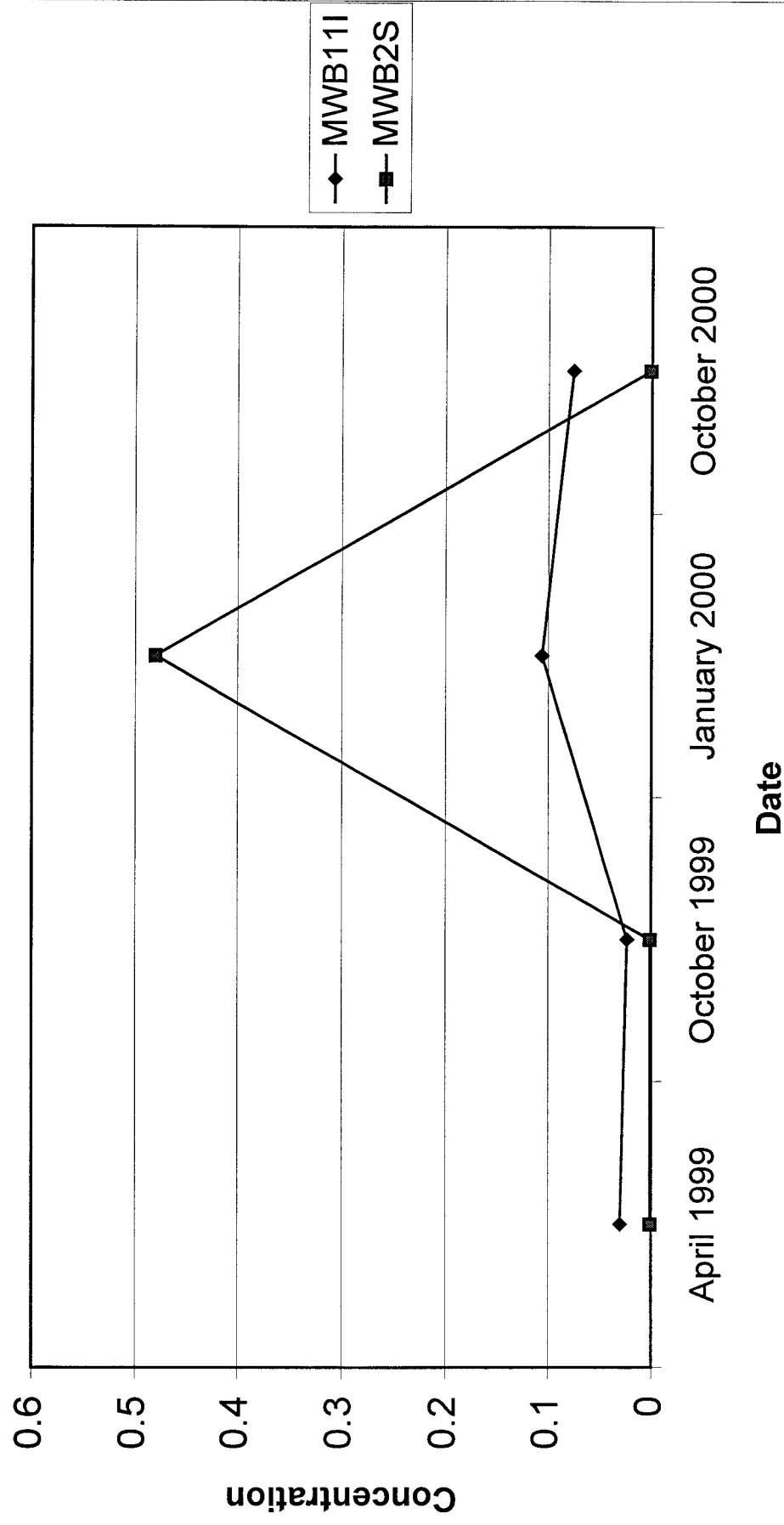


Figure 6

Beryllium Concentrations (MWB-11I)

(PDWS = 0.004 mg/L)

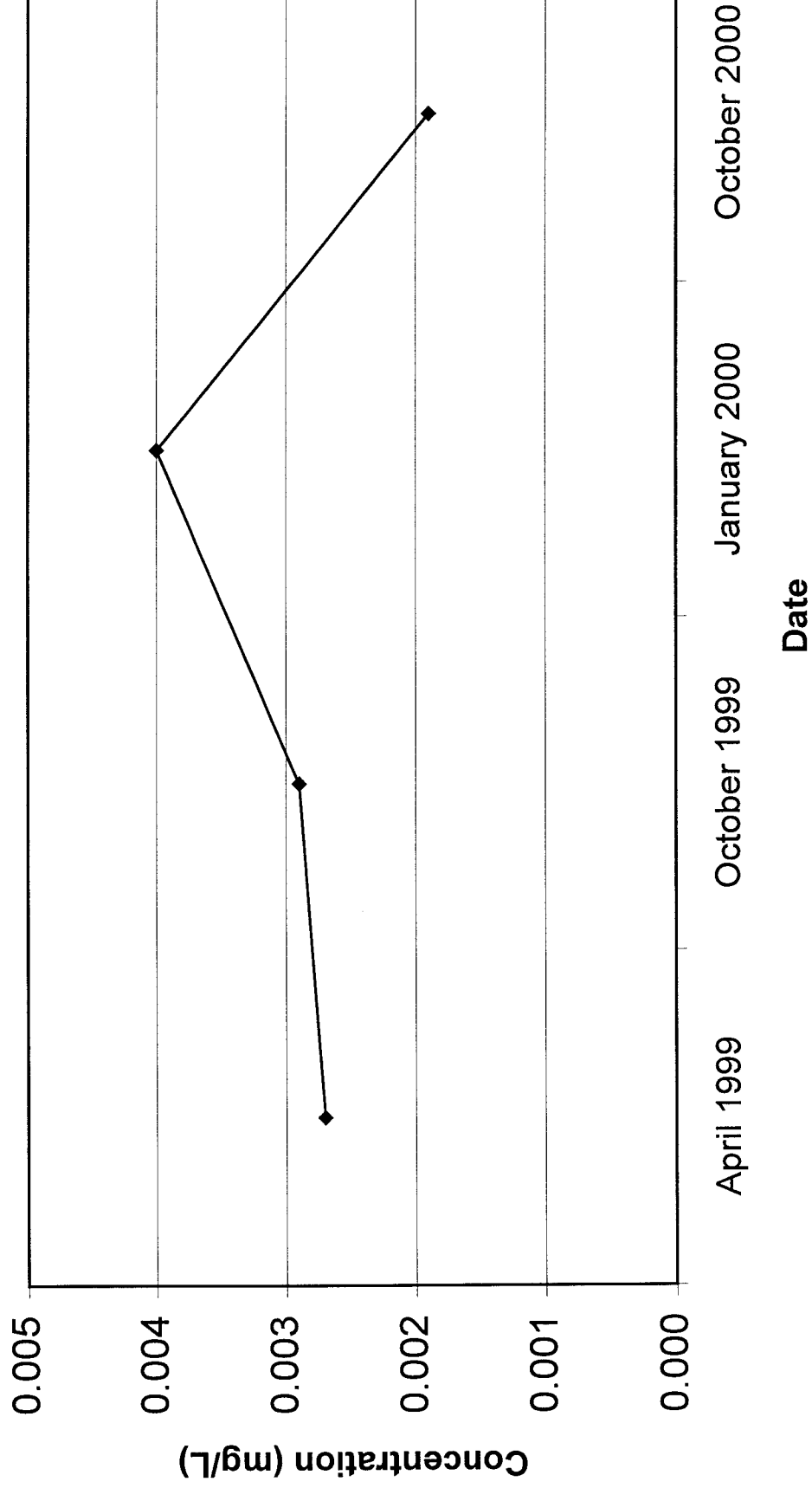


Figure 7

Vanadium Concentrations (MWB-11I)

(Florida Guidance Concentration = 0.049 mg/L)

