356005

DUNN
GEOSCIENCE CORP.

5 NORTHWAY LANE NORTH •
LATHAM, NEW YORK 12110
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RECEIVED
JUN 13 1986
NYS DEC
REGION 3

SETTLING POND AREA GROUNDWATER QUALITY ASSESSMENT

NORTHEAST SOLITE CORPORATION
MOUNT MARION, NEW YORK

Prepared for:

George E. Eure
Northeast Solite Corporation
Mt. Marion, New York

Prepared by:

Dunn Geoscience Corporation

Sander I. Bonvell

Sander I. Bonvell
Senior Chemist

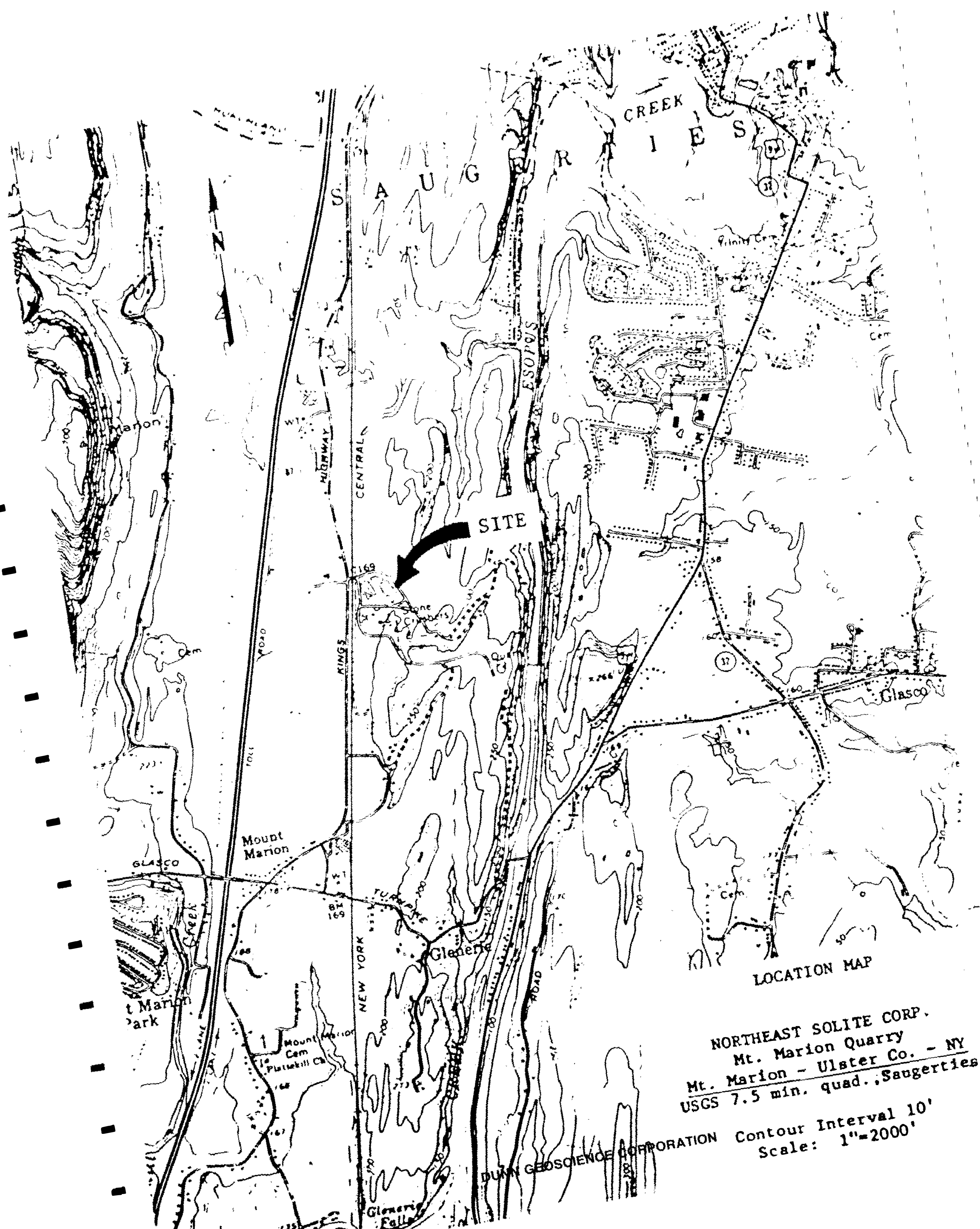
Reviewed by:

J P Behan Jr

James P. Behan, Jr., P.E.
Director, GeoEngineering

Date:

June 13, 1986



LOCATION MAP

NORTHEAST SOLITE CORP.
Mt. Marion Quarry
Mt. Marion - Ulster Co. - NY
USGS 7.5 min. quad.,Saugerties

Contour Interval 10'
Scale: 1"=2000'

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1.0 CONCLUSIONS

Figure 1 shows a correlation of temporal fluctuations of chlorides, sulfates and conductivities in the settling pond and downgradient monitoring wells.

The elevated levels of metals observed in the settling pond have not been observed in the downgradient monitoring wells.

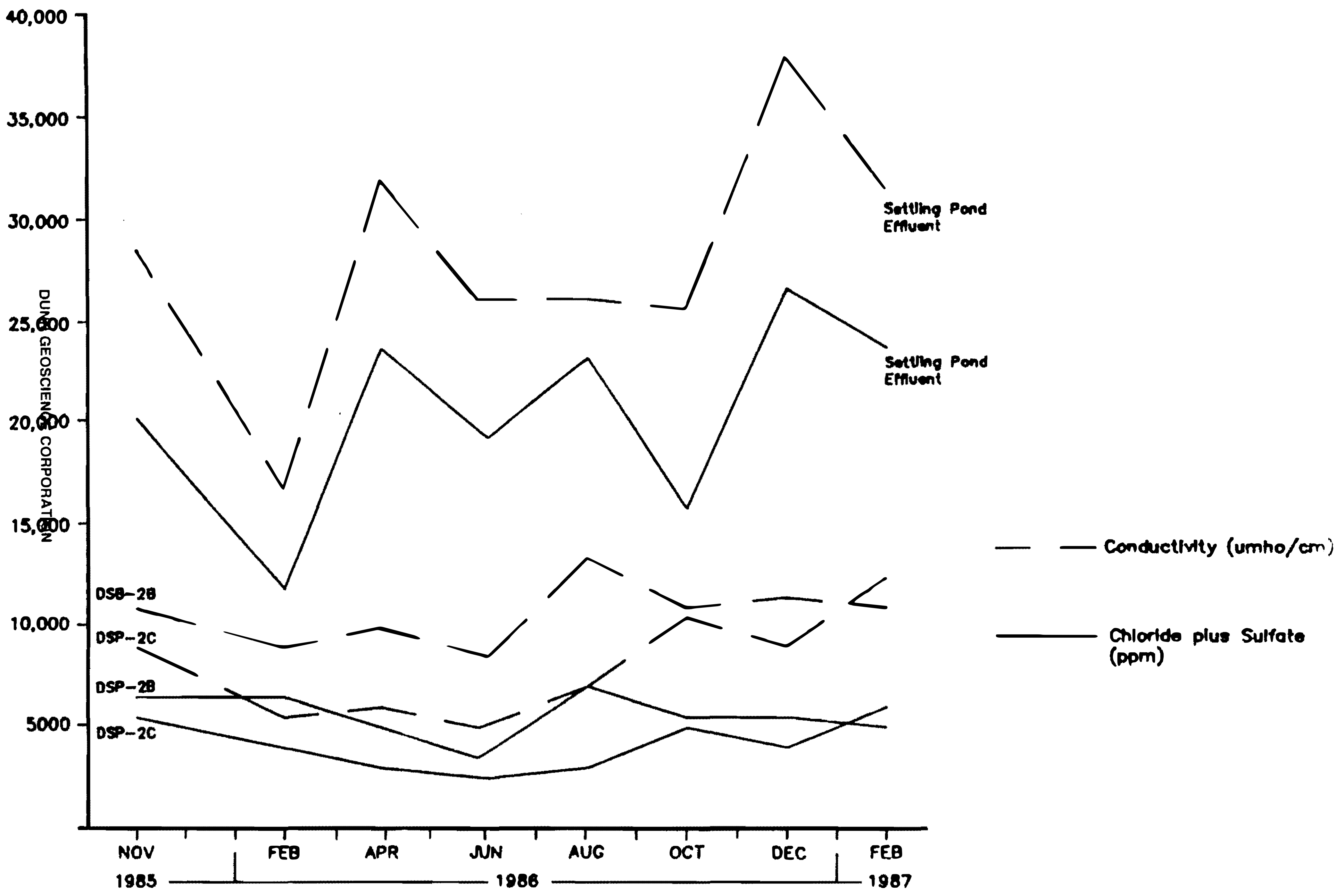
The pH in the settling pond ranges between 2.5 and 3.5 with an occasional rise to near neutral or slightly alkaline levels. Downgradient groundwater pH levels range between approximately 6.5 and 7.4; this appears to be natural as exhibited by similar upgradient pH values.

2.0 RECOMMENDATIONS

We recommend quarterly groundwater sampling with field filtering as performed previously of monitoring wells USP-1A, DSP-2B, -2C, -2D and -3 with the following chemical analyses:

pH
Conductivity
Chlorides
Sulfates
Arsenic
Selenium
Lead
Chromium

Quarterly sampling of well DSP-4 with analysis for pH, conductivity and manganese is recommended in view of the consistently elevated manganese levels. In the event that there is significant increase in conductivity or decrease in pH, a full analytical protocol identical to that performed for well DSP-2B will be instituted.

40,000
35,000
30,000
25,000
20,000
15,000
10,000
5000
DUNN GEOSCIENCE CORPORATION
Settling Pond Effluent
Settling Pond Effluent
DSB-2B
DSP-2C
DSP-2B
DSP-2C
Conductivity (umho/cm)
Chloride plus Sulfate (ppm)
NOV
FEB
APR
JUN
AUG
OCT
DEC
FEB
1985
1986
1987

Quarterly sampling is recommended for the settling pond influent and effluent with the following total matrix analyses:

pH
conductivity
chlorides
sulfates
total dissolved solids
total suspended solids
iron
manganese
lead
arsenic
cadmium
chromium
selenium

The depth to the bottom of each well will be measured and deposits which may interfere with proper monitoring well functions will be removed by well development.

Further study of the clay in the bottom of the ponds should be done to determine the suitability of that material as a liner and to determine the extent of relining that may be necessary.

