Final Reclamation of the Old Coarse Refuse Road

Final Reclamation of the Old Coarse Refuse Road

APPENDIX A

APPENDIX A 1994 OPERATIONAL (UPDES) AND BASELINE WATER MONITORING DATA SUMMARY

Table A-1 Monitoring Locations
Table A-2 Monthly Field Parameter Data performed by Huntingdon
Table A-3 Weekly Field Parameter Data - Coarse Refuse Seep performed by EWP
Table A-4 Quarterly Compliance Sampling Results performed by Huntingdon
Table A-5 Monthly Sampling Results - Coarse Refuse Seep performed by EWP

Figure A-1 Stiff Diagram - Baseline Sites - January 1994
Figure A-2 Stiff Diagram - Baseline Sites - April 1994
Figure A-3 Stiff Diagram - Baseline Sites - July 1994
Figure A-4 Stiff Diagram - Baseline Sites - September 1994
Figure A-5 Stiff Diagram - Baseline Sites - December 1994
Figure A-6 Stiff Diagram - ICE-1 (Icelander Creek)
Figure A-7 Stiff Diagram - F-2 (Whitmore Spring)
Figure A-8 Stiff Diagram - Coarse Refuse Seep at the Source - CRS (EWP)
Figure A-9 Stiff Diagram - Coarse Refuse Seep at the Source - CRS (HUNT)
Figure A-10 Stiff Diagram - Coarse Refuse Seep at the Culvert - CRC (EWP)
Figure A-11 Stiff Diagram - Coarse Refuse Seep at the Boundary - CRB (EWP)
Figure A-12 Stiff Diagram - Coarse Refuse Seep at the Boundary - CRB (HUNT)
Figure A-13 Temperature - Baseline Sites
Figure A-14 Specific Conductivity - Baseline Sites
Figure A-15 Dissolved Oxygen - Baseline Sites
Figure A-16 Total Dissolved Solids (TDS) - Baseline Sites
Figure A-17 Coarse Refuse Seep Flow - (EWP)
Figure A-18 Coarse Refuse Seep pH - (EWP)
Figure A-19 Coarse Refuse Seep - Flow vs pH @ CRS (EWP)
Figure A-20 Coarse Refuse Seep - Total Iron vs Flow @ CRS (EWP)
Figure A-21 Coarse Refuse Seep - Total Boron vs Flow @ CRS (EWP)
Figure A-22 Coarse Refuse Seep - Total Manganese vs Flow @ CRS (EWP)
Figure A-23 Coarse Refuse Seep - Total Iron @ CRS Cumulative Mass Contribution (EWP)
Figure A-24 Coarse Refuse Seep - Total Boron @ CRS Cumulative Mass Contribution (EWP)
Figure A-25 Coarse Refuse Seep - Total Manganese @ CRS Cumulative Mass Contribution (EWP)

Attachment A Huntingdon Analytical Data and Chain of Custody Documentation
Attachment B Huntingdon Field Data Sheets
Attachment C EWP Analytical Data and Chain of Custody Documentation
Attachment D EWP Field Data Sheets

INTRODUCTION

This report consists of a summary and interpretation of the water quality monitoring data collected during 1994 as part of the Sunnyside Cogeneration Facility DOGM Permit Water Quality Monitoring Plan. The DOGM monitoring plan includes quarterly collection of water quality samples and monthly collection of field parameter data at five Baseline monitoring locations, and inspection and sample collection of the Sunnyside Cogeneration Facility (SCF) UPDES permit outfall locations. The monitoring locations are listed in Table A - 1. Huntingdon was responsible for collecting the required water quality samples and field parameter data during the monitoring period of January through December, 1994.

The monthly field-parameter data collected by Huntingdon during the monitoring period is presented in Table A-2. Huntingdon collected quarterly water quality samples on January 18, April 21, June 24, August 28, and December 20, 1994. The water quality samples were then sent to the Utah certified Huntingdon laboratory in Billings, Montana. The analytical laboratory results of the water samples taken by Huntingdon are summarized in Table A-4. A copy of the analytical data and the chain of custody documentation is included as Attachment A.

Field data sheets documenting the UPDES Permit outfall locations and the DOGM Baseline Water Quality monitoring locations are included as Attachment B.

In addition to the DOGM Baseline and the UPDES monitoring, Eckhoff, Watson and Preator Engineering (EWP) began a special study of the flows from the Coarse Refuse Seep. Events of the study were coordinated with the Division of Water Quality (DWQ) and DOGM. Three weirs were installed in April at the Source (CRS), Railroad Culvert (CRC), and the Permit Boundary (CRB). The values of flow before this time period were visually estimated by Huntingdon. EWP measured field parameters weekly and took water samples monthly.

The field parameter data collected by EWP is located in Table A-3. Laboratory testing on the samples collected by EWP was performed by Mountain States Analytical. The laboratory results are summarized in Table A-5. A copy of the analytical data and the chain of custody documentation is included as Attachment C. A copy of the field data sheets is included in Attachment D.

For decades the Sunnyside Coal Mine (SCC) has used the area now located within the SCA Permit Boundary as a refuse disposal site. Coarse refuse and slurry has been transported to and placed in and around the West and East Slurry Cells and Slurry Ponds #1 and #2. In January 1994, SCC significantly scaled back production and within a few months ceased operations. The slurry water had long been suspected as being a major contributor to the source of the Coarse Refuse Seep. Although the weirs were not installed to measure flows at the seep until April, there has been a significant reduction of flow measured at the three weirs. Continuing observations into the 1995 runoff season will help to determine if another source of water is contributing to the seep flows.

INTERPRETATION OF DATA

At the time of report preparation, the data collected from 1993, 1994, and the beginning of 1995 was on hand. The trends of the water quality for all locations in 1994 tend to be similar to the water quality of 1993 as well as 1995. This report compares the available parameters of water quality at each of the locations over time. The following evaluations of the Baseline sites were made during this report:

- Different water chemistry types of each location;
- Changes in water chemistry over time for each location;
- A comparison of specific conductivity, dissolved oxygen, total dissolved solids and temperature over time for each location.

Additional evaluations are included using data from the special study of the Coarse Refuse Seep conducted by EWP.

To facilitate the evaluation of different water chemistry types present and the changes in water chemistry at each location over time, the major ion data for the quarterly sampling by Huntingdon and the monthly data sampling by EWP were plotted on Stiff diagrams. The Stiff plots are included as figures A-1 through A-12.

A review of the Stiff plots indicates two distinct groupings of water chemistry noted by the following trends:

- The Icelander Creek, F-2 Spring (Whitmore Spring), and the Dragerton Well seem to have similar water chemistry. They have a balanced chemistry of Sodium and Sulfate and moderate amounts of Magnesium;
- The samples taken from the Coarse Refuse Seep contain water rich in sulfate, magnesium, and calcium.