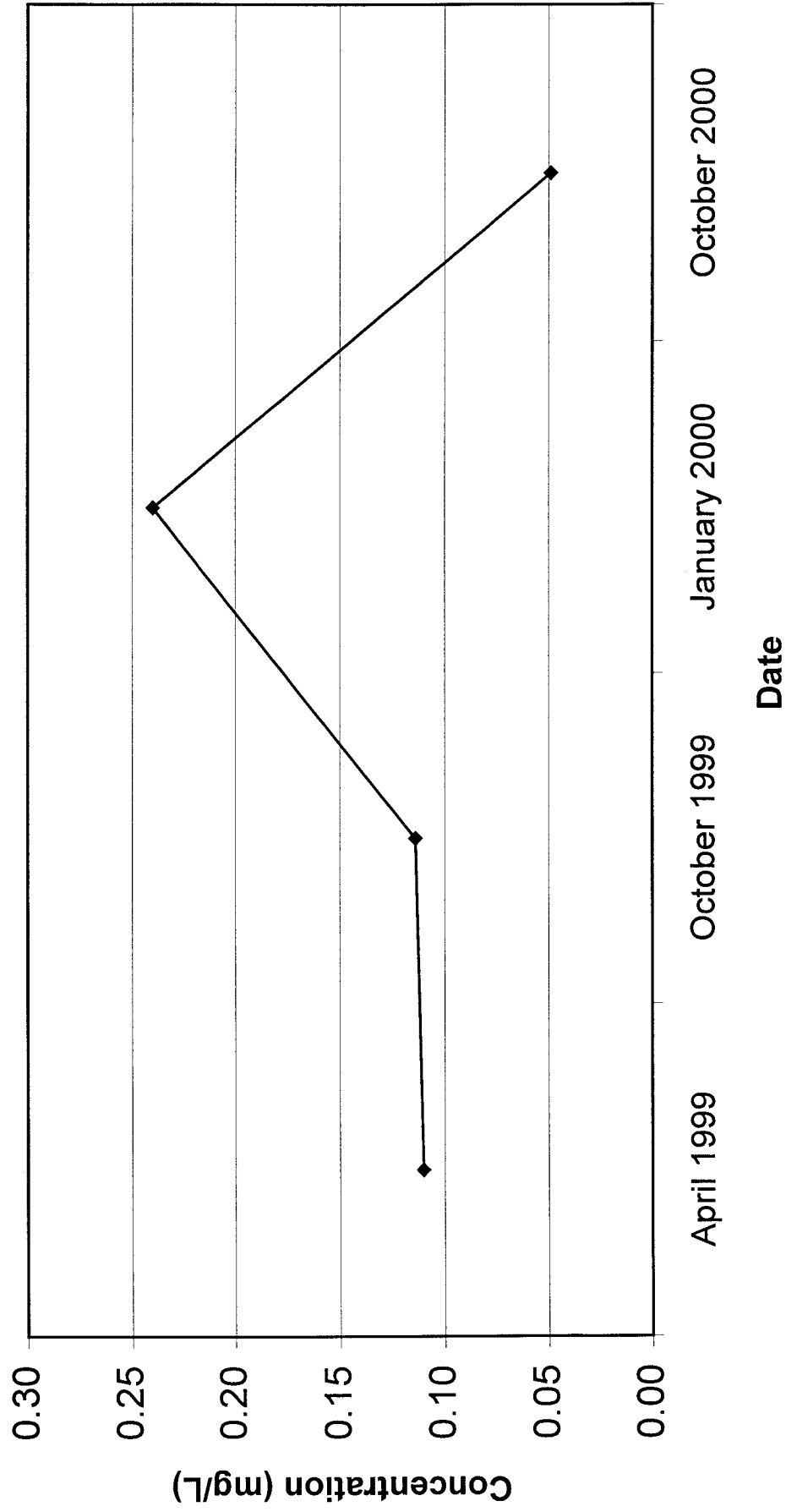


Figure 8

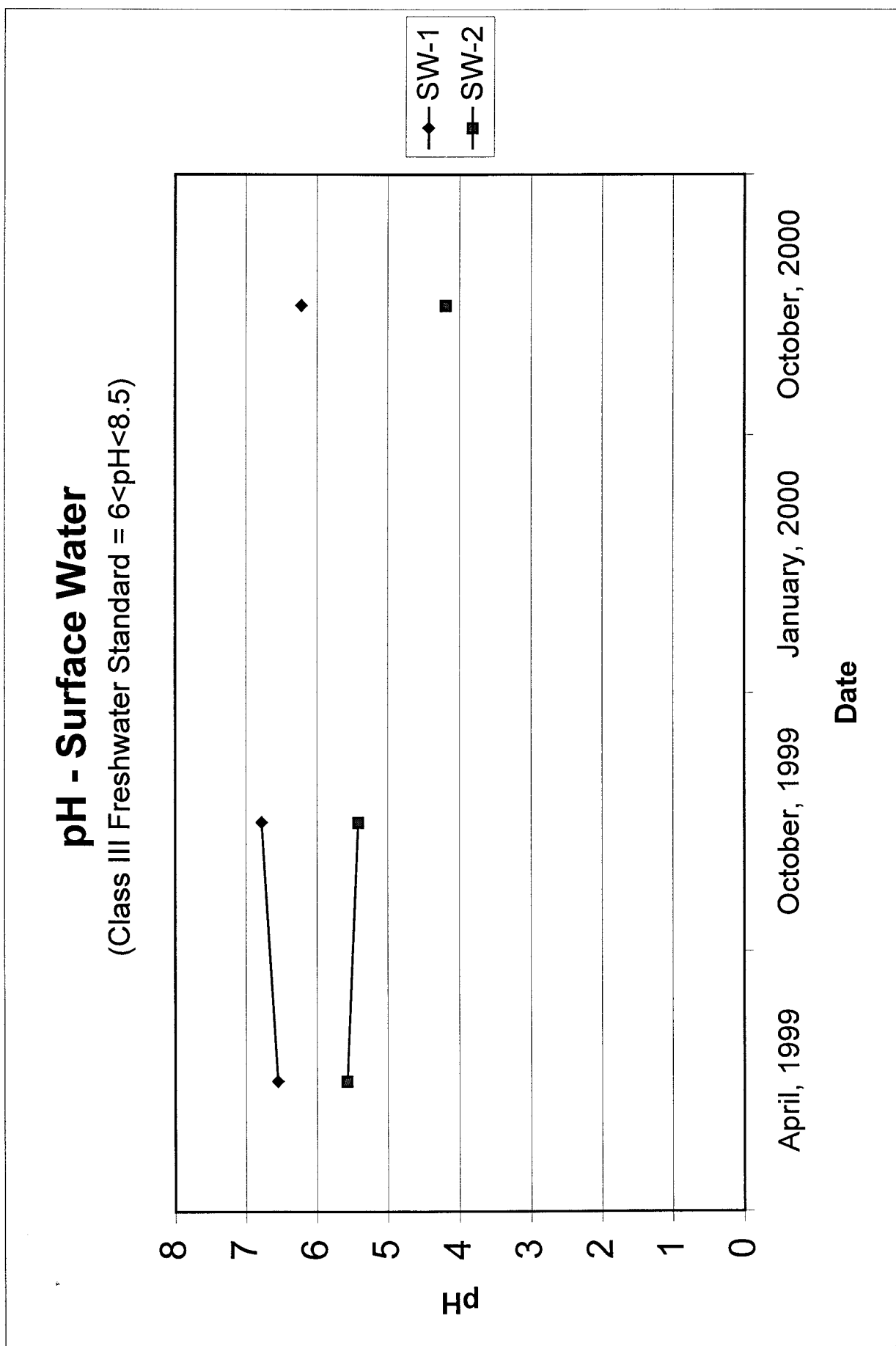


Figure 9

Total Iron - Surface Water

(Class III Freshwater Standard = 1 mg/L)