3.0 INTRODUCTION

This report presents the results of the most recent phase of investigation and monitoring at the lagoon area of the Northeast Solite Corporation (NES) site at Mt. Marion, New York. Data are presented from rounds of sampling which took place from November 1984 through February 1986. This comprises all monitoring results since the last Dunn Geoscience Corporation (DGC) summary report of December 4, 1984 entitled Lagoon Area/Groundwater Quality.

4.0 PURPOSE

The purpose of this investigation was to determine the effect that the settling ponds have on the quality of groundwater and to achieve a better understanding of the scrubber effluent/ settling pond system water chemistry.

The purpose of this report is to summarize the results of the sampling and analysis program used to monitor and assess settling pond and groundwater quality. Overall chemistries are discussed and further actions are recommended.

5.0 PERSONNEL

This report was prepared by Sander I. Bonvell, Senior Chemist, and reviewed by James P. Behan, Jr., P.E., Director, GeoEngineering, and William J. Hall, Vice President. The following subcontractor analytical laboratories were used:

- Bender Hygienic Laboratory
  Albany, New York

- Environmental Testing and Certification
  Edison, New Jersey

- Mohawk View Laboratory
  Latham, New York

- Adirondack Environmental Services
  Rensselaer, New York

- C.T. Male Associates
  Latham, New York

6.0 PROJECT SCOPE

Groundwater, surface water, settling pond sludge and scrubber effluent were analyzed to provide a broad, chemical data base.

The November 1984 round of sampling was the last in a series of such samplings and analyses that preceeded the 1985 monitoring program. All results for the 1984 program, except November's, have been previously reported. November 1984 data are presented herein.

Additions and modifications to the 1985 monitoring program (originally proposed in the December 1984 DGC report) suggested by the New York State Department of Environmental Conservation (NYSDEC) are found in Appendix A.

Groundwater monitoring included upgradient well USP-1A and downgradient wells DSP-2B, -2C, -2D, -3, -4. The inlet and outlet to the east settling pond and the scrubber effluent prior to soda ash treatment were also monitored.

7.0 ANALYTICAL RESULTS

7.1 Groundwater Quality

Table B1 (Appendix B) presents the analytical chemical results of the November 1984 round of sampling.

Tables B2 through B7 (Appendix B) present the analytical chemical results for six rounds of sampling and analysis during 1985 and February 1986.

Table B8 (Appendix B) presents a summary of groundwater elevations for seven rounds of monitoring from February 1985 through February 1986.

Graphs C1 through C8 (Appendix C) present the in-situ well measurements of conductivity at one-foot depth intervals for all site downgradient wells.

Appendix D contains analytical results for purgeable organics analyses (EPA Methods 601 and 503) performed for well DSP-2B during February 1985 and January 1986. All parameters on both sampling dates were less than 1 ug/L (ppb).

7.2 Settling Ponds Water and Scrubber Effluent Quality

Table E1 (Appendix E) contains a summary of the east settling pond influent and effluent inorganic analyses.

Table E2 (Appendix E) contains a summary of east settling pond influent analyses for Aroclors and Extractable Hydrocarbon Scan.

Table E3 (Appendix E) contains a summary of the scrubber effluent quality prior to treatment by soda ash.

7.3 Settling Pond Sediment Quality

Table F1 (Appendix F) presents Extraction Procedure Toxicity analyses metals results for composited, dredged, pond bottom sediments collected from the east settling pond during February and April 1985.

8.0 ANALYTICAL DATA INTERPRETATION

8.1 Groundwater Quality

There continues to be an elevated specific conductance attributable to the high levels of chlorides and sulfates observed in the wells.

Downgradient groundwater pH levels range between approximately 6.5 and 7.4 except for a one time value of 6.2 at DSP-4. This appears to be natural as exhibited by similar upgradient pH values.

There is no indication of metals contamination in the groundwater. There is an occasional slight excess of iron or manganese just beyond allowable limits set for secondary standards (NYSDEC Part 703 Groundwater Standards), but these concentrations are within acceptable analytical precisions. The only exception to this is the manganese levels observed in well DSP-4. However, since high levels of chlorides and sulfates are not present in DSP-4, the manganese levels cannot originate from the lagoons and may originate from previous leaching from the on-site, upgradient coal pile.

Groundwater from DSP-2B analyzed for organics has not shown the presence of any purgeable organic parameters at or above the method detection limit of 1 ug/L (ppb).

8.2 Settling Pond Water Quality

The settling pond maintains high levels of chlorides and sulfates, with sulfate concentrations significantly higher than those of chloride. These relative concentrations are reversed from what has been observed historically.

The pond also contains significant concentrations of lead, arsenic, selenium, iron, chromium, manganese and occasionally cadmium. When the pH of the effluent is raised beyond 6.3 it appears that lead and chromium concentrations are greatly attenuated to a point below method detection limits and arsenic levels decrease significantly but still remain at elevated levels (i.e., greater than groundwater standards). However, selenium levels do not appear to be affected by pH changes and it is uncertain from the limited data at what levels iron and manganese become pH dependent or rely on physical characteristics for settling/precipitating. In most rounds of sampling there were no significant differences between influent and effluent metals concentrations due to the low pH of the pond water.

Analyses for Aroclors and Extractable Hydrocarbon Scans showed no presence of either parameter at or above the method detection limits.

8.3 Settling Pond Sediment Quality

No metals contamination was present in the pond sediments as evidenced by the extremely low level or non-existent concentrations of Extraction Procedure Toxicity results.

9.0 CLAY LINER OPTION

Accumulated and evaluated available information about the site obtained from boring logs, test pit sampling and visual inspection of the site indicate that there exists between the polishing pond and the fines storage area a suitable source of clay borrow that could be used as pond lining material. The required amount of borrow is available just northeast of the pond.

Satisfactory performance of the clay liner system will depend on several parameters. These are:

1. The liner must be chemically compatible with lagoon effluent and sludge.

2. The liner must be stable when constructed to the geometry of the lagoons, and must resist damage during periodic cleaning and extreme weather conditions.

3. The liner must maintain its design coefficient of permeability over its intended design life.

4. The liner must accomodate exposure to occasional extreme chemical changes in effluent.

Testing will be done prior to the construction of pond liners to compare clay densities and permeabilities of the clay in an existing pond bottom and potential borrow clays, and will include:

1. Troxler nuclear density tests to a depth of six inches over the entire accessible pond floor,

2. Dual falling head infiltration tests using clean water and treated scrubber effluent water,

3. One undisturbed Shelby tube sample collected for back-pressure, flexible membrane permeability testing with clean water, and

4. Swell tests to show short term effects of leachate on clay structure and density.

This testing program will determine how the clay in the existing pond bottom has been effected by long-term exposure to pond liquid and will help determine the extent of pond relining that may be necessary.

The following construction specifications describe appropriate methods for development of a compacted clay liner for containment of settling pond or polishing pond liquids at the Northeast Solite Corporation facility.

All borrow material shall be taken only from the prescribed borrow area. Frequent inspection of both the borrow pit and the clay stockpile will be performed by a qualified geotechnical engineer or geologist to help maintain uniformity of the liner material. Zones of clay having noticable quantities of sand, silt, or organic material shall be removed from clay stockpile.

Laboratory tests of Solite borrow material indicate that maximum compacted clay density of 110 pcf and permeability of less than 10^{-7} cm/sec can be obtained at a moisture content of 15.5 percent. During placement and compaction, clay will be maintained at or slightly above this moisture content. During dry conditions, water will be added to the working portion of the stockpile and will be mixed, using a loader, to maintain moisture uniformity. Construction of the clay liner shall not proceed during rainfall severe enough to significantly vary the clay moisture content or to cause vehicle slippage on the working surface of the liner. During heavy rainfall the stockpile and the working surface of the liner shall be covered with plastic or water resistant tarps.

At no time shall frozen material, or clay containing ice or other deleterious material be placed. Construction shall be performed during a season in which temperatures are consistently above 40 degrees, and there is no chance of overnight frost development.

Prior to clay placement, the portion of the lagoon surface being relined shall be cleaned of shale fines, sand or silt, down to competent subgrade material, and shall be graded to appropriate slopes. Side slopes will be inclined at 2.5(H):1(V) to insure slope stability, to promote good material compaction, and to resist damage during periodic cleaning and during adverse weather conditions.

After final grading of the lagoon floor and sides, the surface will be scarified and moisture conditioned to a depth of one to two inches to improve bonding of the initial clay layer to the subgrade surface. Scarification will be similarly performed between successive clay layers during placement, as requested by the inspector. Conditions requiring this scarification will include weather damage to previously placed clay layers, overnight unexpected frost during construction, long interruptions of construction during liner development (construction halts of three or more days), or as indicated by the visual inspection of the exposed clay surface.

Clay shall be compacted in six-inch lifts by rubber tired equipment or by vibratory roller. A compacted clay density of 95 percent of Standard Proctor as defined by ASTM-D698 shall be developed in each layer prior to placement of the next layer. Material density and moisture will be continuously monitored during compaction by the inspecting engineer or geologist using a nuclear density meter.

Any portions of the liner damaged by weather exposure or by equipment shall be removed and replaced according to specifications listed above.

The completed clay liner shall have a uniform thickness of at least two feet. Additional thickness may be warranted in some secitons of the lagoon to develop a uniform geometry.

Damage to the clay liner shall be repaired by large scale material removal in the area of damage, followed by replacement and recompaction as required by the construction specifications. Care will be taken to interlock the newly compacted material with the original clay liner. Any repair of the clay liner will be supervised and monitored by a qualified engineer or geologist.

It is recommended the clay liner be protected against drying and cracking during summer months either by maintaining a high water level in the pond, or by spraying the surface as required.

APPENDIX A

EOSCIENCE CORP.

NORTHWAY LANE NORTH •
ATHAM NEW YORK 12110
518 83-8102

January 25, 1985

Mr. William Wertz
Bureau of Hazardous Waste Technology
NYS Department of Environmental Conservation
Room 401
50 Wolf Road
Colonie, New York 12233

Dear Bill:

This letter will serve to confirm and summarize our meeting of today regarding 1985 monitoring of the Northeast Solite Corporation lagoon area. This meeting was attended by you, Ed Miles (NYSDEC), Ed Fahrenkopf and me (DGC). Additions and modifications were recommended to the DCG report of December 4, 1984 entitled <u>Lagoon Area - Groundwater Quality</u>. The following items were discussed and mutually agreed to:

1) Analysis for chromium will be added to the list for the waters of the settling ponds and polishing pond.

1) Groundwater elevations, although not specifically stated in the report, are routinely measured prior to exercising the well and prior to collecting samples. This will continue to be.