The field parameter data as well as the laboratory results contain significant trends in the different types of water parameters. Figures A - 13 through A - 16 are graphs which compare the temperature, specific conductivity, dissolved oxygen and total dissolved solids of each of the flows over the period of January to December, 1994. The following observations can be made from the graphs:

- The temperature measured at the CRS is consistently higher than at the other Baseline sites.
- The Specific Conductivity of the CRS and CRB is much higher than the other Baseline sites;

- The dissolved oxygen (DO) of the CRS is significantly lower than at the other Baseline sites;

- The Total Dissolved Solids (TDS) of CRS and CRB samples was much higher than the other Baseline sites.

The elevated temperature of the CRS may be attributed to oxidation processes occurring within the refuse pile. The low values of DO at the CRS may be related to low turbulence in the ground water and / or oxidation processes in the coarse refuse material. The elevated values of TDS for the Coarse Refuse Seep flows may be the result of water percolating through the Mancos Shale and/or leaching of the refuse material which consists primarily of waste coal in direct contact with the Mancos Shale. The high readings of specific conductivity for the Coarse Refuse Seep samples reflect the large amount of dissolved solids and namely the ions present in the discharge.

The frequent monitoring of the Coarse Refuse Seep performed by EWP provided a good look at trends and fluctuations. Figures A-17 through A-25 are included to show some of these. The flows at the seep were not accurately measured prior to cessation of the operations of the Sunnyside Coal Mine (SCC). The estimates made by Huntingdon during times when SCC was sending slurry into the East Slurry Cell were commonly higher than 100 gpm. In May, after the three weirs were installed, flows were measured at the CRS at less than 13 gpm. By December, flows at the CRS had decreased to less than 3 gpm. Flow measurements at the CRC and CRB have larger fluctuations than at the CRS, and do not necessarily demonstrate decreasing trends as strongly. Continuing observations into the 1995 runoff season are expected to show whether or not an increase will occur.

The pH measured at the CRS, CRC, and CRB has shown a significant increase. This may be a result of a lesser portion of the water flowing through the refuse. None of the measurements performed by EWP indicated a pH at the CRS of less than 6.5.

Total Iron concentrations exist mostly in particle form and clearly decrease to negligible amounts by the time they reach the permit boundary. Fluctuations occurred at the CRS and a definite trend is not yet clear in Figure A-20. The total Boron concentration is largely made up of dissolved boron and did not have a major decrease in concentration between the CRS and CRB even though there was a large increase in flow. A significant portion of the total Manganese concentration is in the dissolved form but there is a clearly decrease in the concentration at the CRB when compared to the CRS.

As should be expected, as the flows at the CRS decreased throughout the year, the mass contribution of iron, boron, and manganese has also decreased. Figures A-23, A-24, and A-25 show these trends.

EWP will be continuing the study of the Coarse Refuse Seep through May 1995 on the same intensive frequency as was conducted during 1994. Additional analysis of the Coarse Refuse Seep Monitoring data is expected to be performed and compared with the Baseline data. This

additional analysis of the Baseline and the Coarse Refuse Seep Monitoring data will be used to help determine the extent of future monitoring activities.

ANALYTICAL VARIANCES

Two analytical differences between the work by Huntingdon and by EWP should be noted:

- The laboratory work performed on the samples taken by Huntingdon did not include analysis of potassium
- The laboratory work performed on the samples taken by EWP did not include analysis of Chloride ion

The lack of a value for potassium in the Huntingdon samples appears to be negligible when comparing the stiff diagrams of the Huntingdon samples to the stiff diagrams of the EWP samples. The amount of potassium detected in the EWP samples at the Coarse Refuse Seep did not significantly alter the shape of the stiff diagrams.

The Chloride ion was not part of the study performed by EWP because it was already being monitored by Huntingdon. The stiff diagrams for the EWP samples were drawn with Cl^- at zero. The Cl^- measured by Huntingdon was typically between five and ten meq/l. A modification to the EWP stiff diagrams to infer that Cl^- had similar quantities as in the Huntingdon samples could be justified.

Also, the laboratory detection of sulfate in the samples taken by EWP at the Coarse Refuse Seep during the month of November appears to be erroneous when compared to the values for the rest of the year. The sulfate parameter plotted on the stiff diagrams for the EWP samples during the month of November seem to be inconsistent with the other months. There may have been an error in the samples or the analysis for that month.

TABLES

Table A - 1

Compliance Monitoring Locations

Sunnyside Cogeneration Associates Facility
Sunnyside, Utah

DOGM Permit Boundary Water Quality Monitoring Plan

DOGM UPDES Permit Monitoring Locations

Outfall 004, Coal Runoff Basin
Outfall 007, Rail Cut Pond
Outfall 008, Old Coarse Refuse Road Pond
Outfall 009, Pasture Sediment Pond
Outfall 012, Coarse Refuse Toe Pond
Outfall 014, Coal Pile Sediment Pond
Outfall 016, Borrow Area Pond

DOGM Baseline Water Quality Monitoring Locations

ICE - 1 , Icelander Creek
F - 2, Whitmore Springs
CRS, Coarse Refuse Seep Source
CRB, Coarse Refuse Seep Boundary
WELL - 1, Draegerton Well

Table A - 2
Sunnyside Cogeneration Facility
Field Parameter Data performed by Huntingdon
Monitoring Period: January 1994, to June 1994

QUARTER 1		Jan/13/94					Feb/28/94					Mar/28/94				
		Field Parameters					Field Parameters					Field Parameters				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelander Creek	ICE - 1	5.1	8.29	2220	6.4	200ª	8.9	8.16	1450	7.3	150ª	12.9	7.90	2830	6.0	90ª
Columbia Dugway Spring	F - 2	5.6	8.51	1820	6.2	90ª	7.7	7.62	2180	6.9	35ª	13.6	8.01	1500	6.4	26ª
Coarse Refuse Seep Source	CRS	21.2	7.08	4750	2.4	100*	36.5	6.74	4470	0.9	100*	23.7	6.51	5400	1.4	100*
Coarse Refuse Seep Boundary	CRB	5.0	8.17	3100	6.0	200*	15.6	7.90	4370	6.8	120*	14.6	7.61	3500	6.5	120*
Draegerton Well	Well - 1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA
Coal Runoff Pond	Outfall 004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rail Cut Pond	Outfall 007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Old Coarse Refuse Road Pond	Outfall 008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pasture Sediment Pond	Outfall 009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coarse Refuse Toe Pond	Outfall 012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coal Pile Sediment Pond	Outfall 014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Borrow Area Pond	Outfall 016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