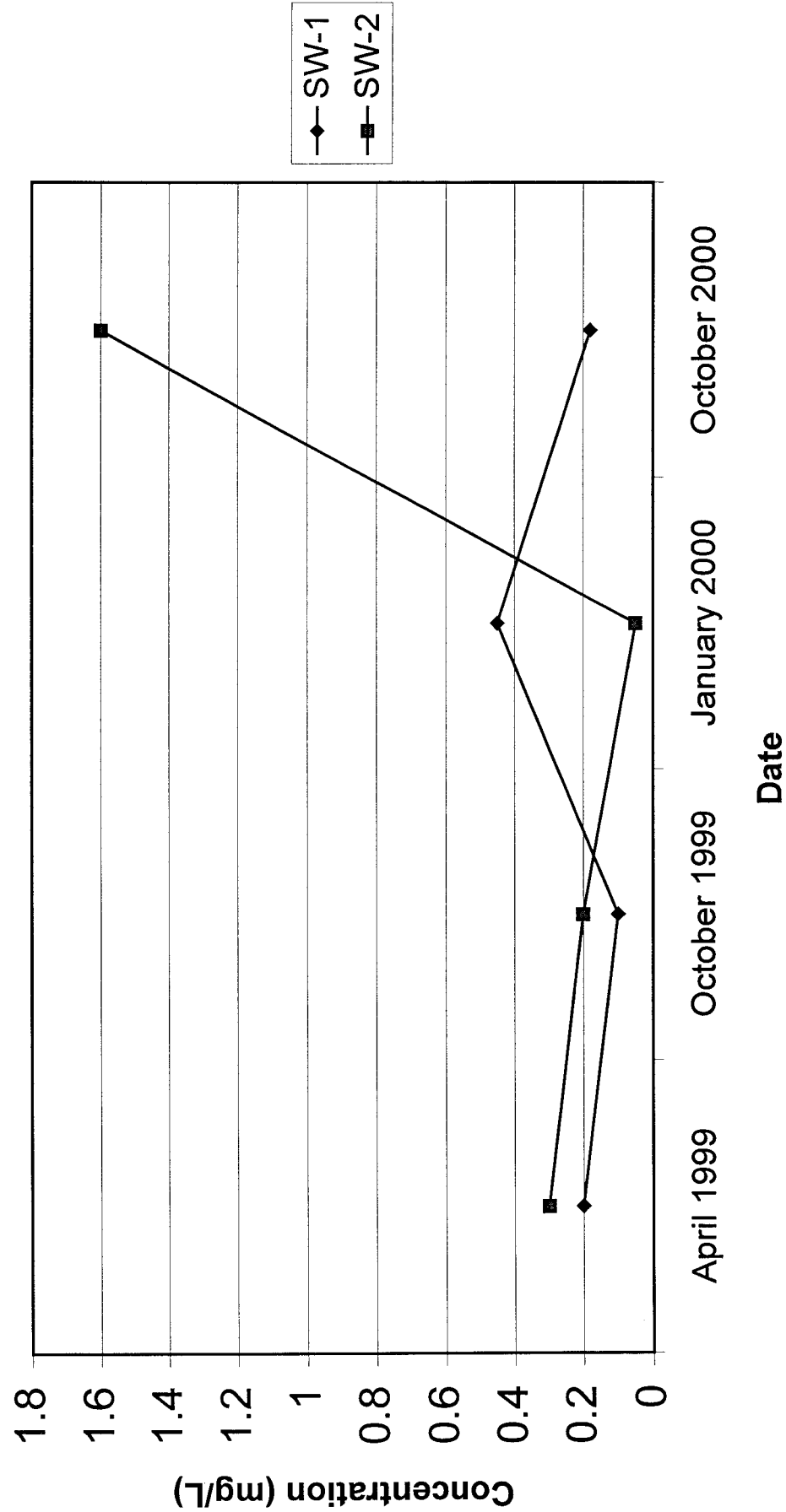


Figure 10

LCS Total Metal Concentrations - SW 846 Analyses

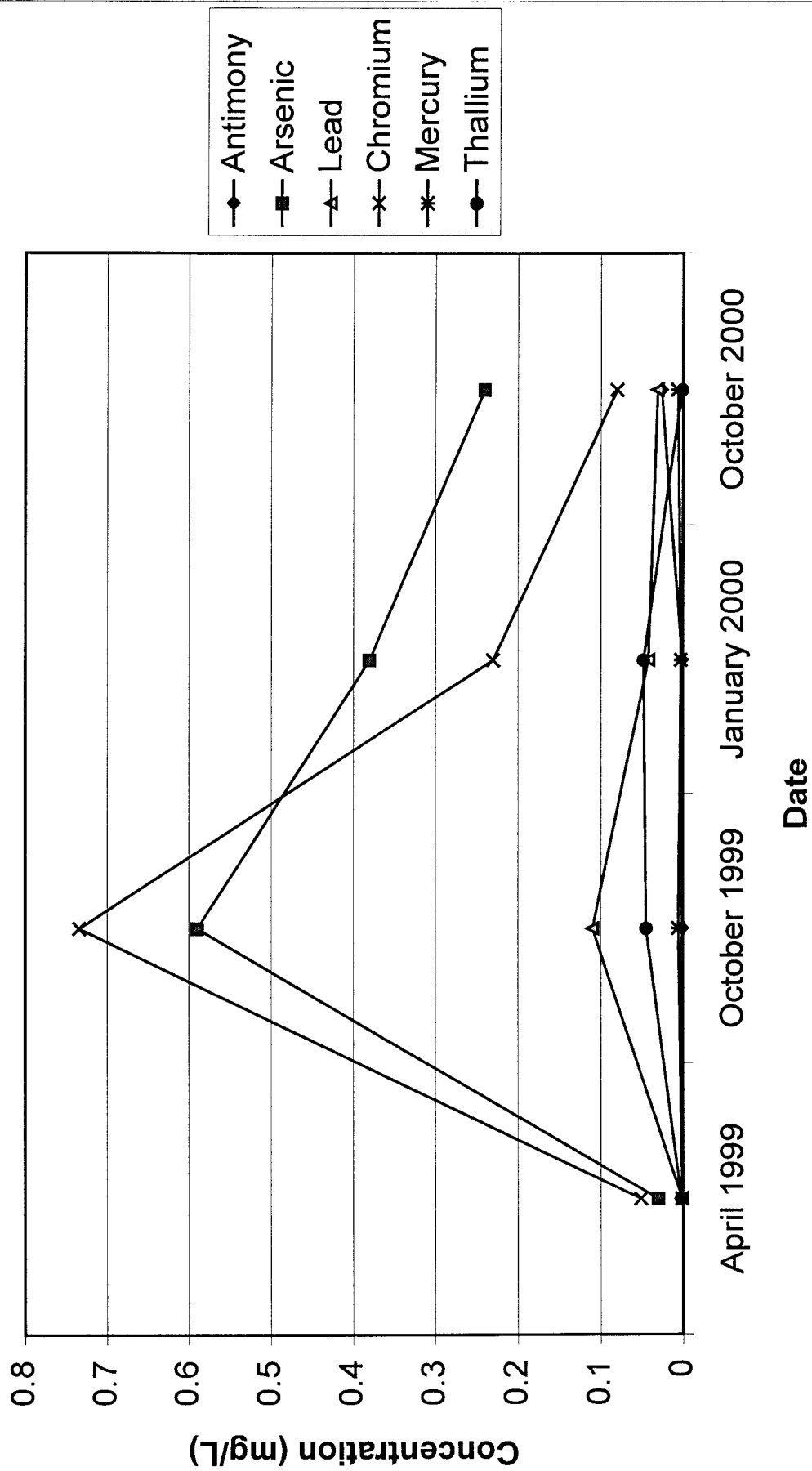


Figure 11 (a)

LCS Total Metal Concentrations - SW 846 Analyses

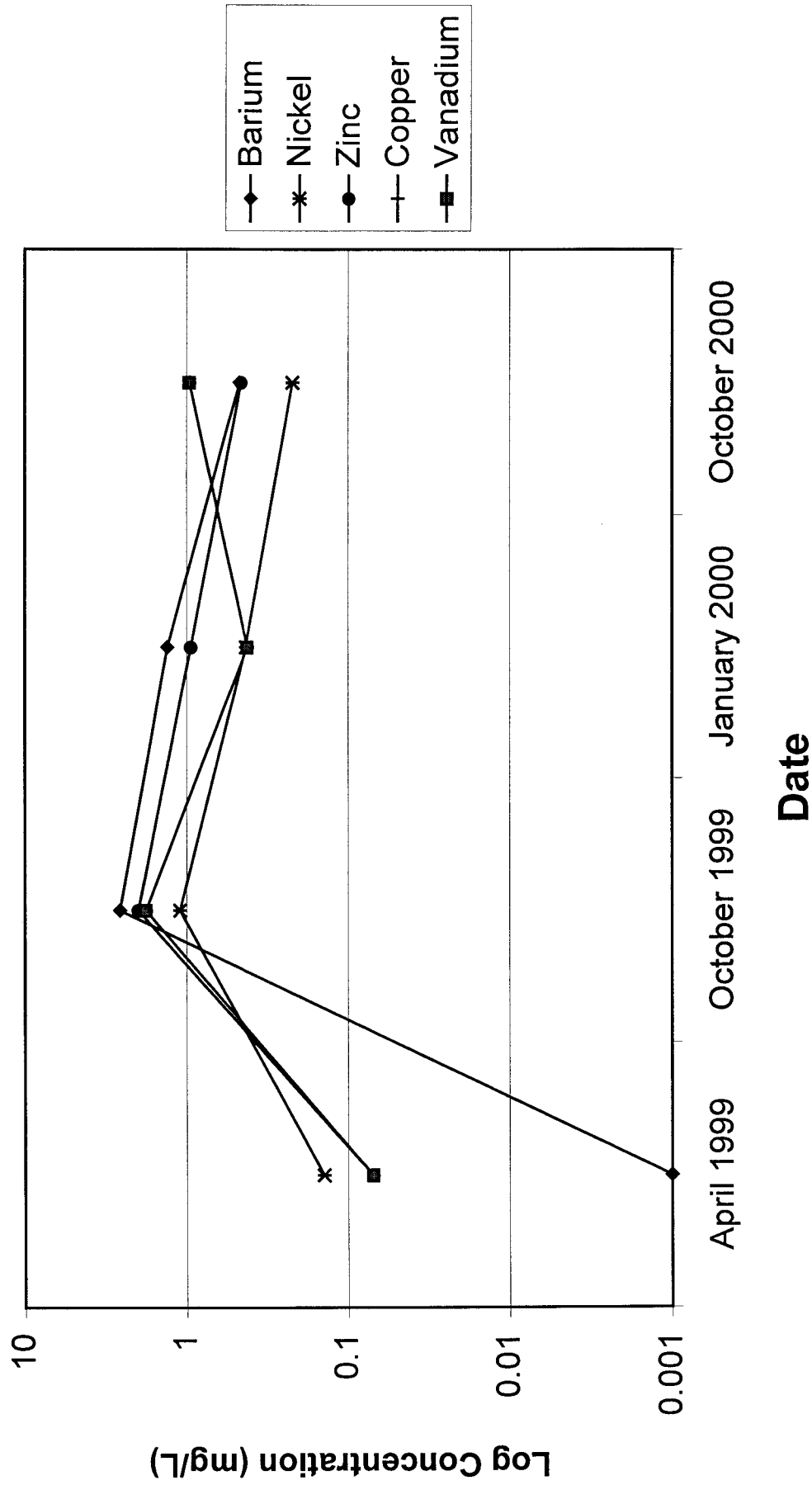


Figure 11 (b)

LCS Total Metal Concentrations - SW 846 Analyses

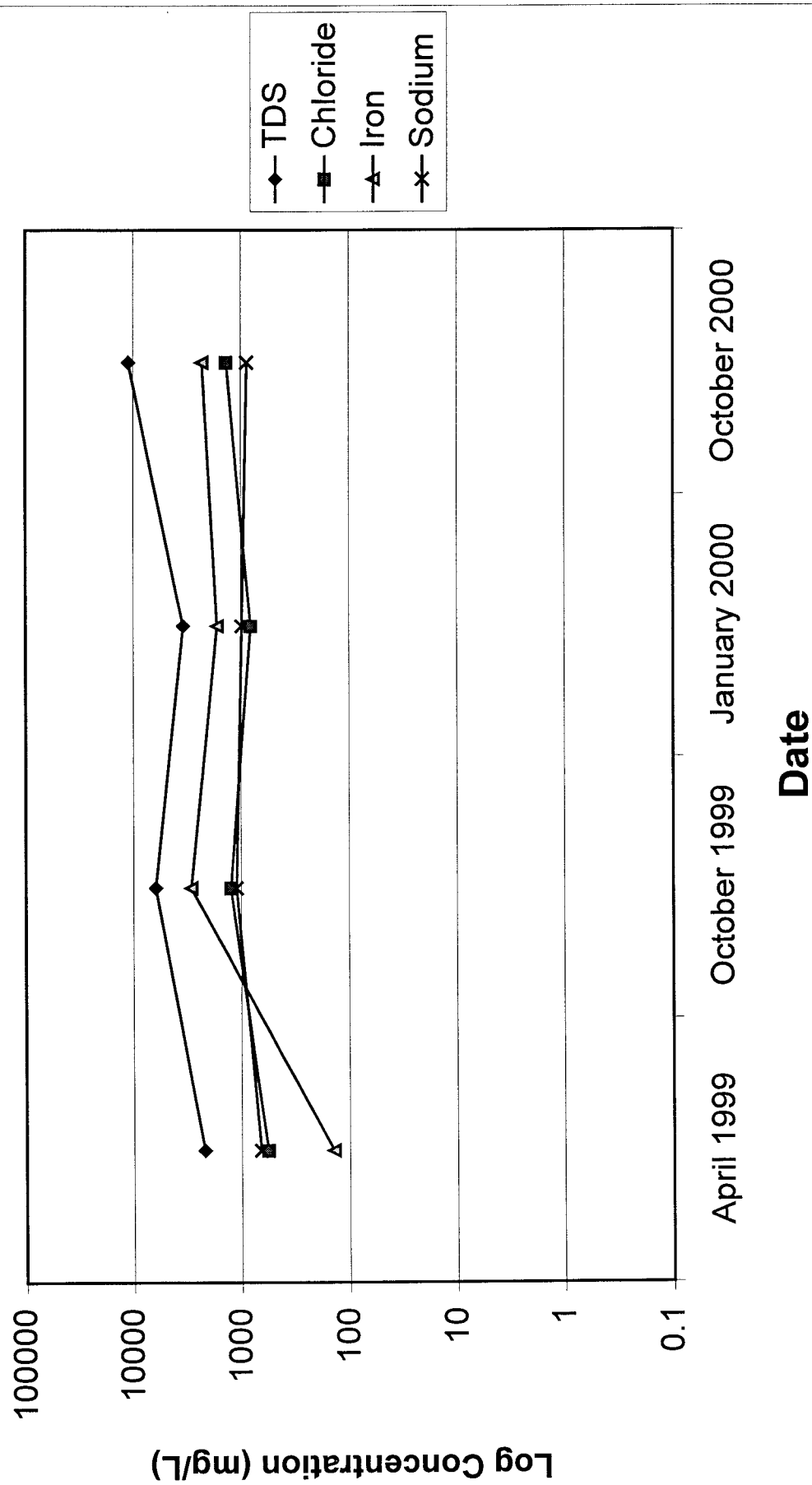


Figure 11 (c)