3) Analysis of water and sludge in the settling pond(s) will occur for the active pond. If NES plans to actively use both settling ponds during upcoming production, then background levels will be obtained at each pond prior to monitoring (which will include only the pond that is active at the time of sampling.) Background levels will comprise two monthly rounds of sampling for both water and sludge at each pond.

4) Organic analysis for Aroclors and hydrocarbon scans will be from settling pond water instead of polishing pond water. If trigger levels are exceeded (as described in the report) then a resampling will occur in the settling pond and polishing pond. If values are real then the monitoring wells will be sampled.

5) Monitoring results are to be submitted to NYSDEC quarterly unless trigger levels or significantly higher than usual results are seen, in which case DEC will be notified within 48 hours after receipt of laboratory results.

6) Monthly monitoring will not be required until the NES facility resumes using liquid burnable materials (LBM). Bimonthly sampling will take place until then.

7) We mutually agree that analyzing for purgeable organics in the lagoon system in unnecessary as they will unlikely survive kiln temperatures. If, however, regional DEC regulators insist on such monitoring, then quarterly sampling (upon resumption of LBM) or monthly sampling for four months will suffice. Background levels taken in July, 1984, showed no parameters (EPA method 624) present after two rounds of sampling.

8) It is our contention that phenols monitoring is unnecessary, even in view of levels occasionally seen at the 80-140 ppb level in the groundwater wells. The polishing pond levels have been consistently non-existent and we feel that the observed concentrations are natural in origin, in spite of the high levels. If, however, regional DEC regulators insist on phenols monitoring, then this testing should be kept to a minimum (e.g., the settling pond, polishing pond and perhaps one well).

9) As mentioned in the report, all monitoring wells will be maintained for potential sampling by routine exercising even though all wells will not routinely be sampled for monitoring analysis.

10) It is hoped that final agreement regarding monitoring can be arranged with NYSDEC Region 3 as soon as possible so as not to create a gap in the current monitoring program. It is hopeful that sampling will resume in February 1985.

Please do not hesitate to contact me if you believe there are any inconsistencies reported here, or if you have any questions or comments.

Very truly yours,

Sander

Sander I. Bonvell
Senior Chemist

SIB/ca

cc: John Bragg
Ed Martin
Tom West

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[illegible] THWAY LANE NORTH •
LAT[illegible]M NEW YORK 12110
[illegible]18) 783-8102

February 19, 1985

Mr. William Sullivan
NYS Department of Environmental Conservation
Region III
21 South Putts Corners Road
New Paltz, New York 12561-1696

Dear Bill:

This letter will serve to confirm and summarize our February 15th meeting at Region III headquarters concerning the monitoring program to be conducted by Dunn Geoscience Corporation (DGC) at the Northeast Solite Corporation (NES) lagoon area in Mount Marion, New York. This will finalize the proposed protocol submitted in a December 4th report to NES entitled Lagoon Area - Groundwater Quality and additions and modifications recommended by Bill Wertz of NYSDEC, Central Office (confirmed in my January 25th letter to Bill of which Region III has been given a copy).

Present at the February 15th meeting were John Bragg (NES); Sander Bonvell and Bill Hall (DGC); and Bill Sullivan, Laura Zeisel and Al Klauss (NYSDEC).

In addition to the monitoring requirements set forth in the two aforementioned documents, the following items will become an integral part of the monitoring program:

1) Analysis for chromium will be performed by atomic absorption spectroscopy for total chromium. Any samples found to exceed the method detection limit of 10 ppb, will be re-sampled and analyzed for hexavalent chromium by the colorimetric method.

2) Purgeable organics analysis by EPA Methods 601 and 602 will be performed semi-annually on water samples from monitoring well DSP-2B only, following the resumption of LBMs at the NES facility. Background levels will be collected during the February, 1985 round of sampling. If purgeables are detected, then resampling of this well to confirm any positive results will precede the need to sample all wells in the monitoring program.

3) Organic analysis for total phenolics will not be required.

4) Nitrate and fluoride are not required in the monitoring program, at this time.

This letter is intended to cover only the aspects of our February 15th meeting dealing directly with changes to the current lagoon area monitoring program, which itself is a modification of the original consent order.

Please do not hesitate to call me if you believe there are any inconsistencies reported here, or if you have any questions or comments.

Very truly yours,

Sander

Sander I. Bonvell
Senior Chemist

SIB/psd

cc: John Bragg
Ed Martin
Tom West

SIB

E SCIENCE CORP

NORTHWAY LANE NORTH •
ATHAM NEW YORK 12110
18 3 8102

May 7, 1985

Mr. William Sullivan
NYS Department of Environmental Conservation
Region III
21 South Putts Corners Road
New Paltz, New York 12561-1696

RE: Northeast Solite Water Analysis for Chromium

Dear Bill:

At our February 15, 1985 meeting, we discussed resampling any water sample at the Northeast Solite lagoon area exhibiting a total chromium concentration exceeding 10 ppb and re-analyzing for hexavalent chromium. This was confirmed in my letter to you dated February 19, 1985. Since that meeting we have performed two rounds of sampling (February and April) and the only site requiring retesting has been the influent to the east settling pond which showed levels of 130 and 150 ppb total chromium, respectively.

Per our agreement, we have resampled and analyzed for hexavalent chromium by the diphenylcarbazide colorimetric method ("Standard Methods for the Examination of Water and Wastewater", 14th edition, p. 192, 1975). However, apparent interferences resulted in rapid destruction of the colored end-product and gave no results. We consulted a second laboratory and described what occurred; they confirmed similar events in previous wastewater chromium analyses that they have performed. In view of the high chloride and sulfate levels observed in the lagoon surface waters, we asked the laboratory to perform a quality assurance experiment using standardized laboratory solutions of hexavalent chromium at 15, 75 and 150 ppb levels spiked with 5000 ppm chloride or sulfate. No interferences were observed and recoveries were good; these results are summarized in Table 1.

We have also considered analysis by EPA Method 218.5 whereby hexavalent chromium is separated from its matrix by coprecipitation of lead chromate with lead sulfate in a solution of acetic acid. After separation (by centrifugation), the supernate is drawn off and the chromium precipitate resolubilized in nitric acid as trivalent chromium and quantified by furnace atomic absorption. However, concentrations of either sulfate or chloride above 1000 ppm require dilution prior to analysis. Because of the high anion concentrations encountered in these samples (see Table 2), dilution would raise the method detection limit to a value exceeding the known total chromium values. This eliminates the possibility of using this method.

We have also considered analysis by EPA Method 218.4 whereby hexavalent chromium is chelated with ammonium pyrrolidine dithiocarbamate, extracted with methyl isobutyl ketone and quantified by atomic absorption. However, high concentrations of known co-chelating metals (see Table 2) found in the samples (e.g., iron, lead, manganese) would interfere and yield inconclusive results.

Chromium is not unexpected in the waste effluent of the NES production of lightweight aggregate from shale. Shales and other argillaceous sediments are known to contain substantial amounts of chromium (410-680 gm/ton; Rankama and Sahama, 1968). In general, chromium exists in a stable, trivalent state as a chromiferous spinel (chromite) in this type rock. Another possible chromium source may be the coal ash generated during kiln operation.

Because of the problems encountered during the analyses described and the fact that the stability of hexavalent chromium is not completely understood, we feel that further attempts to quantify the hexavalent fraction of the detected chromium are neither cost effective nor justified. The conditions encountered in the NES facility process are not sufficiently oxidizing to form hexavalent chromium from the expected, stable trivalent state. Even the colorimetric analysis for total chromium requires a permanganate oxidation step following the hot sulfuric-nitric acid decomposition (of potentially interfering organic matter).

In view of the above considerations, we are discontinuing further hexavalent chromium analyses on the highly complex surface water samples. We will continue to monitor filtered groundwater for hexavalent chromium if the need arises.

Please do not hesitate to call me if you have any questions or comments regarding this matter.

Very truly yours,

Sander

Sander I. Bonvell
Senior Chemist

SIB/cja

cc: John Bragg
Ed Martin
Tom West

TABLE 1
Quality Assurance
Hexavalent Chromium
Diphenylcarbazide Method

Chromium Concentrations	Percent Recovery
15 ppb	106.7*
15 ppb + 5000 ppm Chloride	106.7
15 ppb + 5000 ppm Sulfate	99.3
75 ppb	99.5*
75 ppb + 5000 ppm Chloride	102.7
75 ppb + 5000 ppm Sulfate	100.9
150 ppb	100.0*
150 ppb + 5000 ppm Chloride	102.0
150 ppb + 5000 ppm Sulfate	99.3

*Based on standard curve

TABLE 2
Selected Monitoring Results*
East Settling Pond Influent

Parameter	February	April
Sulfate	12,500	19,200
Chloride	3,100	5,740
Iron	77.5	87.0
Manganese	2.9	6.0
Lead	0.16	**
Chromium, Total	0.130	0.150

*Results in mg/l
**Not available at time of writing

APPENDIX B

TABLE B1

NORTHEAST SOLITE CORPORATION
LAGOON AREA

November, 1984

PARAMETER	DSP2A	DSP2B	DSP2C	DSP2D	DSP2E	DSP2F	DSP3	DSP4	POLISHING POND	INLET AT POLISHING POND
Conductivity *	1,730	10,600	9,100	2,010	985	1,460	5,950	1,400	26,500	28,600
Chloride	530	5,400	4,400	630	104	193	2,400	125	8,500	10,600
Sulfate*	162	1,100	880	140	40	188	390	440	9,300	9,300
Phenols	<0.005	<0.005	<0.005	<0.005	0.008	0.010	<0.005	<0.005	<0.005	<0.005
pH, Units	7.6	6.9	7.0	7.3	7.4	7.5	7.0	7.1	8.2	8.3
pH, Filtered	7.6	7.0	7.1	7.4	7.5	7.6	-	-	-	-
Lead	0.035	0.010	0.014	0.028	0.035	<0.010	0.033	0.006	<0.02	<0.02
Lead(Filtered)	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-	-
Selenium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.138	0.170
Selenium (Filtered)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-
Arsenic	0.039	<0.020	<0.020	<0.020	<0.020	<0.020	0.048	0.062	<0.020	<0.020
Arsenic(Filtered)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	-
Antimony	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Antimony (Filtered)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-

*μmhos/cm at 25°C

All values expenssed in mg/L except where noted

Samples filtered thru 0.45 micron membrane

TABLE B
Northeast Solite Corporation
Well USP-1A

	1985					
Parameter	February	April	June	August	October	December
pH, units	7.3	7.1	6.7	6.7	6.8	6.6
Chloride	7	14	16	4	9	8
Conductivity (umhos/cm)	400	775	640	560	615	560
Sulfate	98	166	148	160	165	200
Lead, Total	0.10	0.074	0.13	0.10	0.011	0.066
Lead*	<0.010	<0.010	<0.010	0.039	<0.010	<0.010
Selenium*	0.003	<0.002	<0.002	<0.002	<0.002	<0.002
Arsenic*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Antimony*	<0.5	<0.50	<0.5	<0.5	<0.5	<0.5
Cadmium*	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Iron*	0.11	0.07	0.05	0.05	<0.05	0.09
Manganese*	<0.05	<0.05	0.05	0.18	0.15	0.14
Barium*	0.1	0.2	0.2	0.2	0.2	<0.1

All values expressed in mg/L except where noted.