QUARTER 2		Apr/19/94					May/31/94					Jun/23/94				
		Field Parameters					Field Parameters					Field Parameters				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelander Creek	ICE - 1	17.2	8.23	2860	6.4	100ª	13.1	8.28	2257	9.9	300ª	21.9	8.74	2120	6.5	127°
Columbia Dugway Spring	F - 2	15.5	8.4	1800	8.6	36ª	12.5	8.16	1650	9.9	35ª	18.7	8.49	2130	7.0	60ª
Coarse Refuse Seep Source	CRS	26.9	6.83	4550	3.2	10ª	23.6	6.64	4650	1.9	8.5ª	37.2	6.88	5140	1.5	8.51^
Coarse Refuse Seep Boundary	CRB	19.3	7.96	4890	7.4	38ª	14.1	7.73	4599	9.0	20ª	20.9	7.99	4950	7.2	40^
Draegerton Well	Well - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.2	7.63	1710	7.2	50ª
Coal Runoff Pond	Outfall 004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Rail Cut Pond	Outfall 007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Old Coarse Refuse Road Pond	Outfall 008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Pasture Sediment Pond	Outfall 009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Coarse Refuse Toe Pond	Outfall 012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Coal Pile Sediment Pond	Outfall 014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Borrow Area Pond	Outfall 016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND

Note:

NA indicates that data is not available due to lack of discharge.

NS indicates that data is not available due to lack of sampling port.

Flow rates were measured as follows:

- * The flow rates were estimated due to a lack of an appropriate measuring location.
- ^ The flow rates were measured using a weir.
- ª The flow rates were measured using a calibrated container and a stopwatch.
- ° The flow rates were measured using the floating debris method.

Table A - 2 (continued)
Sunnyside Cogeneration Facility
Field Parameter Data performed by Huntingdon
Monitoring Period: July 1994, to December 1994

QUARTER 3		Jul/21/1994					Aug/22/1994					Sep/27/1994				
		Field Parameters					Field Parameters					Field Parameters				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelander Creek	ICE - 1	21.2	8.34	2150	7.1	127°	25.7	8.71	2170	6.3	5°	18.2	8.50	2341	15.4	4
Columbia Dugway Spring	F - 2	18.9	7.98	3401	7.9	43ª	22.4	7.85	3120	8.5	23ª	19.5	8.26	2218	14.9	7
Coarse Refuse Seep Source	CRS	25.9	6.96	5480	1.3	8.5^	27.5	7.01	5130	1.2	7.1^	26.2	6.58	5450	1.2	8.5
Coarse Refuse Seep Boundary	CRB	20.4	7.82	5200	6.8	40^	24.2	7.50	5130	7.3	36^	21.8	7.86	5180	7.8	40
Draegerton Well	Well - 1	15.0	8.37	1790	8.8	50ª	18.3	7.97	2270	7.9	NA	14.7	7.65	1511	9.4	NA
Coal Runoff Pond	Outfall 004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Rail Cut Pond	Outfall 007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Old Coarse Refuse Road Pond	Outfall 008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pasture Sediment Pond	Outfall 009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Coarse Refuse Toe Pond	Outfall 012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Coal Pile Sediment Pond	Outfall 014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Borrow Area Pond	Outfall 016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

QUARTER 4		Oct/19/94					Nov/21/94					Dec/19/94				
		Field Parameters					Field Parameters					Field Parameters				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelander Creek	ICE - 1	9.9	8.59	2491	8.8	120	1.1	8.84	2165	15.5	20	3.0	8.08	2392.5	15.4	6.0
Columbia Dugway Spring	F - 2	10.5	8.35	2340	8.6	30	3.4	8.63	2200	13.9	24	3.5	8.20	2310.0	15.6	26.0
Coarse Refuse Seep Source	CRS	21.1	6.86	5565	2.3	8.5	18.9	7.11	5088	5.3	4.7	20.4	6.77	4986.7	3.5	4.7
Coarse Refuse Seep Boundary	CRB	13.0	8.06	5320	7.8	48	6.1	8.44	5093	13.9	40	6.6	7.92	5214.0	14.9	40.0
Draegerton Well	Well - 1	12.2	8.41	644	7.8	NA	7.1	8.10	1215	10.9	NA	8.3	7.26	1428.3	8.6	NA
Coal Runoff Pond	Outfall 004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Rail Cut Pond	Outfall 007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Old Coarse Refuse Road Pond	Outfall 008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pasture Sediment Pond	Outfall 009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Coarse Refuse Toe Pond	Outfall 012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Coal Pile Sediment Pond	Outfall 014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Borrow Area Pond	Outfall 016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Note:
NA indicates that data is not available due to lack of discharge.
NS indicates that data is not available due to lack of sampling port.
Flow rates were measured as follows:
* The flow rates were estimated due to a lack of an appropriate measuring location.
^ The flow rates were measured using a weir.
ª The flow rates were measured using a calibrated container and a stopwatch.
° The flow rates were measured using the floating debris method.

Table A - 3

SUNNYSIDE COGENERATION ASSOCIATES
COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	19-May-94			27-May-94			8-Jun-94			16-Jun-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	8.5	29	48	12	36	52	8.5	40	48	7.1	29	40
Temperature C	25.50	15.92	15.55	25.80	17.79	16.77	24.40	16.97	15.50	26.97	19.06	19.62
pH	6.8	7.6	8.1	6.6	7.2	7.8	6.6	7.3	7.8	6.6	7.3	7.8
Spec. Cond mS	5.50	5.62	5.18	5.60	5.60	5.07	5.50	5.60	5.30	5.48	5.62	5.28
Disolved Oxygen mg/l	4.20	6.15	7.64	3.60	6.04	6.87	4.00	7.00	8.00	3.80	6.33	7.61

PARAMETER	23-Jun-94			30-Jun-94			8-Jul-94			14-Jul-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	7.1	29	36	7.1	32	40	7.1	32	40	7.1	32	32
Temperature C	27.9	20.37	22.75	24.32	18.10	15.90	25.61	18.80	17.60	26.01	20.30	19.75
pH	6.6	7.3	7.8	6.7	7.3	7.9	6.8	7.4	8.06	6.6	7.4	7.98
Spec. Cond mS	5.5	5.60	5.29	5.50	5.66	5.40	5.50	5.67	5.40	5.50	5.68	5.40
Disolved Oxygen mg/l	2.6	5.50	6.40	1.10	5.60	7.30	1.20	5.70	7.40	1.90	5.70	7.02