LDSS Total Metal Concentrations - SW 846 Analyses

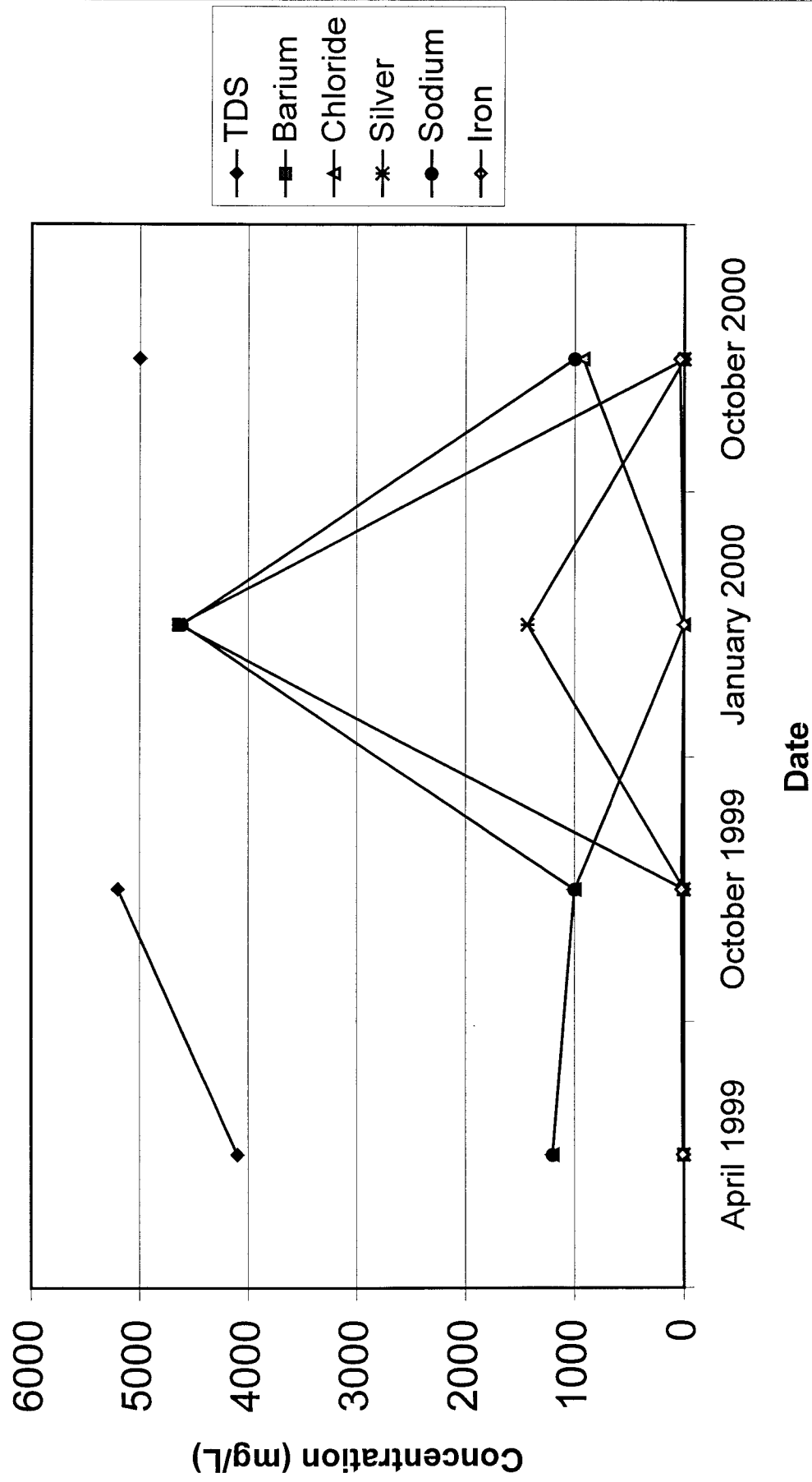


Figure 12 (a)

LDSS Total Metal Concentrations - SW 846 Analyses

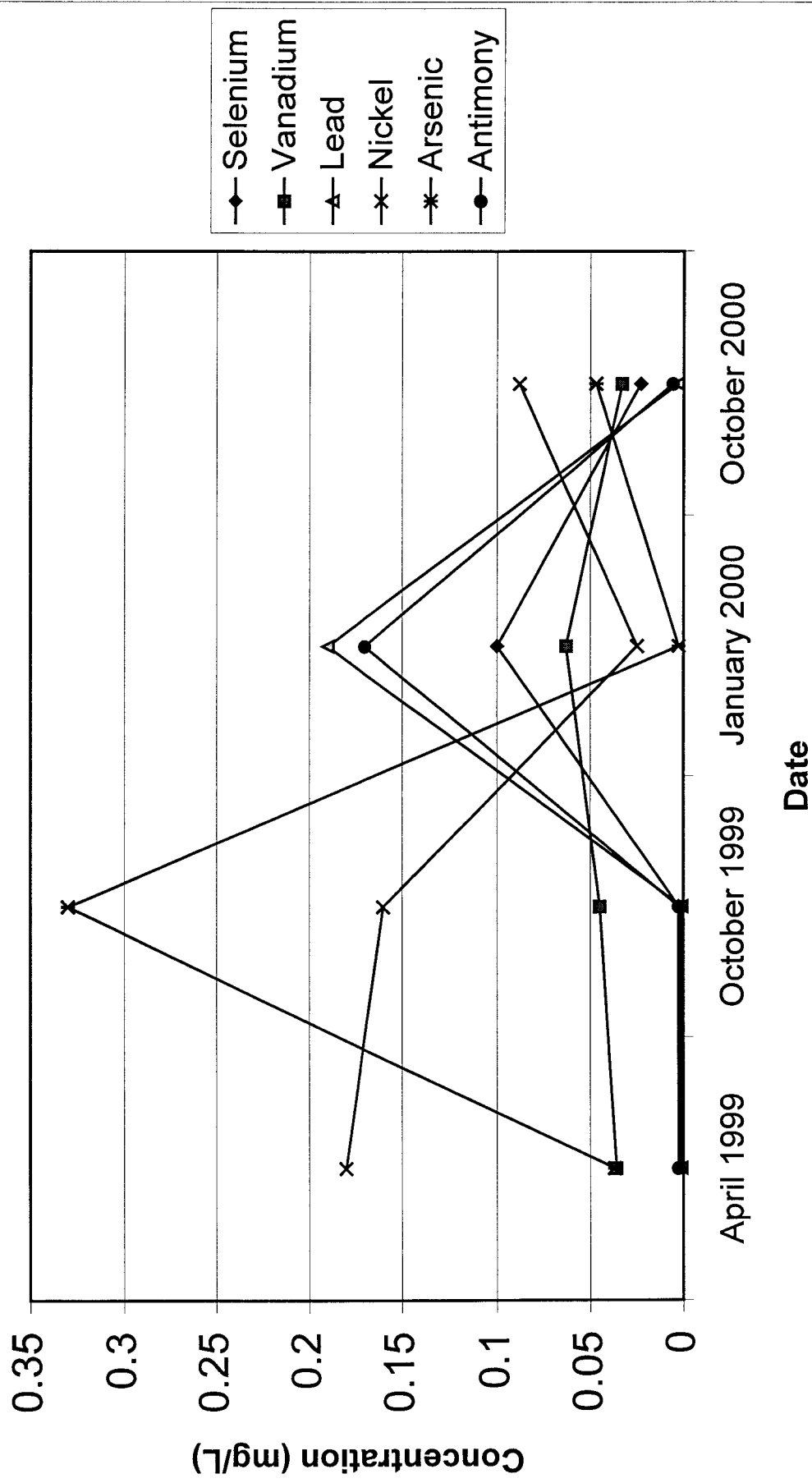


Figure 12 (b)

APPENDIX A
Analytical Parameters

BACKGROUND PARAMETERS

Field Parameters

Static water level in wells
Specific conductivity
pH
Dissolved oxygen
Turbidity
Temperature
Colors and sheens (by observation)

Laboratory Parameters

Total ammonia - N
Chlorides
Iron
Mercury
Nitrate
Sodium
Total Dissolved Solids
(TDS)
Those parameters listed in
40 CFR Part 258 Appendices
I and II

— ATTACHMENT 2 —

SEMI-ANNUAL PARAMETERS

Field Parameters

Static water level in wells
Specific conductivity
pH
Dissolved oxygen
Turbidity
Temperature
Colors and sheens (by observation)

Laboratory Parameters

Total ammonia - N
Chlorides
Iron
Mercury
Nitrate
Sodium
Total Dissolved Solids
(TDS)
Those parameters listed in
40 CFR Part 258 Appendix I

— ATTACHMENT 3 —

SURFACE WATER PARAMETERS

Field Parameters

Specific conductivity
pH
Dissolved oxygen
Turbidity
Temperature
Colors and sheens (by observation)

Laboratory Parameters

Unionized ammonia N
Total hardness
Biochemical oxygen
demand (BOD5)
Copper
Iron
Mercury
Nitrate
Zinc
Total dissolved solids
(TDS)
Total organic carbon
(TOC)
Fecal Coliform
Total phosphates
Chlorophyll A
Total Nitrogen
Chemical oxygen demand
(COD)
Total suspended solids
(TSS)
Those parameters listed in
40 CFR Part 258 Appendix I

SPECIFIC CONDITIONS:

c. Leachate collected from the landfill shall be transported to the Buckman Wastewater Treatment Facility. The owner or operator shall obtain approval from the Department prior to disposing leachate to another wastewater treatment facility.

CMS d. The overflow prevention system and the exposed exterior of all leachate storage tanks shall be inspected weekly. If the inspection reveals a tank or equipment deficiency, leak, or any other deficiency which could result in failure of the tank to contain the leachate, remedial measures shall be taken immediately to correct the deficiency. Inspection reports shall be maintained and made available to the Department upon request for the lifetime of the liquid storage system.

CMS e. Sludge or solids taken from the leachate storage tanks, whenever the storage tanks are drained for routine maintenance, inspections, or repair, shall have a hazardous waste determination performed for metals and organics in accordance with 40 CFR 262.11 and FAC Rule 62-730.160. The sludge and solids shall be disposed of in at a permitted facility, based on the results of the testing performed.

f. The Permittee shall perform routine maintenance of the leachate collection and removal system and all associated structures, to ensure proper operation of the system.

g. The Permittee shall, in an appropriate manner, clean out the leachate collection system if and when obvious signs of obstruction(s) are exhibited.

h. Leachate recirculation is not authorized under this permit renewal; however, the Permittee may request to modify the permit to allow leachate recirculation.