*Field filtered through 0.45 micron cellulose prior to acid preservation

Insufficient water was available for sampling during February 1986.

TABLE B3
Northeast Solite Corporation
DSP-2B

	1985						1986
Parameter	**February**	**April**	**June**	**August**	**October**	**December**	**February**
pH, units	6.9	6.8	6.9	6.8	6.8	6.8	6.8
Chloride	5340	4200	2700	5750	4550	4500	4200
Conductivity (umhos/cm)	9000	9960	8160	13,310	10,820	11,230	10,920
Sulfate	920	860	760	900	940	1000	900
Lead, Total	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	0.012
Lead*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Selenium*	<0.002	<0.002	<0.002	<0.002	<0.5	<0.002	<0.002
Arsenic*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Antimony*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium*	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Iron*	0.05	0.36	0.06	0.08	0.09	<0.05	<0.05
Manganese*	0.24	0.27	0.19	0.36	0.33	0.14	0.28
Barium*	0.4	0.3	0.3	0.4	<0.5	<0.5	0.1

All values expressed in mg/L except where noted

*Field filtered through 0.45 micron cellulose prior to acid preservation

TABLE B4
Northeast Solite Corporation
Well DSP-2C

	1985						1986
Parameter	February	April	June	August	October	December	**February**
pH, units	7.4	6.9	7.3	7.3	7.0	7.2	7.0
Chloride	3380	2220	1860	2575	4125	3330	4900
Conductivity (umhos/cm)	5400	5935	4980	6660	10,200	8945	12,270
Sulfate	640	494	402	460	640	560	740
Lead, Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.13
Lead*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

All values expressed in mg/L (ppm) except where noted

*Field filtered through 0.45 micron cellulose prior to acid preservation.

TABLE B5
Northeast Solite Corporation
Well DSP-2D

Parameter	1985 February	April	June	August	October	December	1986 February
pH, units	7.2	7.2	7.2	7.1	7.1	7.1	7.1
Chloride	490	471	410	625	813	763	900
Conductivity (umhos/cm)	1700	2070	1960	2260	2600	2705	3170
Sulfate	165	84	84	100	140	135	135

All values expressed in mg/L except where noted.

*Field filtered through 0.45 micron cellulose prior to acid preservation.

TABLE B6
Northeast Solite Corporation
Well DSP-3

Parameter	1985 February	1985 April	1985 June	1985 August	1985 October	1985 December	1986 February
pH, units	6.9	6.7	6.8	6.8	6.7	6.7	6.9
Chloride	3240	2120	1940	1790	1430	1625	2075
Conductivity (umhos/cm)	5500	5620	5510	6030	5510	7990	4990
Sulfate	480	490	456	540	480	520	440
Lead, Total	0.35	0.12	0.19	0.012	0.010	0.11	0.05
Lead*	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Selenium*	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Arsenic*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Antimony*	<0.5	<0.50	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium*	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium*	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010
Iron*	<0.05	0.08	0.07	<0.05	<0.05	<0.05	<0.05
Manganese*	<0.05	0.17	0.23	0.25	0.22	0.09	<0.05
Barium*	0.4	0.4	0.4	0.5	0.3	<0.1	0.2

All values expressed in mg/L except where noted

*Field filtered through 0.45 micron cellulose prior to acid preservation.

TABLE B7
Northeast Solite Corporation
Well DSP-4

				1985			1985
Parameter	February	April	June	August	October	December	February
pH, units	6.2	7.3	6.9	7.3	6.5	6.7	7.2
Chloride	312	86	75	85	214	181	103
Conductivity (umhos/cm)	1500	1220	1070	1230	1560	1540	1145
Sulfate	464	244	270	370	430	400	180
Iron*	0.10	0.11	<0.05	<0.05	0.39	<0.05	0.08
Manganese*	2.09	1.45	1.78	1.03	4.6	4.04	1.34

All values expressed in mg/L unless noted

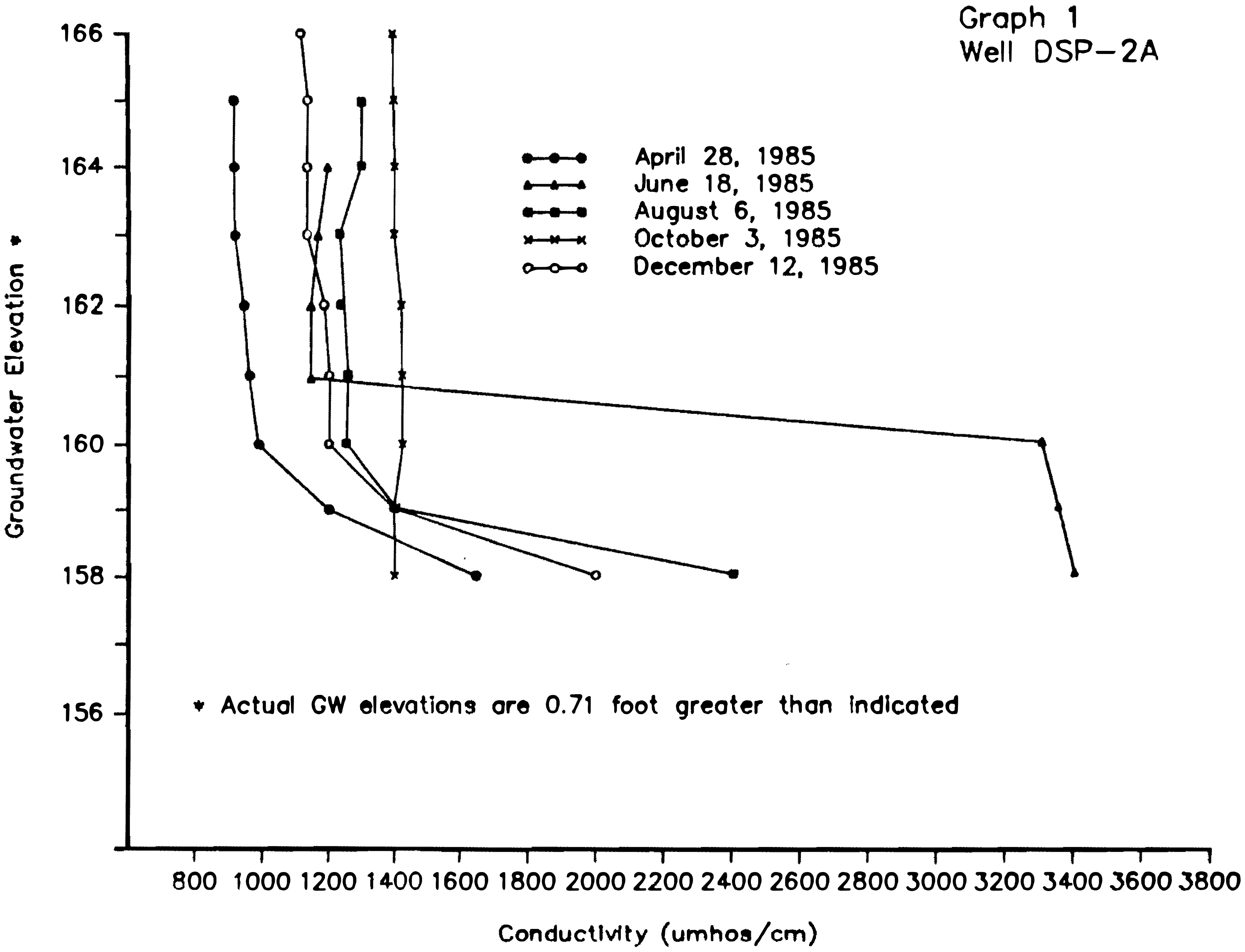
*Field filtered through 0.45 micron cellulose prior to acid preservation.

Table B8

Groundwater Elevations
Northeast Solite Corporation

Monitoring Well	February 20, 1985	April 17, 1985	June 17, 1985	August 5, 1985	October 3, 1985	December 11, 1985	February 1986
DSP-3	164.48	166.97	166.26	167.18	162.74	168.13	167.38
DSP-4	167.80	168.05	167.49	168.00	167.35	168.12	168.65
DSP-2A	165.31	164.20	166.25	166.56	165.72	167.54	Frozen
DSP-2B	165.26	166.70	165.97	166.51	165.49	167.28	167.29
DSP-2C	165.05	166.40	165.78	166.24	165.24	167.07	166.29
DSP-2D	162.45	163.69	162.82	163.45	163.80	164.63	164.57
DSP-2E	156.58	157.70	157.54	157.50	157.63	159.21	159.90
DSP-2F	144.15	145.45	144.92	145.74	148.58	149.72	149.93