PARAMETER	21-Jul-94			29-Jul-94			4-Aug-94			11-Aug-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	7.1	29	26	7.1	32	48	8.5	32	36	7.1	32	48
Temperature C	26.6	21.2	22.6	25.3	19.8	17.5	25.5	20.6	18.3	25.2	19.7	18.5
pH	6.8	7.5	7.9	6.9	7.5	8.1	6.9	7.5	8.2	6.9	7.6	8.2
Spec. Cond mS	5.5	5.7	5.4	5.6	5.7	5.5	5.5	5.8	5.5	5.5	5.7	5.6
Disolved Oxygen mg/l	1.5	5.0	6.1	1.0	5.3	7.3	1.1	5.2	6.6	1.4	5.1	6.8

PARAMETER	19-Aug-94			26-Aug-94			31-Aug-94			9-Sep-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	7.1	32	36	7.1	32	29	5.8	32	26	5.8		48
Temperature C	24.6	19.4	17.2	23.9	19.5	16.1	25.6	20.7	20.3	24.9	20.1	17.6
pH	6.9	7.6	8.2	6.9	7.6	8.2	6.9	7.6	8.2	7.0	7.5	8.3
Spec. Cond mS	5.5	5.7	5.6	5.5	5.7	5.6	5.5	5.8	5.6	5.5	5.2	5.5
Disolved Oxygen mg/l	2.0	5.8	6.9	1.5	5.3	6.9	1.2	5.2	7.4	1.5	4.9	7.2

PARAMETER	16-Sep-94			20-Sep-94			29-Sep-94			6-Oct-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	5.8		40	8.5		40	7.1	32	40	8.5	32	40
Temperature C	23.3	18.0	14.2	23.9	19.8	16.0	24.3	18.7	15.0	22.8	16.7	12.7
pH	7.2	7.8	8.4	7.1	8.0	8.3	7.2	7.8	8.4	7.2	7.9	8.5
Spec. Cond mS	5.5	5.6	5.50	5.5	5.5	5.5	5.5	5.7	5.5	5.5	5.7	5.5
Disolved Oxygen mg/l	1.6	6.0	7.80	1.6	6.1	7.6	1.4	5.3	7.5	1.4	5.5	8.5

PARAMETER	13-Oct-94			21-Oct-94			28-Oct-94			4-Nov-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	7.1	32	36	7.1	32.0	40	4.7	29.0	40	4.7	29.0	40
Temperature C	22.7	17.8	13.0	23.1	14.9	12.6	22.1	15.2	9.9	22.3	14.7	9.1
pH	7.3	7.9	8.5	7.3	8.3	8.6	7.4	7.9	8.6	7.3	7.9	8.5
Spec. Cond mS	5.5	5.7	5.50	5.5	5.7	5.4	5.0	5.7	5.5	5.4	5.7	5.4
Disolved Oxygen mg/l	1.6	5.4	7.70	1.5	7.0	8.3	1.6	5.8	8.4	1.5	5.9	8.1

PARAMETER	9-Nov-94			17-Nov-94			22-Nov-94			9-Dec-94		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	4.7	29	40	4.7	26	32	4.7	23	29	2.1	21	32
Temperature C	22.4	14.4	9.0	22.4	14.0	9.1	18.1	11.0	7.0	17.9	11.3	5.4
pH	7.4	7.9	8.7	7.4	7.9	8.6	7.5	8.0	8.8	7.7	8.1	8.8
Spec. Cond mS	5.5	5.7	5.5	5.4	5.6	5.6	5.5	5.1	5.2	5.5	5.6	5.4
Disolved Oxygen mg/l	1.6	5.8	8.6	1.8	5.9	8.1	2.3	6.5	7.3	2.7	5.4	7.7

Table A - 3 (continued)

SUNNYSIDE COGENERATION ASSOCIATES
COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	15-Dec-94			22-Dec-94			6-Jan-95			12-Jan-95		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	2.8	26	40	2.8	21	40	2.1	21	40	2.1	21	40
Temperature C	17.3	12.2	5.9	18.1	13.4	7.0	17.3	11.2	3.7	17.5	11.1	5.2
pH	7.7	8.1	8.9	7.6	8.0	8.9	7.8	8.0	9.1	7.8	8.1	8.9
Spec. Cond mS	3.0	5.5	5.4	5.5	4.5	5.3	5.4	5.6	5.3	5.5	5.4	5.4
Disolved Oxygen mg/l	2.8	4.9	7.5	2.8	5.6	7.6	2.7	5.6	9.0	2.6	5.0	8.0

PARAMETER	21-Jan-95			27-Jan-95			1-Feb-95			9-Feb-95		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	2.1	21	40	2.1	26	40	2.1	32	40	2.1	36	43
Temperature C	17.6	11.3	6.0	17.3	11.2	5.8	18.1	11.7	5.2	17.1	11.8	5.7
pH	7.8	8.2	9.1	7.8	8.1	9	7.8	8.3	9.1	7.5	8.1	8.9
Spec. Cond mS	5.4	5.5	5.3	5.5	5.5	5.4	2.6	4.8	5.2	4.9	5.1	5.4
Disolved Oxygen mg/l	2.0	4.5	8.3	2.4	4.4	8.0	2.0	4.4	7.1	2.7	4.5	7.2

PARAMETER	23-Feb-95			28-Feb-95			1-Mar-95			9-Mar-95		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	2.1	36	40	2.1	32	40	2.1	32	40	2.8	32	40
Temperature C	18.0	11.2	5.8	19.8	11.9	5.4	19.8	11.3	5.9	18.5	11.8	6.0
pH	7.9	8.0	9.0	8.1	8.3	8.8	8.1	8.0	8.7	7.8	8.1	8.8
Spec. Cond mS	5.1	5.5	5.4	5.6	5.2	5.1	5.4	5.6	5.3	5.0	5.5	5.2
Disolved Oxygen mg/l	2.5	4.8	8.0	2.1	5.1	7.8	2.6	4.9	8.1	2.7	5.6	7.8

Table A - 4
Sunnyside Cogeneration Associates Facility
Quarterly Compliance Sampling Results June 1993 to December 1994
(Monitoring performed by Huntingdon)