CMS 44. **Leachate Monitoring.** Leachate shall be sampled semi-annually in conjunction with the groundwater monitoring schedule specified in Specific Condition Number 41o. A composite sample will be taken from the drain valve of each of the five (5) leachate collection system storage tanks (Tanks 1 thru 5) and one (1) sample shall be taken from the drain valve of the leachate detection system storage tank (Tank 6) and shall be analyzed for the following parameters:

Field Parameters

Specific conductivity
pH
Dissolved Oxygen
Colors, sheens

Laboratory Parameters

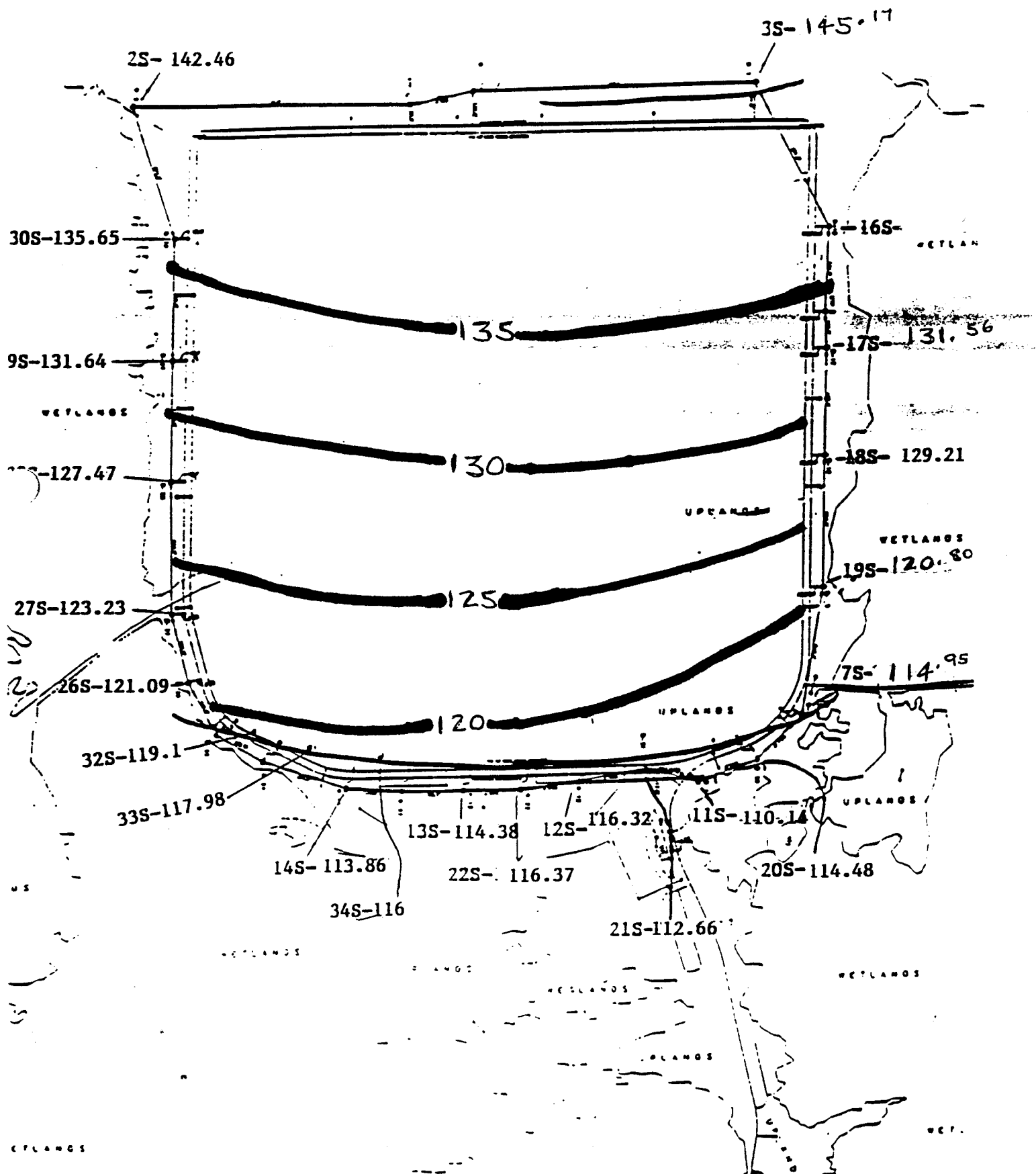
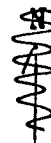
Total ammonia - N
Nitrate
Bicarbonate
Chlorides
Iron
Mercury
Sodium
Total Dissolved Solids (TDS)
Those parameters listed in 40CFR
Part 258, Appendix I

APPENDIX B
Potentiometric Maps

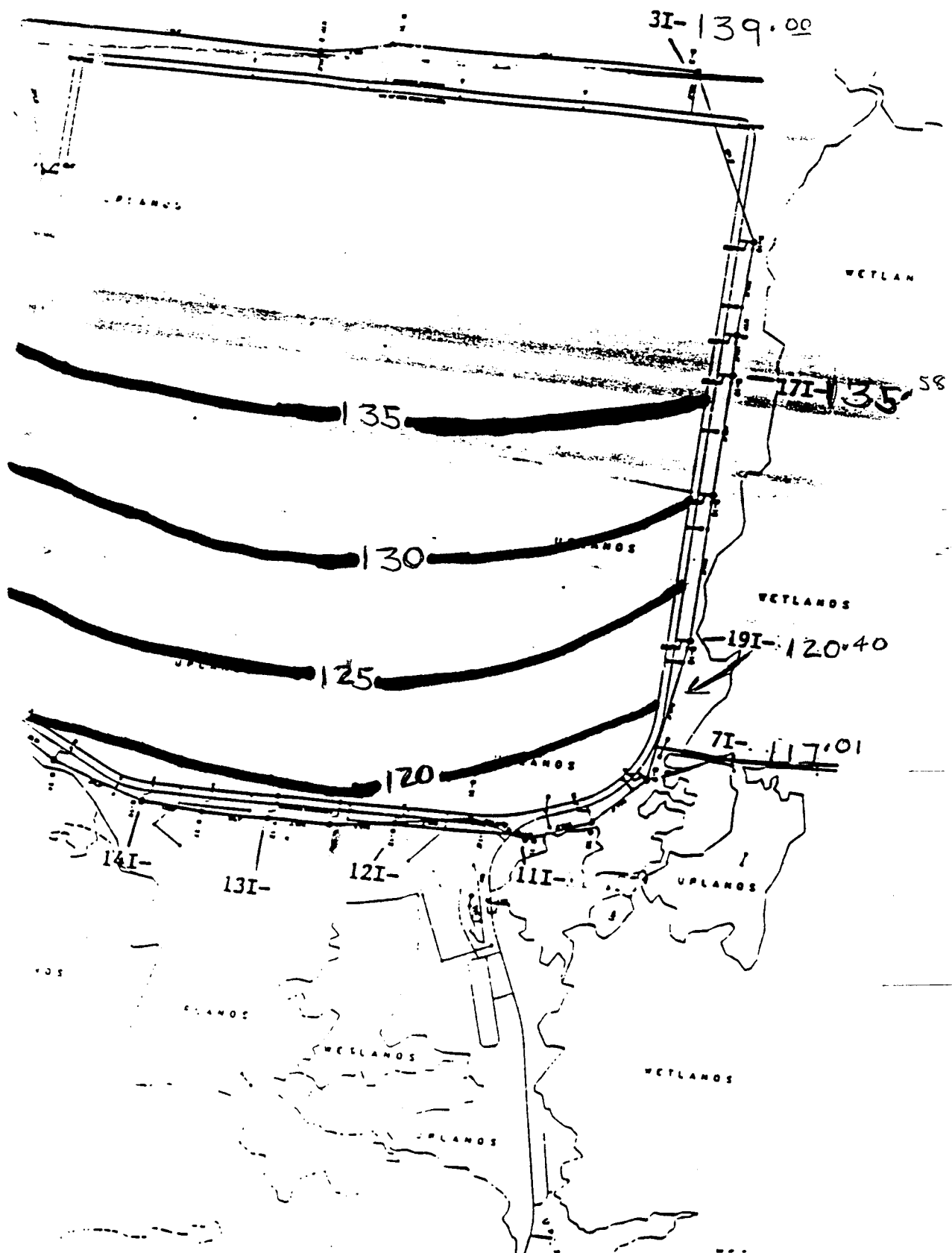
TRAIL RIDGE LANDFILL

SHALLOW GROUND WATER CONTOUR MAP

(APRIL 1999)



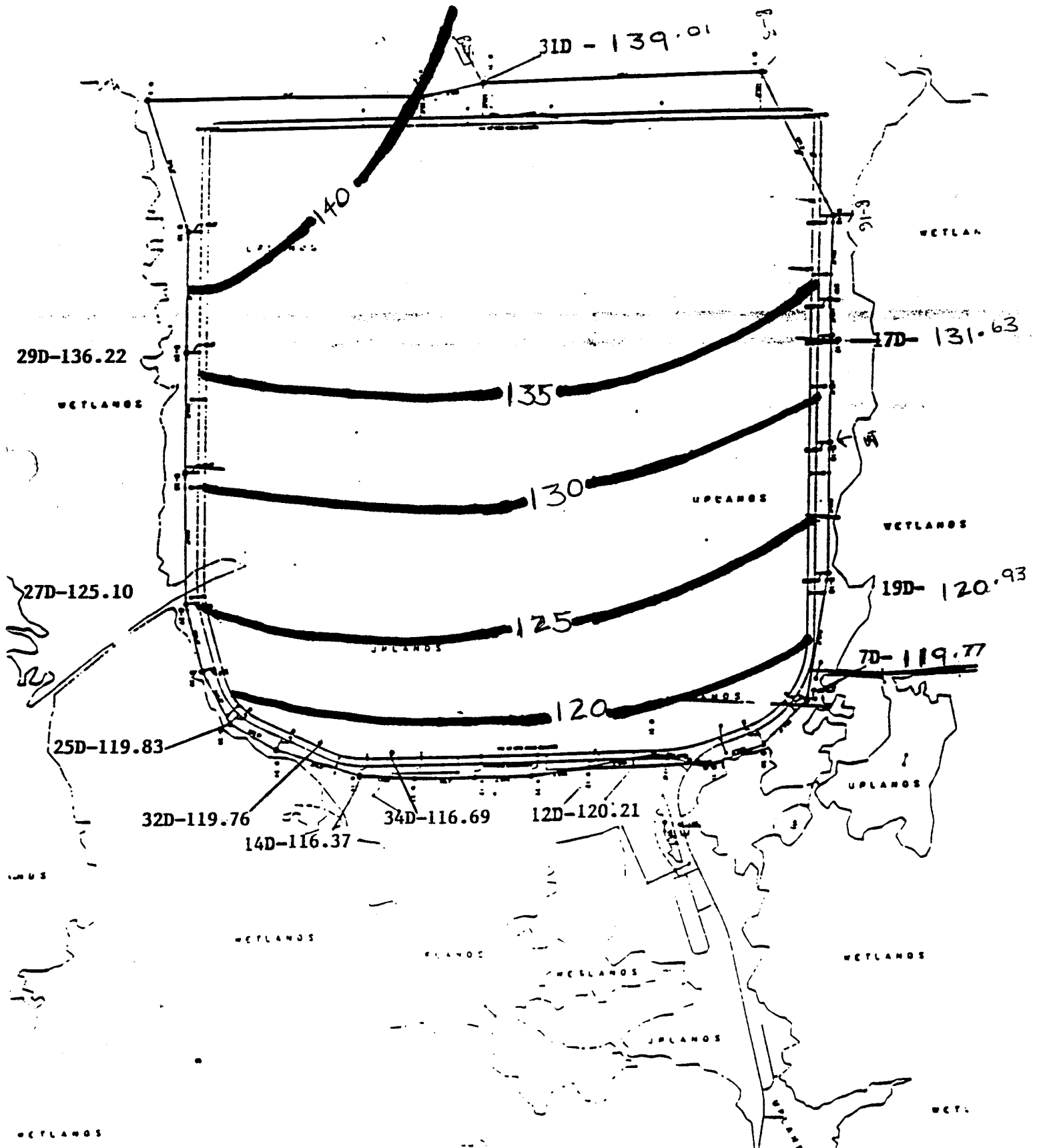
TRAIL RIDGE LANDFILL
INTERMEDIATE GROUND WATER CONTOUR MAP
(APRIL 1999)