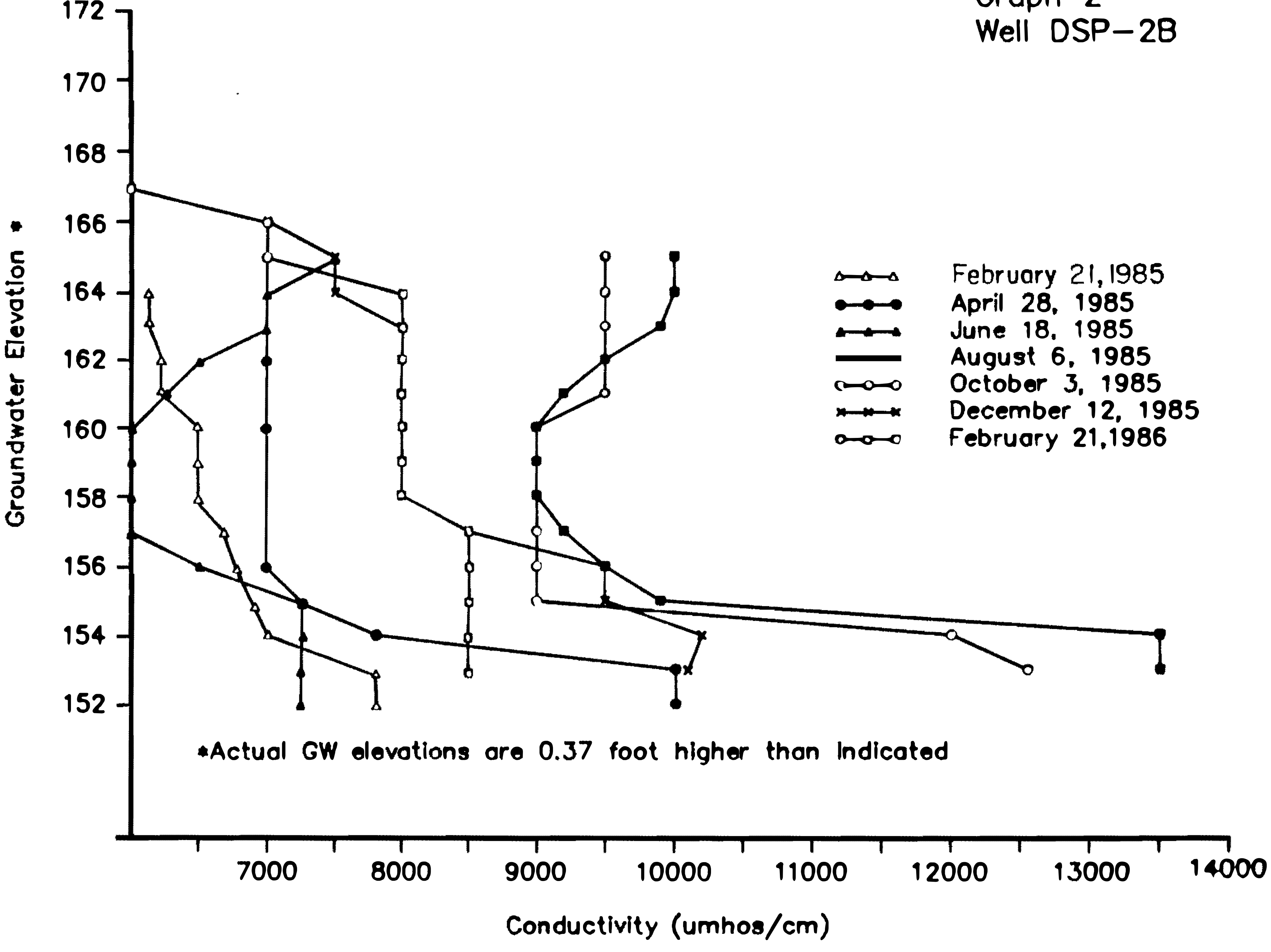
APPENDIX C



Graph 1
Well DSP-2A

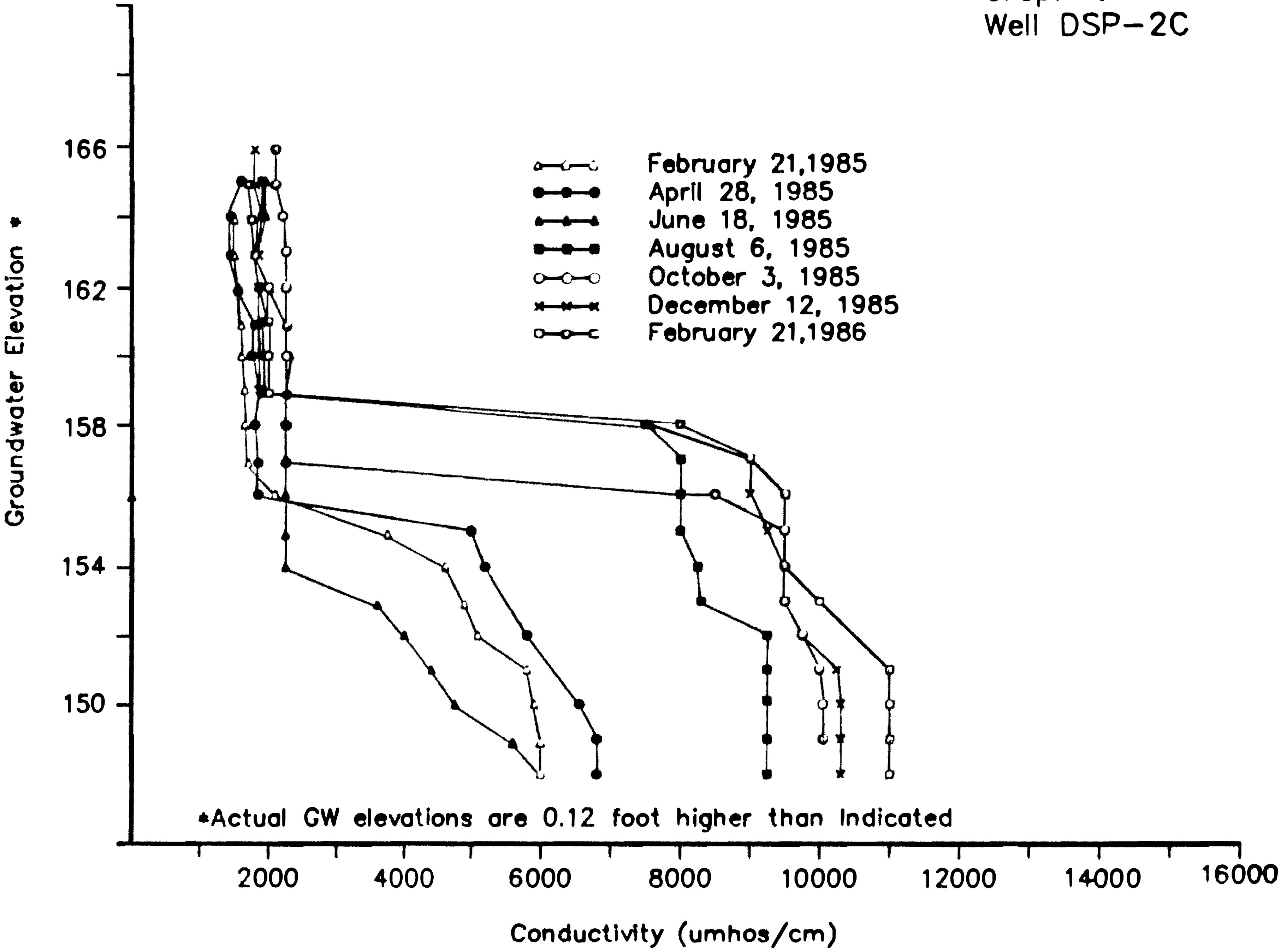
* Actual GW elevations are 0.71 foot greater than indicated

Graph 2
Well DSP-2B



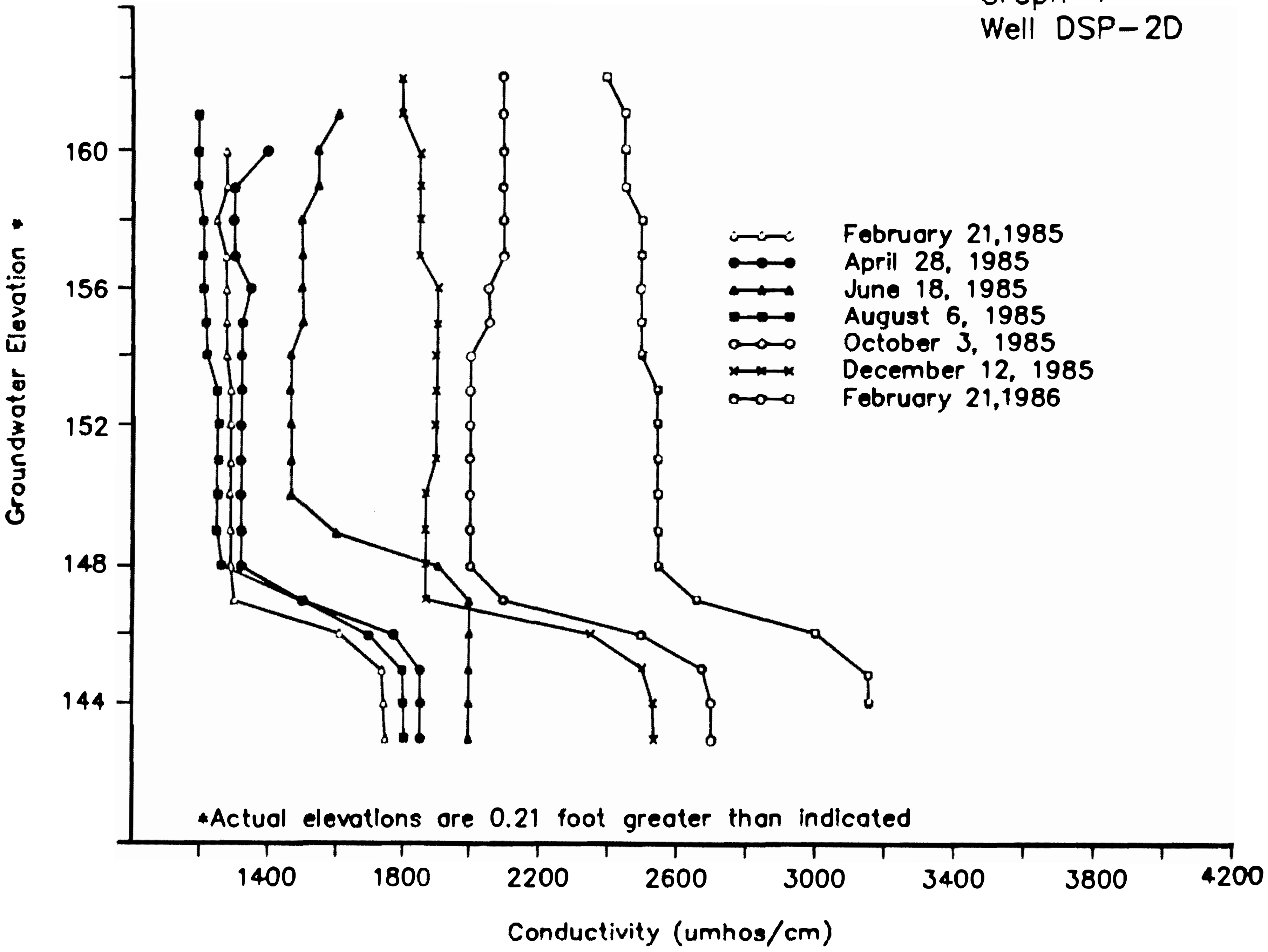
*Actual GW elevations are 0.37 foot higher than indicated