SAMPLE LOCATION		Analytical Parameters															
		Metals (mg/l)													Inorganics (mg/l)		
		Aluminum Dissolved	Arsenic Dissolved	Boron Dissolved	Cadmium Dissolved	Copper Dissolved	Iron Dissolved	Iron Total	Lead Dissolved	Mangenese Dissolved	Mangenese Total	Molybdenum Dissolved	Selenium Dissolved	Zinc Dissolved	Electrical Conductivity	Oil & Grease	Sulfide as S
ICE - 1	06/93	0.2	<0.002	0.3	<0.003	<0.02	<0.05	0.08	<0.01	<0.02	<0.02	<0.05	<0.002	<0.02	na	<1	<1
	10/93	0.1	<0.002	0.3	<0.001	<0.02	<0.05	<0.05	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2410	<1	<1
	1/94	<0.5	<0.002	<0.5	<0.001	<0.10	<0.25	0.3	<0.002	<0.1	<0.1	<0.25	<0.002	<0.1	2260	2	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.35	<0.002	<0.2	0.1	<0.5	<0.002	<0.2	2800	<1	na
	7/94	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	0.07	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2220	<1	na
	9/94	0.3	<0.002	0.2	<0.001	<0.02	<0.05	0.16	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2350	<1	na
	12/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.26	<0.002	<0.04	<0.02	<0.05	0.003	<0.02	2500	<1	na
F - 2	06/93	0.2	<0.002	0.3	<0.003	<0.02	<0.05	0.26	<0.01	<0.02	0.04	<0.05	<0.002	<0.02	na	<1	<1
	10/93	0.2	<0.002	0.3	<0.001	<0.02	<0.05	0.41	<0.002	0.04	0.06	<0.05	<0.002	1.02	2240	3	<1
	1/94	<0.5	<0.002	<0.5	<0.001	<0.10	<0.25	0.3	<0.002	<0.1	0.1	<0.25	<0.002	<0.1	1830	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.3	<0.002	<0.2	0.1	<0.5	<0.002	<0.2	2280	<1	na
	7/94	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	0.54	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2280	<1	na
	9/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.54	<0.002	<0.02	0.04	<0.05	<0.002	<0.02	2260	<1	na
	12/94	<0.1	<0.002	0.1	<0.001	<0.02	0.08	0.1	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	1300	<1	na
CRS (HUNT)	06/93	0.6	<0.002	1.0	<0.003	<0.02	<0.12	8.9	<0.01	1.75	1.5	<0.1	<0.002	0.08	na	<1	<1
	10/93	0.5	<0.002	1.1	<0.001	<0.02	6.3	47	<0.002	1.35	2.2	<0.05	<0.002	0.33	5310	<1	<1
	1/94	<0.5	0.005	1.0	<0.001	<0.10	12	21	<0.002	0.33	0.6	<0.25	<0.002	<0.1	4640	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	4.63	11	<0.002	1.9	1.65	<0.5	<0.002	<0.2	5550	4	na
	7/94	0.1	0.002	1.0	<0.001	<0.02	8.4	9.6	<0.002	0.64	0.69	<0.05	<0.002	<0.02	5520	<1	na
	9/94	0.2	0.002	0.6	<0.001	<0.02	9.5	10.4	<0.002	1.08	1.56	<0.05	<0.002	<0.02	5280	<1	na
	12/94	0.2	<0.002	1.2	<0.001	<0.06	9.2	10.2	<0.002	1.38	1.75	<0.05	<0.002	<0.02	5410	<1	na
CRB (HUNT)	06/93	0.6	<0.002	0.7	<0.003	<0.02	<0.12	<0.12	<0.01	<0.02	<0.02	<0.1	<0.002	0.1	na	<1	<1
	10/93	0.5	<0.002	1.0	<0.001	<0.02	19.2	*<0.05	<0.002	1.35	*<0.02	<0.05	<0.002	0.35	4860	1	1
	1/94	<0.5	<0.002	0.7	<0.001	<0.10	<0.25	<0.25	<0.002	<0.2	<0.1	<0.25	<0.002	<0.1	4890	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.01	<0.002	0.2	<0.1	<0.5	<0.002	<0.2	4960	<1	na
	7/94	<0.1	<0.002	0.6	<0.001	<0.02	*<0.25	*<0.15	<0.002	*<0.1	*<0.06	0.07	<0.002	0.03	5160	<1	na
	9/94	0.3	<0.002	0.8	<0.001	<0.02	<0.25	<0.25	<0.002	*<0.1	*<0.06	<0.05	<0.002	<0.02	5460	<1	na
	12/94	0.3	<0.002	0.9	<0.001	<0.06	<0.15	0.18	<0.002	0.12	0.15	<0.05	<0.002	<0.02	5190	<1	na
WELL	06/93	<0.1	<0.002	0.2	<0.003	<0.02	<0.05	<0.0	<0.01	<0.02	<0.02	<0.05	<0.002	0.02	na	<1	6
	10/93	<0.1	<0.002	0.3	<0.001	<0.02	<0.05	0.14	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2100	<1	<1
	1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	7/94	<0.1	<0.002	0.1	<0.001	<0.02	<0.05	0.1	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	1830	2	nd
	9/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.1	<0.002	<0.02	0.03	<0.05	<0.002	<0.02	1520	<1	nd
	12/94	0.1	<0.002	0.2	<0.001	<0.02	0.28	0.3	<0.002	0.08	0.09	<0.05	0.004	<0.02	2280	<1	nd
004	06/93	nd	nd	nd	nd	nd	nd	0.7	nd	nd	nd	nd	nd	nd	nd	5	nd
	10/93	na	<0.002	na	<0.003	<0.02	na	0.33	<0.01	na	na	na	<0.002	0.08	na	<1	na
	1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	7/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	9/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	12/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

Note:
A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.
* - Higher detection limit reported due to the interferences present in the sample.
na - not applicable
nd - no discharge

Table A - 4 (continued)