TRAIL RIDGE LANDFILL

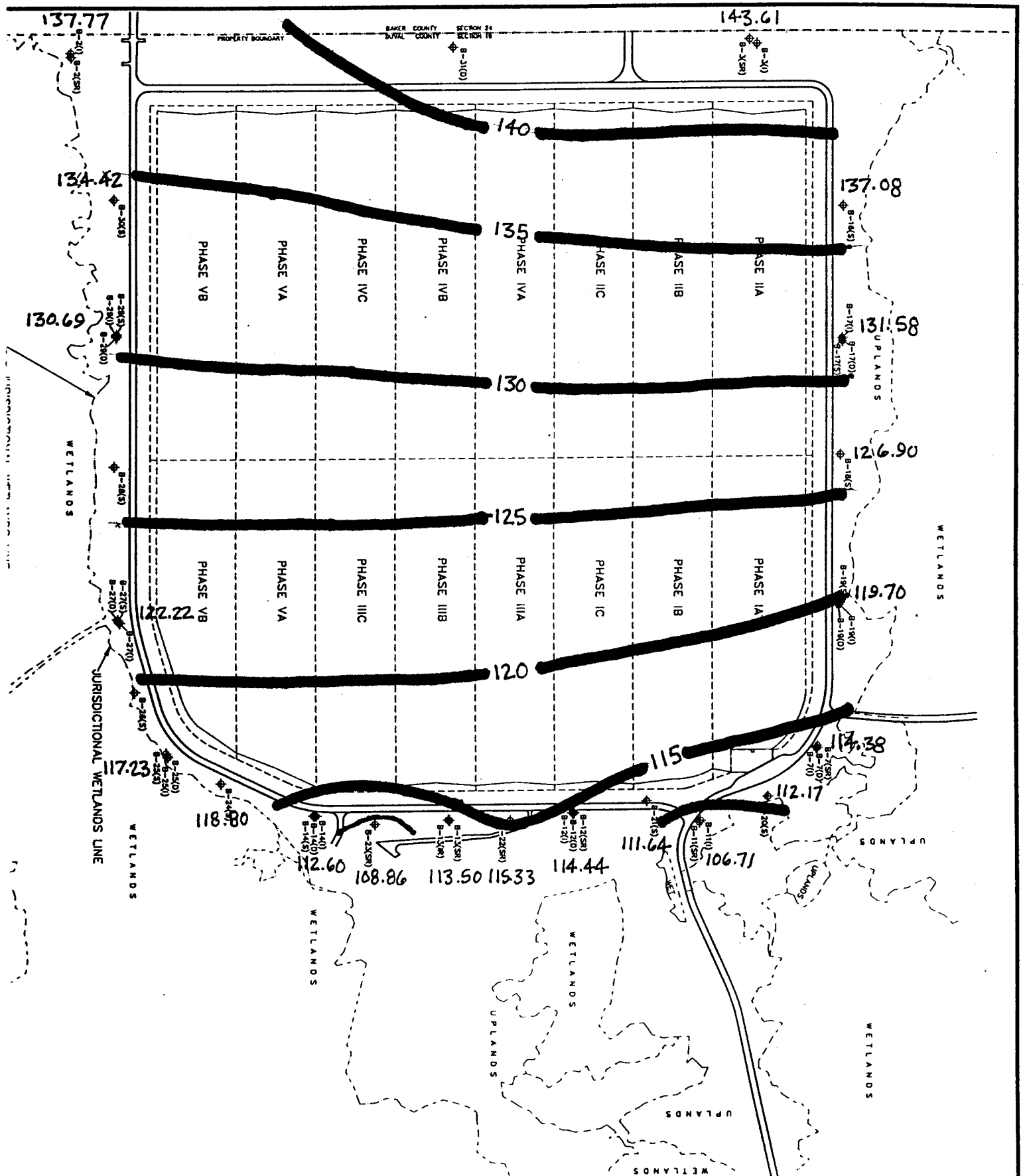
DEEP GROUND WATER CONTOUR MAP

(APRIL 1999)



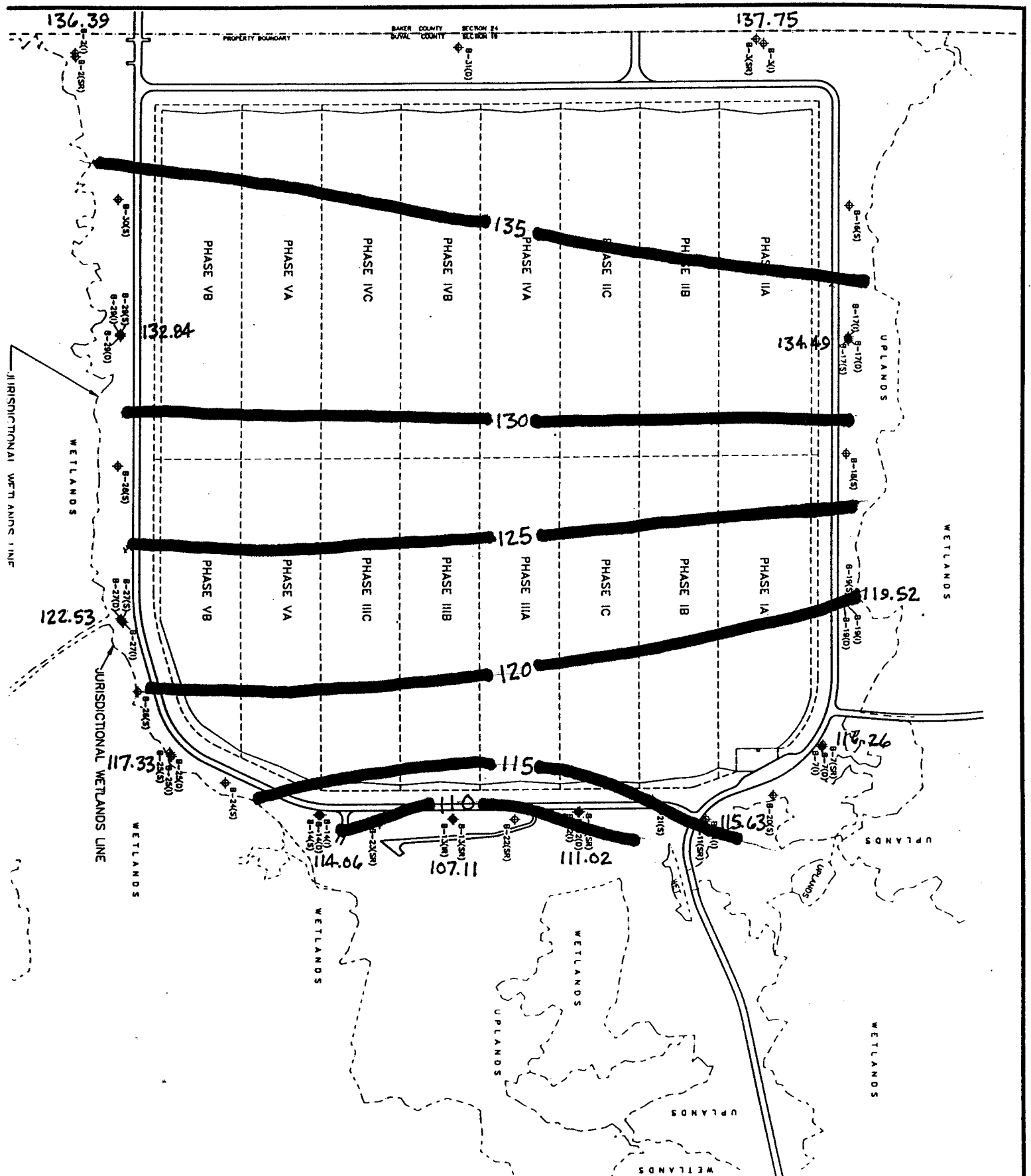
TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (SHALLOW WELLS)

(OCTOBER 1999)



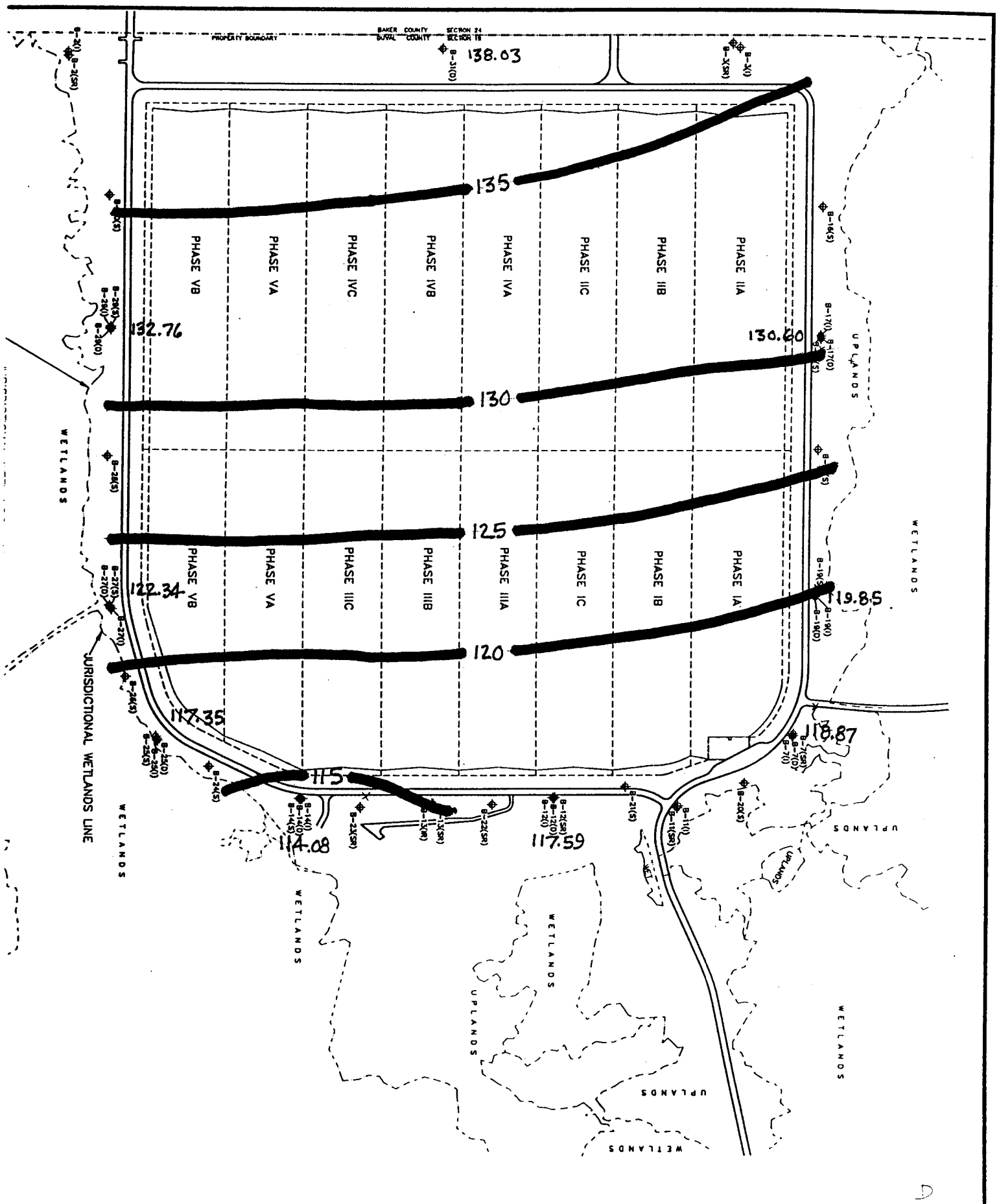
TRAIL RIDGE LANDFILL
GROUNDWATER COUNTOURS (INTERMEDIATE WELLS)