Graph 3
Well DSP-2C

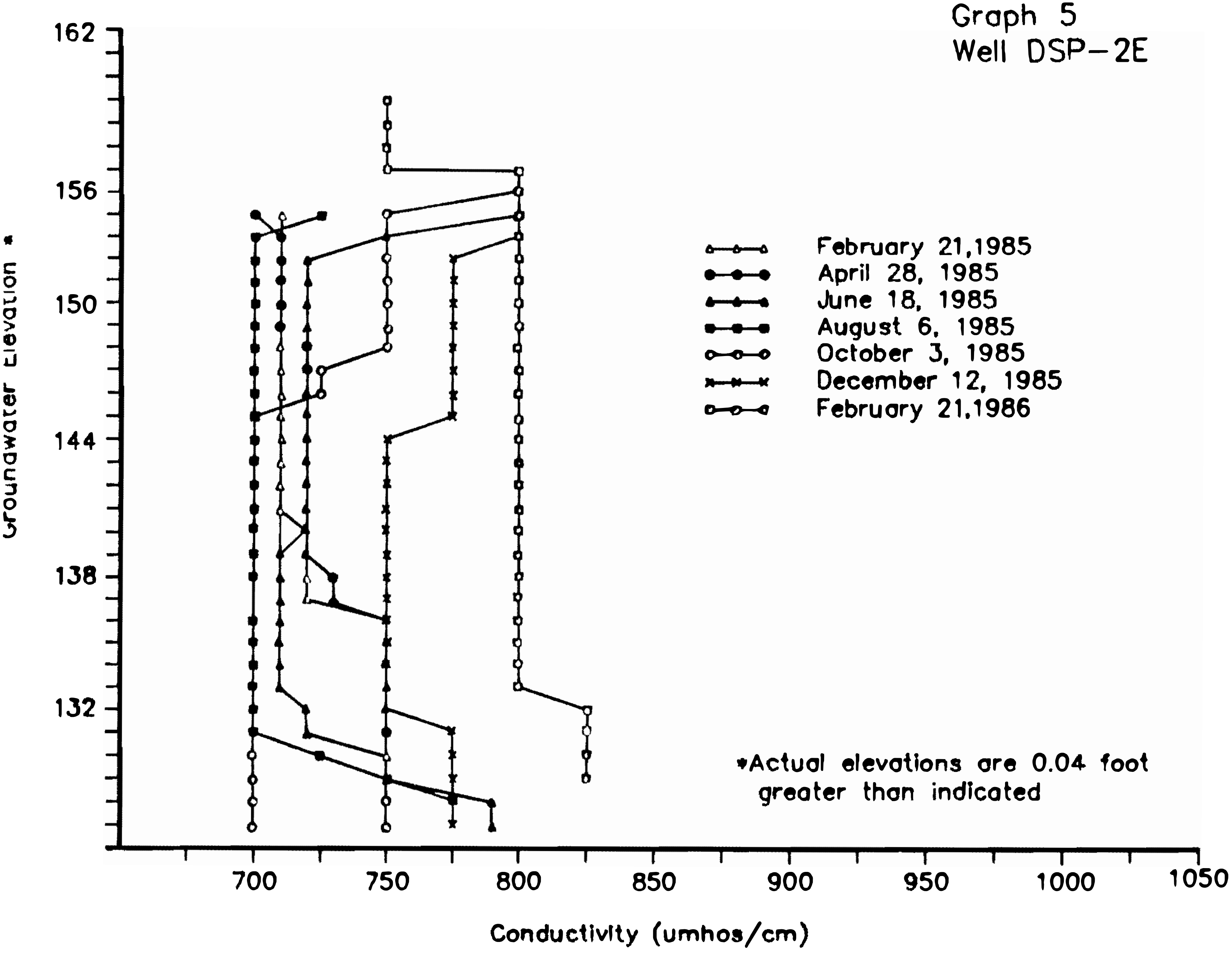


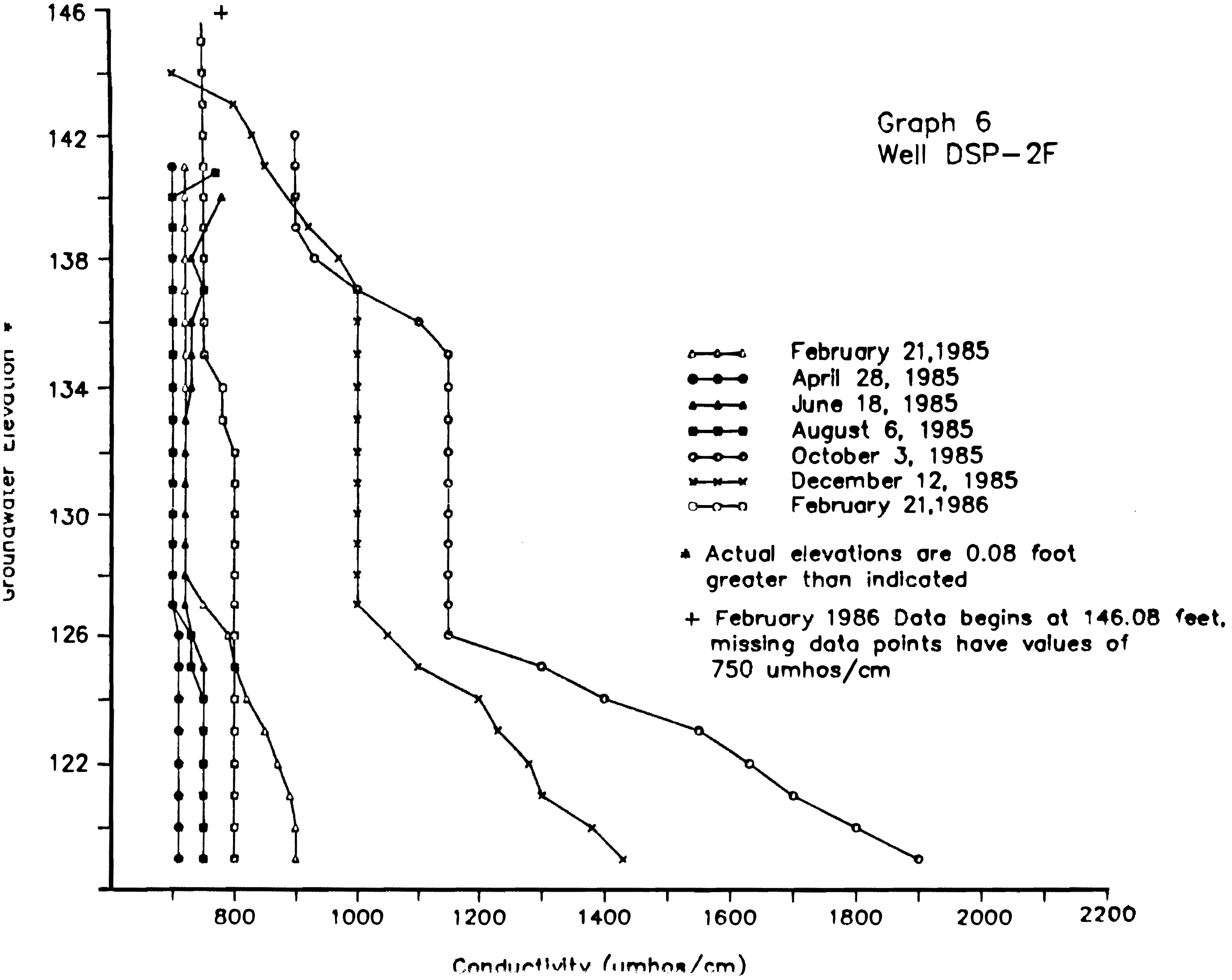
*Actual GW elevations are 0.12 foot higher than indicated

Graph 4
Well DSP-2D



*Actual elevations are 0.21 foot greater than indicated


Graph 5
Well DSP-2E
162
156
150
144
138
132
Groundwater Elevation *
700
750
800
850
900
950
1000
1050
Conductivity (umhos/cm)
February 21,1985
April 28, 1985
June 18, 1985
August 6, 1985
October 3, 1985
December 12, 1985
February 21,1986
*Actual elevations are 0.04 foot greater than indicated