SAMPLE LOCATION		Analytical Parameters															
		Inorganics (mg/l)			Anions (mg/l)					Cations (mg/l)				Nutrients (mg/l)			
		Settleable Solids	Dissolved Solids	Suspended Solids	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity	Chloride as Cl	Sulfate as SO4	Calcium as Ca	Hardness as CaCO3	Magnesium as Mg	Sodium as Na	Ammonia as N	Nitrite as N	Nitrate as N	Phosphorous Total
ICE - 1	06/93	<0.1	1920	8	505	0	414	66	1060	126	944	153	318	0.31	<0.05	1.72	0.02
	10/93	<0.2	1600	<2	593	0	486	65	777	90	660	105	340	<0.05	<0.05	0.77	0.05
	1/94	<0.1	1780	11	519	0	425	59	943	110	850	140	298	0.13	<0.05	0.69	0.05
	4/94	<0.1	1860	71	443	11	382	60	985	108	854	142	294	0.08	na	0.32	0.02
	7/94	<0.1	1590	<4	541	11	463	62	782	96	759	126	288	<0.05	<0.05	0.48	0.03
	9/94	<0.1	1580	7	509	17	446	67	742	60	618	114	320	0.11	<0.05	0.05	0.02
	12/94	<0.1	1780	9	593	14	510	74	770	104	787	128	312	<0.05	<0.05	0.5	0.02
F - 2	06/93	<0.1	1910	10	569	0	466	64	985	144	965	147	306	<0.05	0.06	1.54	0.02
	10/93	<0.2	1500	9	622	0	510	59	700	102	650	96	300	0.11	<0.05	0.88	0.06
	1/94	<0.1	1390	<5	605	0	496	44	632	94	690	110	260	<0.05	<0.05	0.97	<0.02
	4/94	<0.1	1430	7	553	11	472	56	644	97	712	114	274	<0.05	na	0.75	0.02
	7/94	<0.1	1500	<5	593	11	505	56	700	108	738	114	273	<0.05	<0.05	0.94	0.02
	9/94	<0.1	1540	8	601	6	502	60	690	96	697	111	256	<0.05	<0.05	0.48	<0.02
	12/94	<0.1	894	3	492	0	403	23	290	72	452	66	141	<0.05	<0.05	0.66	<0.02
CRS (HUNT)	06/93	0.2	5210	15	553	0	453	97	3380	570	2945	370	550	1.86	<0.05	0.38	0.23
	10/93	<0.2	5200	41	548	0	449	96	2930	558	2800	342	543	1.73	<0.05	0.33	0.68
	1/94	0.4	4930	16	570	0	467	97	3180	560	2800	340	530	2.11	<0.05	0.22	0.76
	4/94	<0.1	4890	34	553	0	453	101	2960	558	2890	350	515	1.42	na	<0.05	0.27
	7/94	<0.1	4910	14	559	0	458	105	3080	597	2980	363	501	1.26	<0.05	0.37	0.17
	9/94	<0.1	5410	25	608	0	498	106	2930	546	2630	309	471	1.33	<0.05	0.22	0.15
	12/94	<0.1	5300	19	608	0	498	101	2930	561	2710	318	525	1.58	<0.05	<0.05	0.14
CRB (HUNT)	06/93	<0.1	4610	<2	394	0	323	131	3010	513	2638	330	483	0.11	<0.05	1.34	<0.02
	10/93	<0.2	4700	<5	384	0	315	116	2710	550	2810	350	555	<0.05	<0.05	1.07	0.05
	1/94	<0.1	4320	<5	369	0	302	121	2780	490	2400	290	450	<0.05	<0.05	1.33	<0.02
	4/94	<0.1	4620	10	380	0	311	134	2630	494	2666	309	450	<0.05	na	0.73	0.02
	7/94	<0.1	4490	<5	398	0	326	166	2820	480	2470	310	475	<0.05	<0.05	0.44	0.04
	9/94	<0.1	5230	<5	405	0	332	213	2780	486	2460	303	450	<0.05	<0.05	0.39	0.02
	12/94	<0.1	5070	<1	440	0	361	197	2800	570	2780	330	507	0.07	<0.05	0.7	<0.02
WELL	06/93	<0.1	1250	<2	599	0	491	34	510	93	578	84	231	<0.05	<0.05	0.9	<0.02
	10/93	<0.2	1400	<2	599	0	491	47	604	99	590	84	276	<0.05	<0.05	1.21	0.05
	1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	7/94	<0.1	1180	<5	593	0	486	33	479	78	515	78	7	<0.05	<0.05	0.85	<0.02
	9/94	<0.1	981	<5	463	0	379	30	412	81	511	75	144	<0.05	<0.05	0.8	<0.02
	12/94	<0.1	1690	<2	650	14	557	70	740	117	823	129	291	<0.05	<0.05	0.44	<0.02
004	06/93	nd	1180	61	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	10/93	na	1200	66	580	10	493	86	436	24	134	18	432	na	na	na	na
	1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	7/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	9/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	12/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

Note:
A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.
* - Higher detection limit reported due to the interferences present in the sample.
na - not applicable
nd - no discharge

Table A - 5

SUNNYSIDE COGENERATION ASSOCIATES
COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	19-May-94			16-Jun-94			21-Jul-94		
mg/l	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
NON-FILTERED SAMPLES									
Boron	1.01	1.01	0.75	1.14	1.06	0.91	1.05	1.04	0.9
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	482	447	430	525	479	478	492	441	452
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	7.21	2.49	0.12	7.17	2.03	ND	6.73	3.99	ND
Magnesium	312	312	281	347	333	321	315	308	303
Manganese	1.32	0.56	ND	1.57	0.56	ND	1.46	0.68	ND
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	33.1	33.9	25.3	40.3	37.1	30.9	34.8	33.7	28
Sodium	492	503	437	473	498	486	441	428	440
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity-Bicarbonate	456	382	302	466	390	302	480	394	306
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids	24	11	ND	21	8	ND	22	28	ND
Total Dissolved Solids	5170	5110	4360	5580	5500	5170	5280	5550	5190
Hardness CaCO3	2640	2620	2400	2860	2800	2530	2900	2840	2610
Nitrogen-Ammonia	0.9	ND	ND	1.3	ND	ND	1.2	ND	ND
BOD total	<6	<6	<6	ND	ND	ND	<6	<6	<2
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenolics	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acidity	51	21	7	43	13	3	52	25	8
Sulfate	2960	3080	2800	3130	3160	2790	3210	3430	3140
FILTERED SAMPLES									
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	0.99	1.00	0.74	1.16	1.05	0.91	1.12	1.1	0.86
Calcium	469	451	429	518	465	469	515	466	431
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	ND	0.12	ND	0.15	0.14	ND	0.31	0.23	0.13
Magnesium	301	311	277	344	327	315	334	330	288
Manganese	1.27	0.52	ND	1.52	0.54	ND	1.49	0.62	ND
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	32.6	32.3	24.8	40.4	36.7	30.2	37.4	36.8	26.7
Sodium	469	490	439	475	490	477	477	468	415