(OCTOBER 1999)



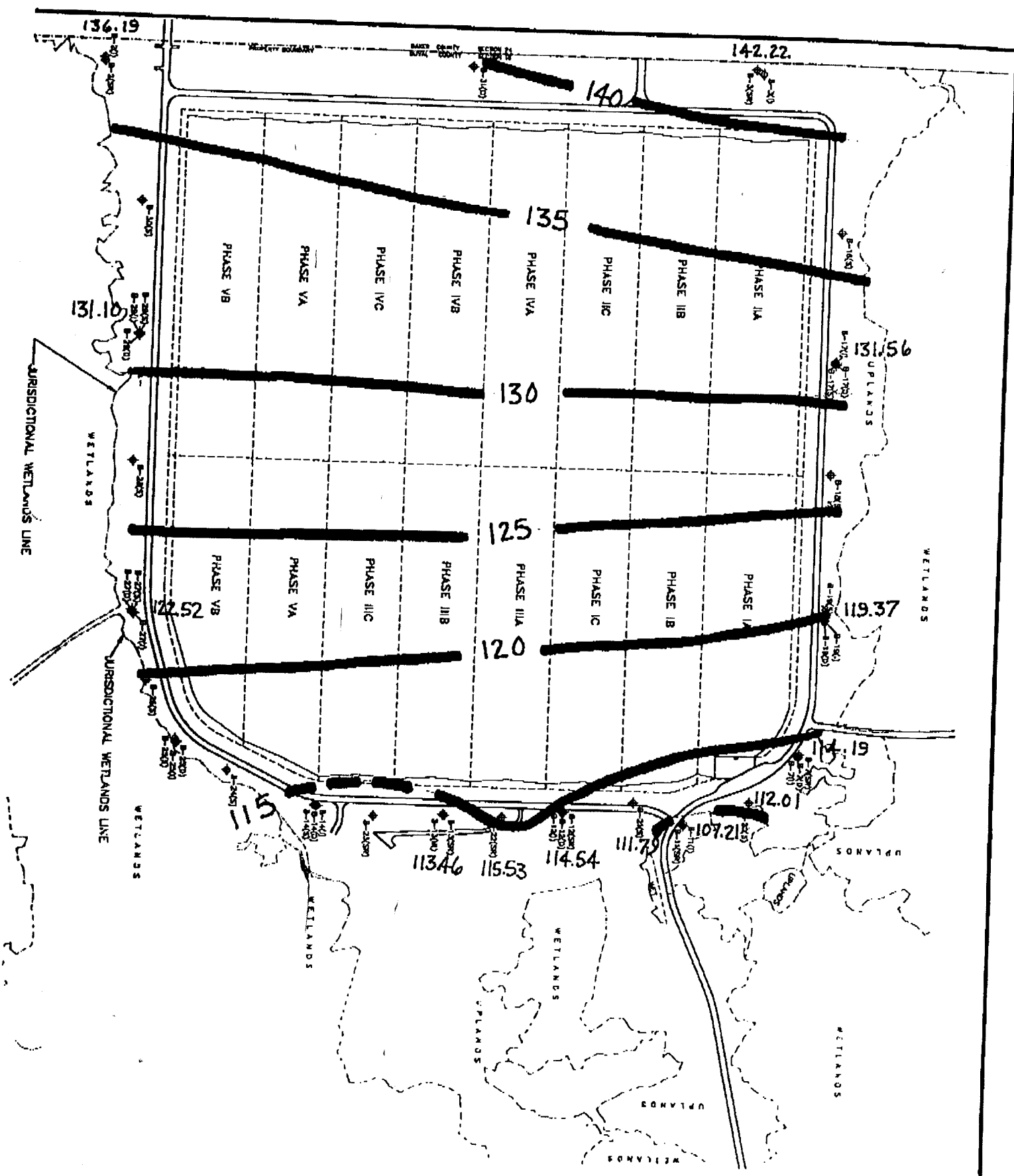
TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (DEEP WELLS)

(OCTOBER 1999)



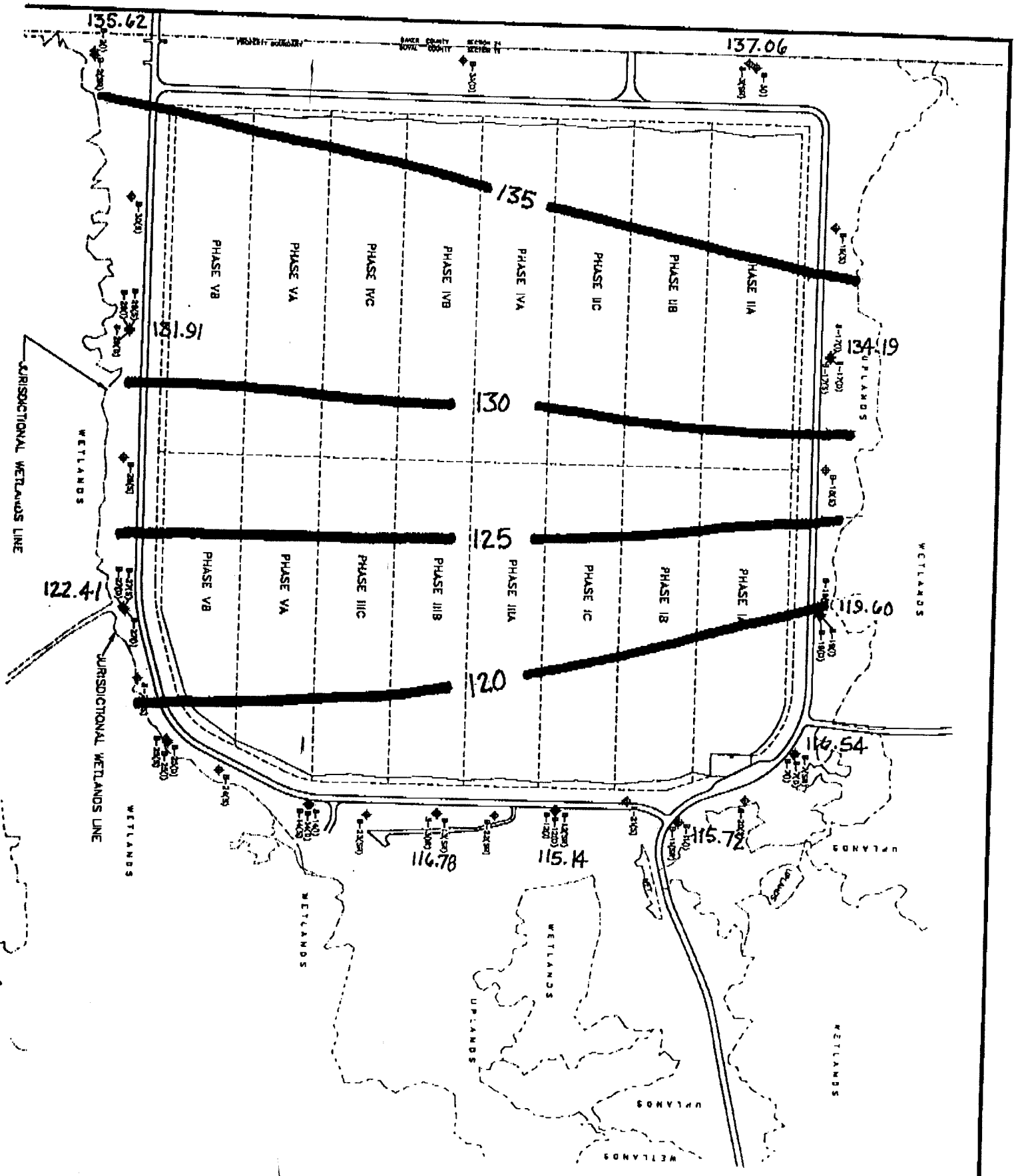
TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (SHALLOW WELLS)

(JANUARY 2000)