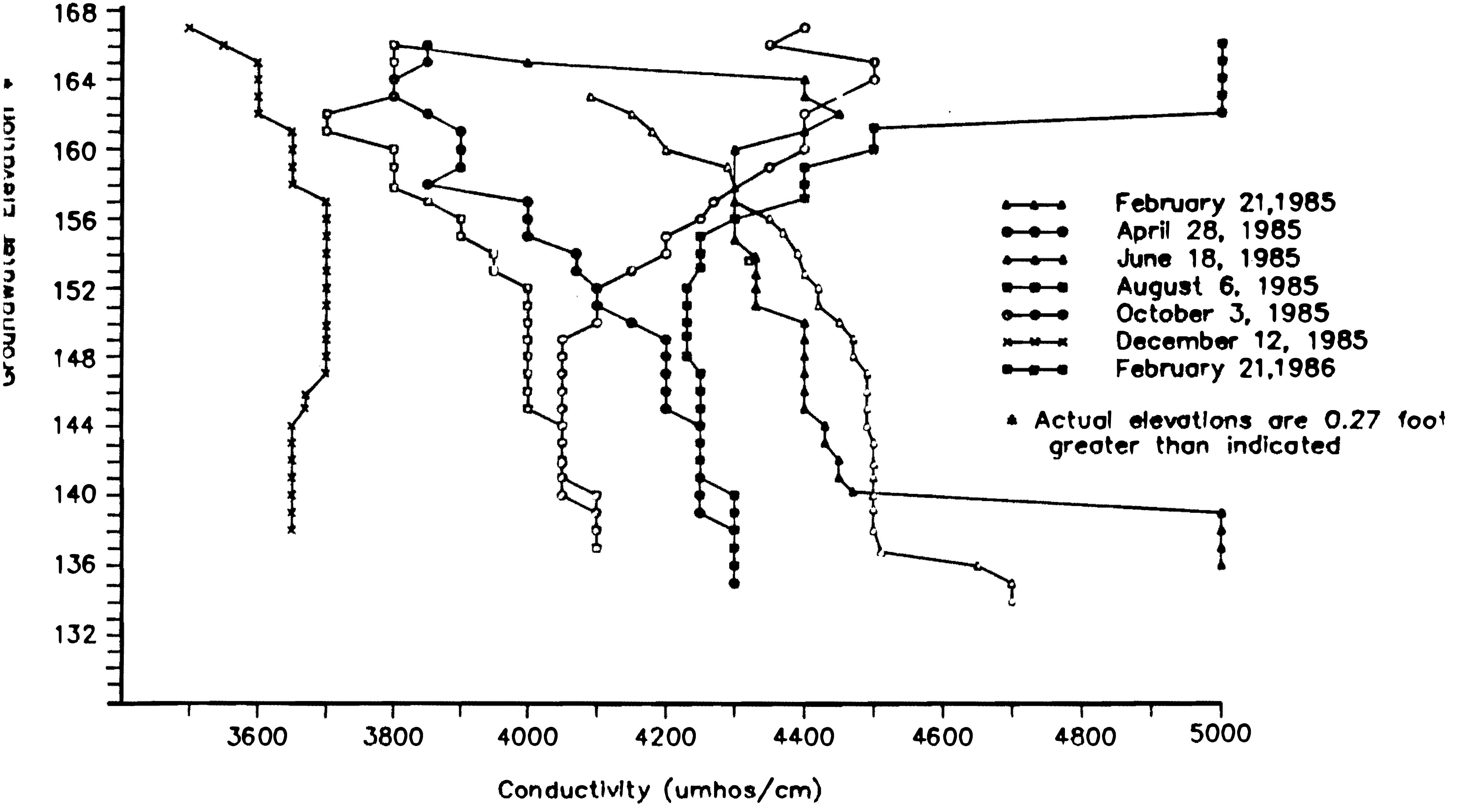


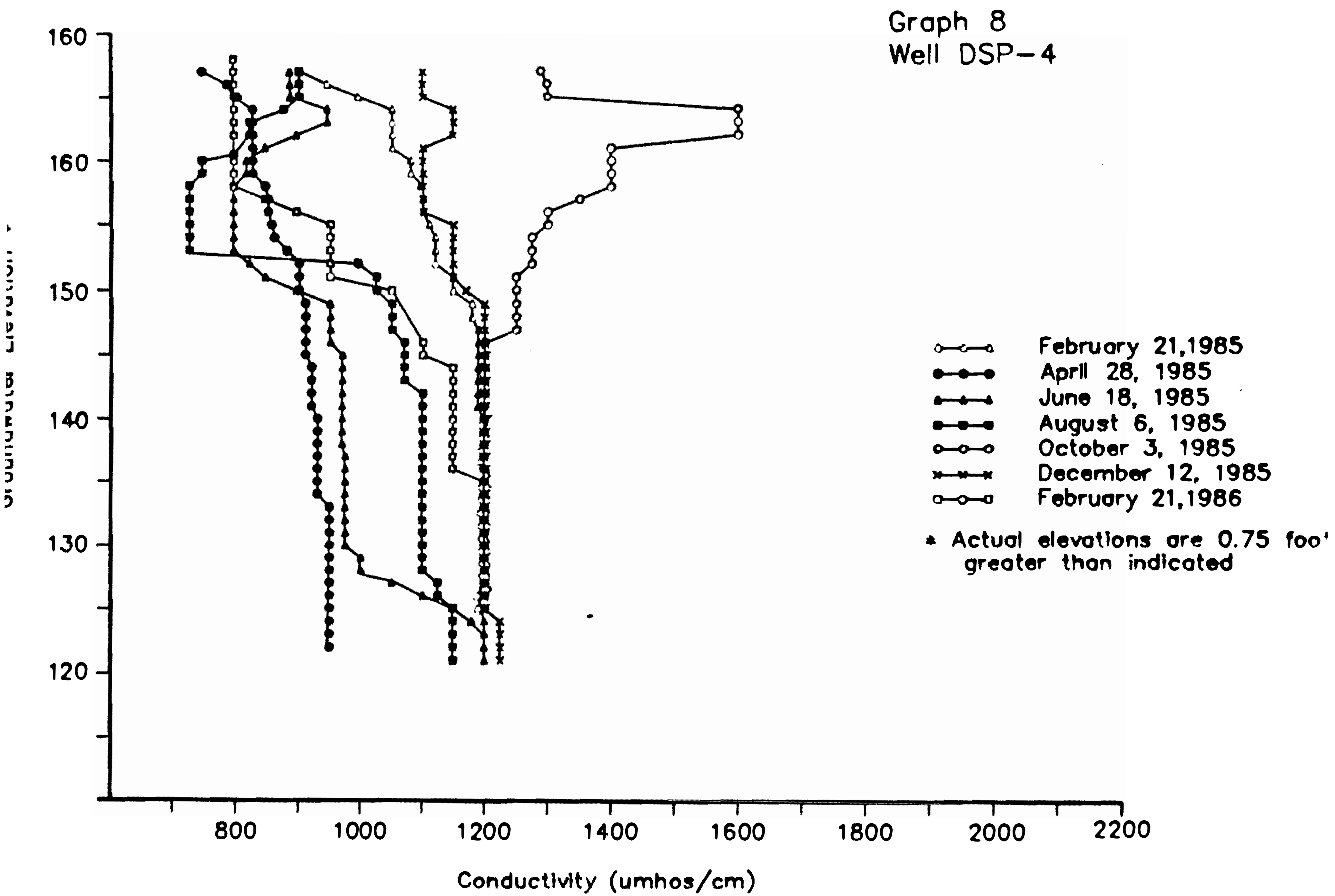
Graph 6
Well DSP-2F

* Actual elevations are 0.08 foot greater than indicated

+ February 1986 Data begins at 146.08 feet, missing data points have values of 750 umhos/cm

Graph 7
Well DSP-3




Graph 8
Well DSP-4
160
160
150
140
130
120
800
1000
1200
1400
1600
1800
2000
2200
Conductivity (umhos/cm)
February 21,1985
April 28, 1985
June 18, 1985
August 6, 1985
October 3, 1985
December 12, 1985
February 21,1986
* Actual elevations are 0.75 foo'
greater than indicated

APPENDIX D

```
-------------------------------------------------------------------------------
LATAM WATER DISTRICT-MOHAWK VIEW LAB        DATA SET: ANALYTICAL REPORT    (ADD
1 - IDENTIFICATION #        : 85965 DUNN-DSP-2B

2 - DATE/TIME COLLECTED     : 2/21/85
3 - DATE/TIME RECEIVED      : 2/21/85-1015
4 - DATE ANALYZED           : 2/25/85







ENTER ITEM NUMBER TO MODIFY OR 'D' IF DONE : D_

                                                 PRINTED ON 02/26/85 AT 15:44
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
LATAM WATER DISTRICT-MOHAWK VIEW LAB        DATA SET: VOLATILE AROMATICS   (ADD

1 - IDENTIFICATION #        : 85965 DUNN-DSP-2B

2 - BENZENE UG/L            : <1
3 - TOLUENE UG/L            :  1
4 - ETHYLBENZENE UG/L       : <1
5 - M-XYLENE UG/L           : <1
6 - O-XYLENE UG/L           : <1
7 - P-XYLENE UG/L           : <1
8 - P-CYMENE UG/L           : <1
9 - CUMENE UG/L             : <1
10 - CHLOROBENZENE UG/L     : <1
11 - O-DCB UG/L             : <1
12 - M-DCB UG/L             : <1
13 - P-DCB UG/L             : <1
14 - P-CHLOROTOLUENE UG/L   : <1
15 - O-CHLOROTOLUENE UG/L   : <1
16 - SEC-BUTYLBENZNE UG/L   : <1
17 - TERT-BUTYLBENZ UG/L    : <1
18 - N-PROPYLBENZENE UG/L   : <1
19 - STYRENE UG/L           : <1
ENTER ITEM NUMBER TO MODIFY OR 'D' IF DONE : D_

                                                 PRINTED ON 02/26/85 AT 15:45
-------------------------------------------------------------------------------
```

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-----------------------------------------------------------------------------
MOHAWK VIEW LABORATORY                    DATA SET: ANALYTICAL REPORT    (ADD
 1 - IDENTIFICATION #        : 85736 DUNN-DSP-2B

   - DATE/TIME COLLECTED     : 2/21/85
 3 - DATE/TIME RECEIVED      : 2/22/85-1015
 4 - DATE ANALYZED           : 2/25/85









ENTER ITEM NUMBER TO MODIFY OR 'D' IF DONE : D_

                                            PRINTED ON 02/26/85 AT 15:40
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-----------------------------------------------------------------------------
MOHAWK VIEW LABORATORY                    DATA SET: VOLATILE ORGANICS    (ADD

 1 - IDENTIFICATION #        : 85736 DUNN-DSP-2B

 2 - CH2CL2 UG/L             : <1
 3 - CLCH=CCL2 UG/L          : <1
 4 - CH3CCL3 UG/L            : <1
 5 - CCL4 UG/L               : <1
 6 - CLCH2CH2CL UG/L         : <1
 7 - CL2C=CCL2 UG/L          : <1
 8 - CHCL3 UG/L              : <1
 9 - CHBRCL2 UG/L            : <1
10 - CHBR2CL UG/L            : <1
11 - CHBR3 UG/L              : <1
 2 - T 1,2 CLCH=CHCL UG/L    : <1
13 - C 1,1 H2C=CCL2 UG/L     : <1
14 - VINYL CHLORIDE UG/L     : <1
 5 - CH3CHCL2 UG/L           : <1
16 - CLCH2OCH=CH2 UG/L       :
17 - CCL3F UG/L              : <1