PARAMETER	25-Aug-94			20-Sep-94						27-Oct-94		
mg/l	CRS	CRC	CRB	CRS		CRC		CRB		CRS	CRC	CRB
NON-FILTERED SAMPLES												
Boron	1.03	1.10	0.91	1.01	1.03	1.04	1.08	0.82	0.79	1.1	1.08	0.85
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	473	485	464	471	476	445	453	441	432	500	493	454
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	7.07	3.47	ND	8.78	8.84	15.6	3.9	ND	ND	8.73	4.48	0.12
Magnesium	301	341	313	297	303	309	320	295	287	316	344	303
Manganese	1.35	0.87	ND	1.43	1.45	1.41	1.13	0.07	0.07	1.45	1.14	0.21
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	33.9	36.7	28.9	35.7	36.3	36.5	38.2	28.2	27	37	36.6	27.8
Sodium	421	474	448	437	440	441	461	426	406	455	486	428
Alkalinity-Bicarbonate	480	388	314	470		386		322		486	424	348
Alkalinity-Carbonate	ND	ND	ND	ND		ND		ND		ND	ND	ND
Alkalinity-Hydroxide	ND	ND	ND	ND		ND		ND		ND	ND	ND
Total Suspended Solids	18	17	ND	67		14		ND		20	29	ND
Total Dissolved Solids	2190	5330	5120	5490		5680		5240		5450	5520	5190
Hardness CaCO3	3000	2850	2730	2650		2950		2550		2850	2860	2740
Nitrogen-Ammonia	1.2	ND	ND	1.7		ND		ND		1.7	ND	ND
Acidity	60.4	36.2	20	72		22		12		59	31	2
Sulfate	3310	3330	3560	3260		3820		3070		4220	2650	2590
FILTERED SAMPLES				13-Oct-94								
Aluminum	ND	ND	ND	ND		ND		ND		ND	ND	ND
Boron	1.06	1.13	0.95	1.13		1.14		0.86		0.96	1.13	0.88
Calcium	474	487	483	503		483		470		432	473	469
Copper	ND	ND	ND	ND		ND		ND		ND	ND	ND
Iron	0.55	0.29	ND	ND		ND		ND		0.18	ND	ND
Magnesium	304	344	327	318		338		313		274	340	316
Manganese	1.33	0.56	ND	1.47		1.3		0.19		1.26	1.32	0.22
Nickel	ND	ND	ND	ND		ND		ND		ND	ND	ND
Potassium	34.5	37.6	30.2	37.5		39.2		29.2		32	38.1	29
Sodium	435	487	465	466		491		453		395	485	448
Iron (total)				8.99		3.5		0.14				
Total Suspended Solids				21		9		ND				

Table A - 5 (continued)

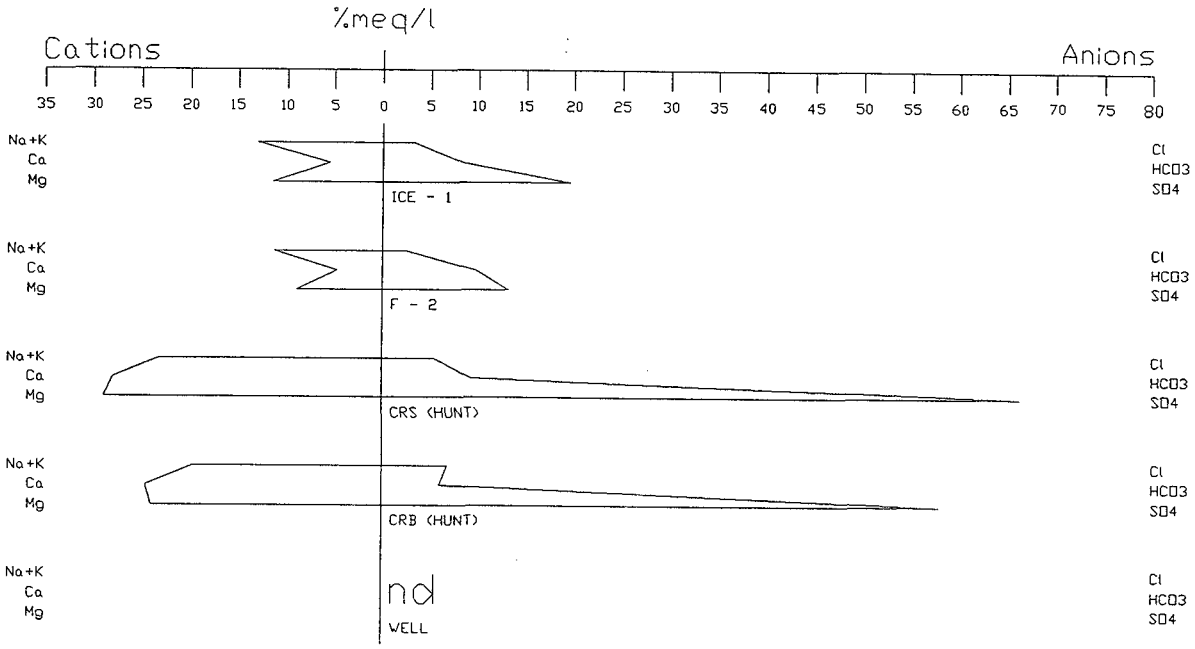
SUNNYSIDE COGENERATION ASSOCIATES
COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	22-Nov-94			22-Dec-94			21-Jan-95		
mg/l	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
NON-FILTERED SAMPLES									
Boron	1.1	1.10	0.8	1.2	1.1	0.9	1.0	0.9	0.7
Iron	7.19	7.49	ND	7.53	6.45	ND	6.15	3.60	0.12
Manganese	1.46	1.24	0.24	1.49	1.22	0.21	1.37	0.82	0.17
Alkalinity-Bicarbonate	460	420	342	478	422	344	478	392	346
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids	16	18	ND	19	16	ND	6	8	ND
Total Dissolved Solids	5430	5660	5200	5360	5530	5200	5480	5340	5030
Hardness CaCO3	2730	2710	2560	2740	2740	2650	2820	2800	2650
Nitrogen-Ammonia	1.5	0.6	ND	1.7	0.6	ND	1.7	ND	ND
Acidity	101	49.4	12.2	62.2	42.4	9	107	49	6
Sulfate	629	652	643	3240	3320	2860	3340	3480	3070
FILTERED SAMPLES									
Boron	1.2	1.1	0.8	1.2	1.1	0.8	1.0	0.8	0.7
Calcium	542	486	476	521	494	490	468	428	428
Iron	1.36	0.59	ND	1.05	0.19	ND	2.04	0.45	ND
Magnesium	345	349	311	333	357	324	293	297	280
Manganese	1.6	1.34	0.25	1.49	1.15	0.21	137	0.81	0.17
Potassium	40.3	36.5	27.2	39.6	37.7	29.5	32.6	27.2	23.3
Sodium	526	527	475	493	524	470	423	396	377

PARAMETER	28-Feb-95								
mg/l	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
NON-FILTERED SAMPLES									
Boron	1.3	1.0	0.9						
Iron	8.26	4.19	ND						
Manganese	1.64	0.78	0.11						
Alkalinity-Bicarbonate	484	404	330						
Alkalinity-Carbonate	ND	ND	ND						
Alkalinity-Hydroxide	ND	ND	ND						
Total Suspended Solids	12	16	ND						
Total Dissolved Solids	4950	5070	4780						
Hardness CaCO3	2960	2760	2580						
Nitrogen-Ammonia	1.7	ND	ND						
Acidity	63	35.8	5.0						
Sulfate	3270	3220	2940						
FILTERED SAMPLES									
Boron	1.4	1.1	0.9						
Calcium	545	487	511						
Iron	2.43	0.27	ND						
Magnesium	350	341	342						
Manganese	1.62	0.97	0.11						
Potassium	41.2	33	29.5						
Sodium	482	447	427						