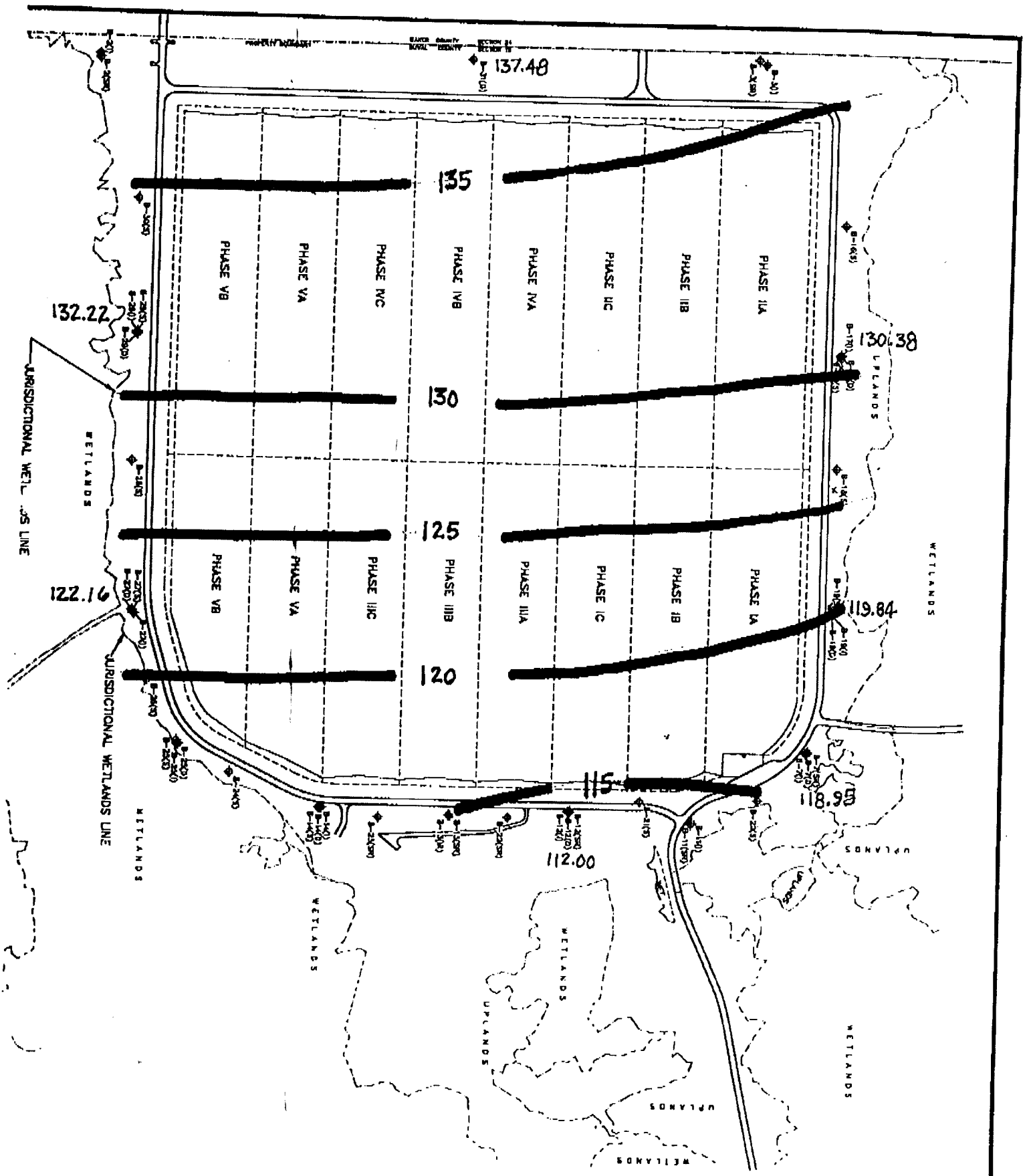


TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (INTERMEDIATE WELLS)

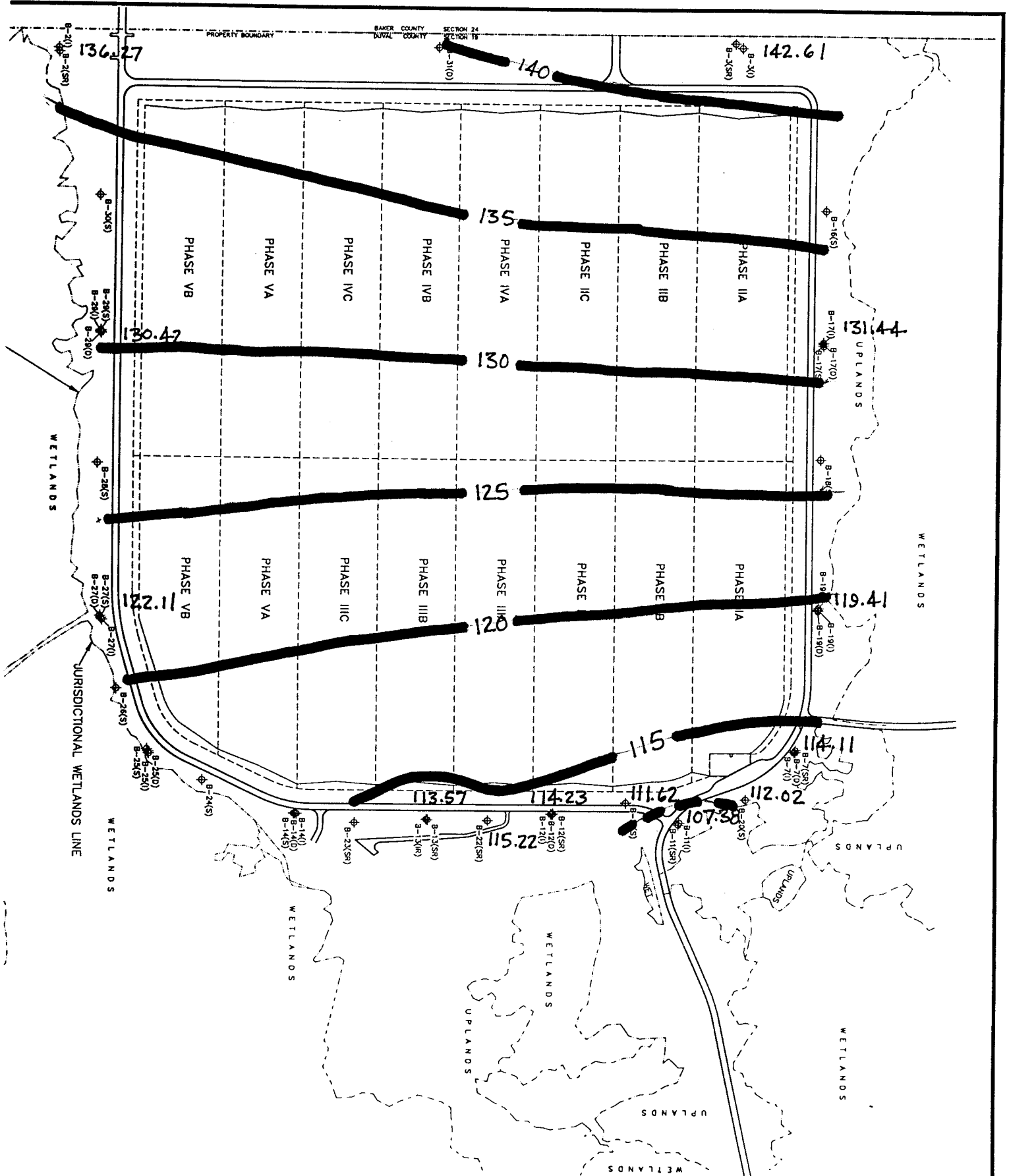
(JANUARY 2000)



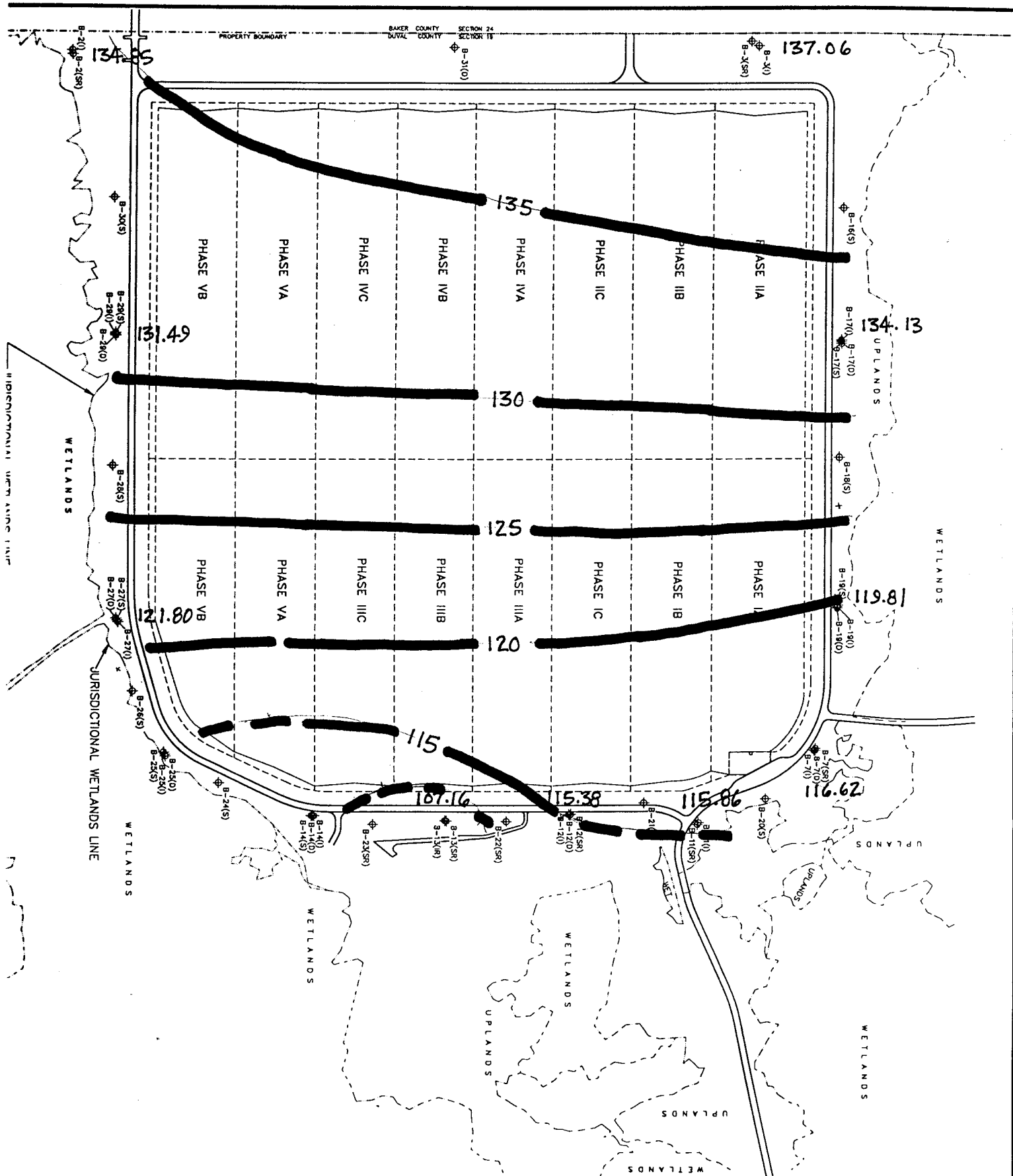
(JANUARY 2000)



TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (SHALLOW WELLS)
(9/7/2000)



TRAIL RIDGE LANDFILL
GROUNDWATER CONTOURS (INTERMEDIATE WELLS)
(9/7/2000)



(9/7/2000)