ENTER ITEM NUMBER TO MODIFY OR 'D' IF DONE : D_
```

C.T. Male Associates, P.C.
Laboratory Analysis Report
JANUARY 29, 1986

DUNN GEOSCIENCE CORPORATION
5 NORTHWAY LANE NORTH
LATHAM NY 12110

Attention: MR. ED FAHRENKOPF

CTM PROJECT #: 86.00109
No. samples analyzed: 1

CTM Task #: 860106 86F

Your purchase order #: 257-5-2870
Your sample id: DSP-2R CTM sample #: 0106 86F 01 Matrix: WATER Composite or Grab: G
Date sample recd: 01/06/86 Sample taken by: FAHRENKOPF, E Date sampled: 01/06/86 Time: 10:45 AM
Location: 257-5-2870

Parameters and Standard Methodology Used		Results		Analyst Reference
CHLOROMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
BROMOMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
DICHLORODIFLUOROMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
VINYL CHLORIDE	FEDERAL REGISTER, JULY 1982,601	<1	UG/L	PF C:35
CHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
METHYLENE CHLORIDE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
TRICHLOROFLUOROMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,1-DICHLOROETHENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,1-DICHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
TRANS 1,2-DICHLOROETHENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
CHLOROFORM	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,2-DICHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,1,1-TRICHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
CARBON TETRACHLORIDE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
BROMODICHLOROMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,2-DICHLOROPROPANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,3-TRANS DICHLOROPROPENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
TRICHLOROETHYLENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
DIBROMOCHLOROMETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,1,2-TRICHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
CIS 1,3,-DICHLOROPROPENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
2-CHLOROETHYLVINYL ETHER	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
BROMOFORM	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,1,2,2-TETRACHLOROETHANE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
TETRACHLOROETHYLENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
CHLOROBENZENE	FEDERAL REGISTER,DEC. 3, 1979,601	<1	UG/L	PF C:35
1,2-DICHLOROBENZENE	FEDERAL REGISTER,DEC 3, 1979,601	<1	UG/L	PF C:35
1,3-DICHLOROBENZENE	FEDERAL REGISTER,DEC 3, 1979,601	<1	UG/L	PF C:35
1,4-DICHLOROBENZENE	FEDERAL REGISTER,DEC 3, 1979,601	<1	UG/L	PF C:35
BENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,1,2-TRICHLOROETHENE	EPA METHOD-503.1	<1	UG/L	PF C:47
a,a,a-TRIFLUOROTOLUENE	EPA METHOD-503.1	<1	UG/L	PF C:47
TOLUENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,1,2,2-TETRACHLOROETHENE	EPA METHOD-503.1	<1	UG/L	PF C:47
ETHYLBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1-CHLOROCYCLOHEXENE-1	EPA METHOD-503.1	<1	UG/L	PF C:47
p-XYLENE	EPA METHOD-503.1	<1	UG/L	PF C:47
CHLOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
m-XYLENE	EPA METHOD-503.1	<1	UG/L	PF C:47
o-XYLENE	EPA METHOD-503.1	<1	UG/L	PF C:47
ISO-PROPYLBENZENE (CUMENE)	EPA METHOD-503.1	<1	UG/L	PF C:47
STYRENE	EPA METHOD-503.1	<1	UG/L	PF C:47
p-BROMOFLUOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47

********** SAMPLE CONTINUES **********

C.T. Male Associates, P.C.
Laboratory Analysis Report
JANUARY 29, 1986

DUNN GEOSCIENCE CORPORATION
5 NORTHWAY LANE NORTH
LATHAM NY 12110

CTM PROJECT #: 86.00189
No. samples analyzed. 1

CTM Task #: 860106 86F

Attention: MR. ED FAHRENKOPF

Your purchase order #: 257-5-2870
Your sample id: DSF-2R CTM sample #: 0106 86F 01 Matrix: WATER Composite or Grab: G
Date sample recd: 01/06/86 Sample taken by: FAHRENKOPF, E Date sampled: 01/06/86 Time: 10:45 AM
Location: 257-5-2870

Parameters and Standard Methodology Used		Results		Analyst Reference
n-PROPLYBENZENE	EPA METHID-503.1	<1	UG/L	PF C:47
tert-BUTLYBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
o-CHLOROTOLUENE	EPA METHOD-503.1	<1	UG/L	PF C:47
p-CHLOROTOLUENE	EPA METHOD-503.1	<1	UG/L	PF C:47
BROMOBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
sec-BUTLYBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,3,5-TRIMETHLYBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
p-CYMENE (ISOPROPYLTOLUENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,2,4-TRIMETHYLBENEZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
p-DICHLOROBENEZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
m-DICHLOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
CYCLOPROPYLBENEZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
n-BUTLYBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
2,3-BENZOFURAN	EPA METHOD-503.1	<1	UG/L	PF C:47
o-DICHLOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,2,4-TRICHLOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
NAPTHALENE	EPA METHOD-503.1	<1	UG/L	PF C:47
1,2,3-TRICHLOROBENZENE	EPA METHOD-503.1	<1	UG/L	PF C:47
HEXACHLOROBUTADIENE	EPA METHOD-503.1	<1	UG/L	PF C:47

AUTHORIZED FOR RELEASE: Tom McKillen PhD

PHONE: 518-785-0976

APPENDIX E

Table E1

Surface Water Quality
Settling Pond
Influent & Effluent

Parameter	2-28-85		4-17-85		6-5-85		8-5-85	
	Inf.	Eff.	Inf.	Eff.	Inf.	Eff.	Inf.	Eff.
pH, units	6.8	8.6	3.5	6.3	2.9	2.9	2.9	3.0
Conductivity, umhos/cm	10,000	16,750	35,190	32,000	27,000	25,920	28,080	26,000
Chloride	3,100	3,400	5,740	5,460	4,125	4,250	3,750	3,340
Sulfate	12,500	8,200	19,200	18,200	14,900	15,000	20,000	20,000
Lead	0.16	<0.010	0.24	<0.010	0.1	0.1	0.30	0.22
Arsenic	0.76	0.17	0.48	<0.020	0.54	0.54	0.80	0.40
Selenium	0.17	0.18	0.17	0.10	0.1	0.075	0.23	0.16
Cadmium	0.009	<0.002	0.018	0.0205	0.069	0.065	0.10	0.10
Iron	77.5	0.61	87.0	2.00	42.4	9.55	140	103
Manganese	2.9	0.50	6.00	5.10	8.1	7.9	11.6	1.6
Antimony	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5
Barium	0.7	0.6	<0.2	0.3	1.0	<0.5	<0.5	<0.5
Chromium	0.13	<0.010	0.15	<0.010	0.9	0.024	0.20	0.14
Total Suspended Solids	x	x	x	x	x	x	x	x
Total Dissolved Solids	x	x	x	x	x	x	x	x

All values expressed in mg/L except where noted.

Table E1 (cont'd)

	8-19-85		9-16-85		10-3-85		10-14-85	
Parameter	**Inf.**	**Eff.**	**Inf.**	**Eff.**	**Inf.**	**Eff.**	**Inf**	**Eff.**
pH, units	2.7	2.5	3.4	3.1	6.2	6.4	3.0	3.1
Conductivity, umhos/cm	x	x	x	x	23,400	25,480	x	x
Chloride	x	x	x	x	3,463	3.563	3,970	4,090
Sulfate	28,000	26,000	13,000	15,000	12,000	12,000	18,000	17,000
Lead	x	x	0.14	<0.05	0.16	<0.01	0.10	0.11
Arsenic	x	x	x	x	0.62	0.11	x	x
Selenium	x	x	x	x	0.12	0.11	x	x
Cadmium	x	x	x	x	0.065	0.063	x	x
Iron	x	x	x	x	30.0	0.84	x	x
Manganese	x	x	x	x	6.6	6.3	x	x
Antimony	x	x	x	x	<0.5	<0.5	x	x
Barium	x	x	x	x	<0.5	<0.5	x	x
Chromium	x	x	x	x	0.051	<0.010	x	x
Tot.Susp.Solids	5,400*	500*	5,034	332	1,459	35	1,520	270
Tot.Diss.Solids	51,400	50,700	27,000	29,100	26,900	27,000	32,300	32,500

All values expressed in mg/L except where noted.

X = Not analyzed.

* = Derived from subtracting Total Dissolved Solids from Total Solids.

Table E1 (cont'd)

	10-28-85		11-15-85		11-27-85		12-12-85	
Parameter	Inf.	Eff.	Inf.	Eff.	Inf.	Eff.	Inf	Eff.
pH, units	3.7	7.2	2.9	3.2	2.6	2.7	6.0	3.7
Conductivity, umhos/cm	x	x	x	x	x	x	33,150	37,740
Chloride	3,810	4,125	x	x	x	x	4,063	4,750
Sulfate	18,000	19,000	21,000	21,000	23,000	21,000	20,000	22,000
Lead	0.07	0.01	0.2	0.07	0.30	0.28	0.15	0.10
Arsenic	x	x	x	x	x	x	0,50	0.32
Selenium	x	x	x	x	x	x	0.26	0.30
Cadmium	x	x	x	x	x	x	0.058	0.067
Iron	x	x	x	x	x	x	42	7.2
Manganese	x	x	x	x	x	x	10.0	11.6
Antimony	x	x	x	x	x	x	<0.5	<0.5
Barium	x	x	x	x	x	x	<0.5	<0.5
Chromium	x	x	x	x	x	x	0.084	0.017
Tot.Susp.Solids	2,030	180	5,220	116	5,780	1,060	3,170	74
Tot.Diss.Solids	34,200	36,600	36,000	36,300	45,500	44,700	36,200	42,000

Table El (cont'd)

	2-21-86	
Parameter	Inf.	Eff.
pH, units	2.9	2.9
Conductivity, umhos/cm	33,280	31,200
Chloride	4,540	3,525
Sulfate	21,500	20,000
Lead	0.37	0.35
Arsenic	3.0	2.6
Selenium	0.63	0.52
Cadmium	0.106	0.099
Iron	113	82
Manganese	11.6	10.8
Antimony	<0.5	<0.5
Barium	<0.5	<0.5
Chromium	0.26	0.21
Tot.Susp.Solids	2,290	327
Tot.Diss.Solids	40,000	36,700

Table E2

Surface Water Quality
East Settling Pond Influent
1985

	February	April
Aroclors	<0.001	<0.001
EHS*	<0.010	<0.010

* Extractable Hydrocarbon Scan obtained by methylene chloride extraction, concentration and GC/MS analysis using 2-fluorobiphenyl as an internal standard.

All units in mg/L (ppm).

Table E3

Surface Water Quality
Scrubber Effluent

Parameter	February	April	June	August	October	January	February
pH*	2.7	3.0	2.8	2.6	3.2	3.0	2.4
Chloride	3100	5640	4250	3600	3375	3875	3825
Sulfate	12250	18700	14600	20000	13000	20000	21500
Lead	0.16	0.34	0.14	0.18	0.15	0.23	0.40
Total Solids	24800	42500	33200	-	29400	39900**	42165**
Total Dissolved Solids	20000	35500	30200	-	26800	36800	39800

All units in mg/L except where noted.

* Standard units.

** Obtained as a sum of total dissolved solids and total suspended solids.

APPENDIX F

Table F1

East Settling Pond Sediment
Extraction Procedure Toxicity Analysis
1985

	Results		
Parameter	February	April	Maximum Contaminant Level
Arsenic	<0.020	<0.020	5
Barium	0.26	<0.2	100
Cadmium	0.047	<0.002	1
Chromium	<0.010	<0.010	5
Lead	0.14	<0.010	5
Selenium	0.022	0.013	1

All values expressed in mg/L.