FIGURES

January 1994



ECKHOFF WATSON AND PREATOR ENGINEERING

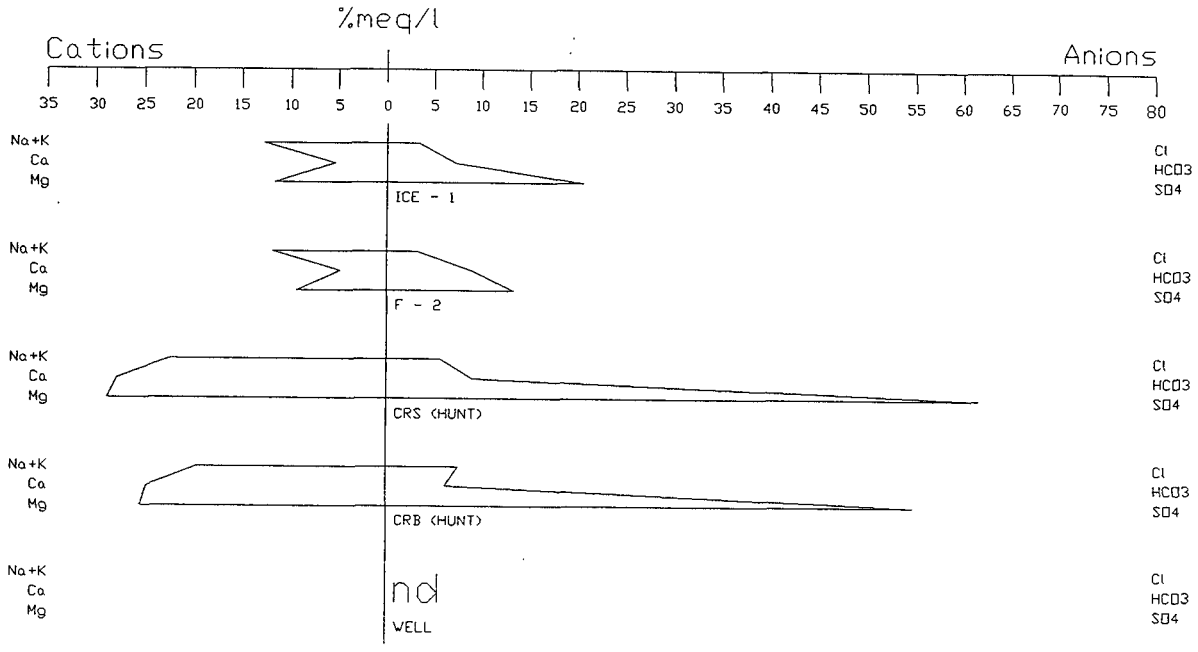
ENGINEERS PLANNERS SURVEYORS

Figure A-1

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

April 1994



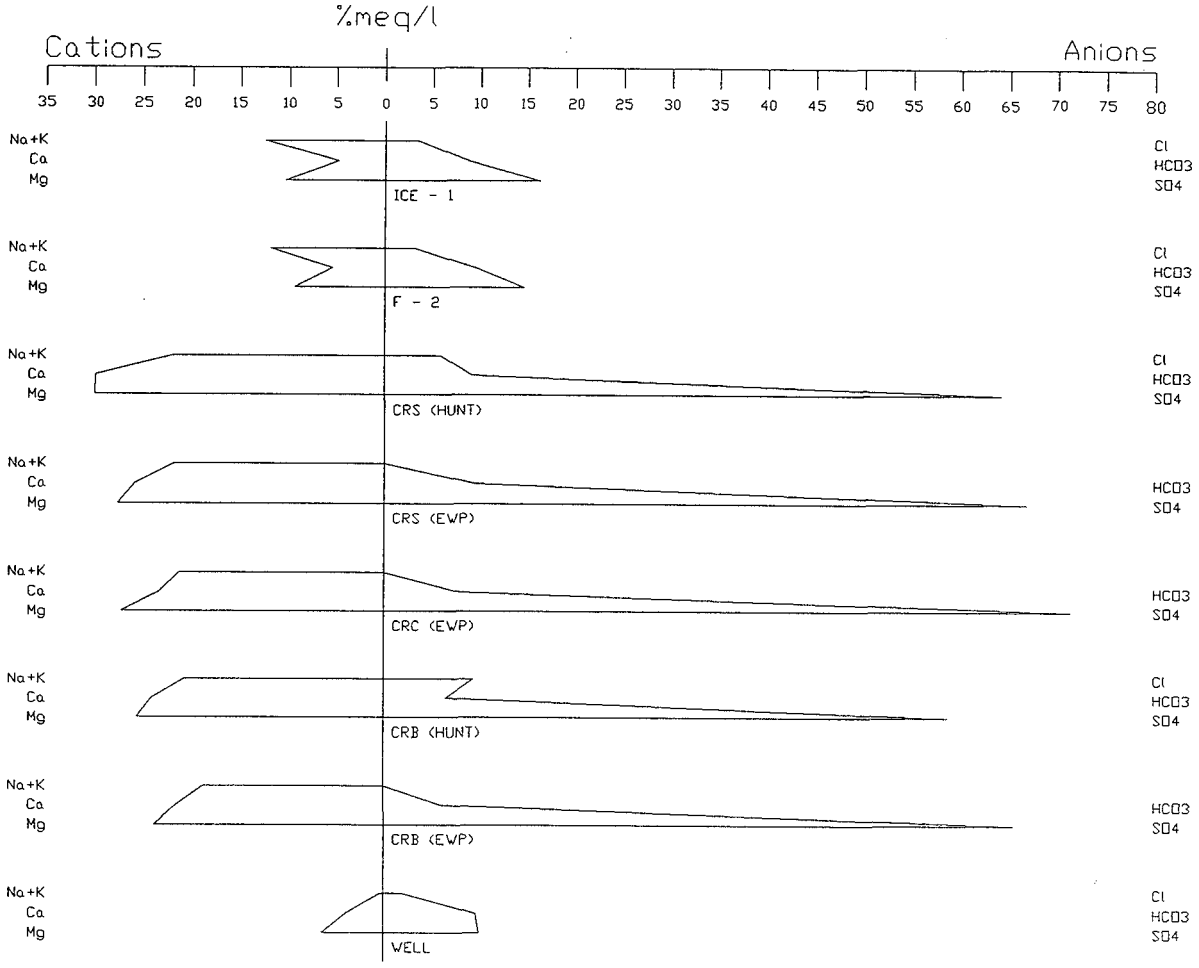
ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS

Figure A-2

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

July 1994



ECKHOFF WATSON AND PREATOR ENGINEERING

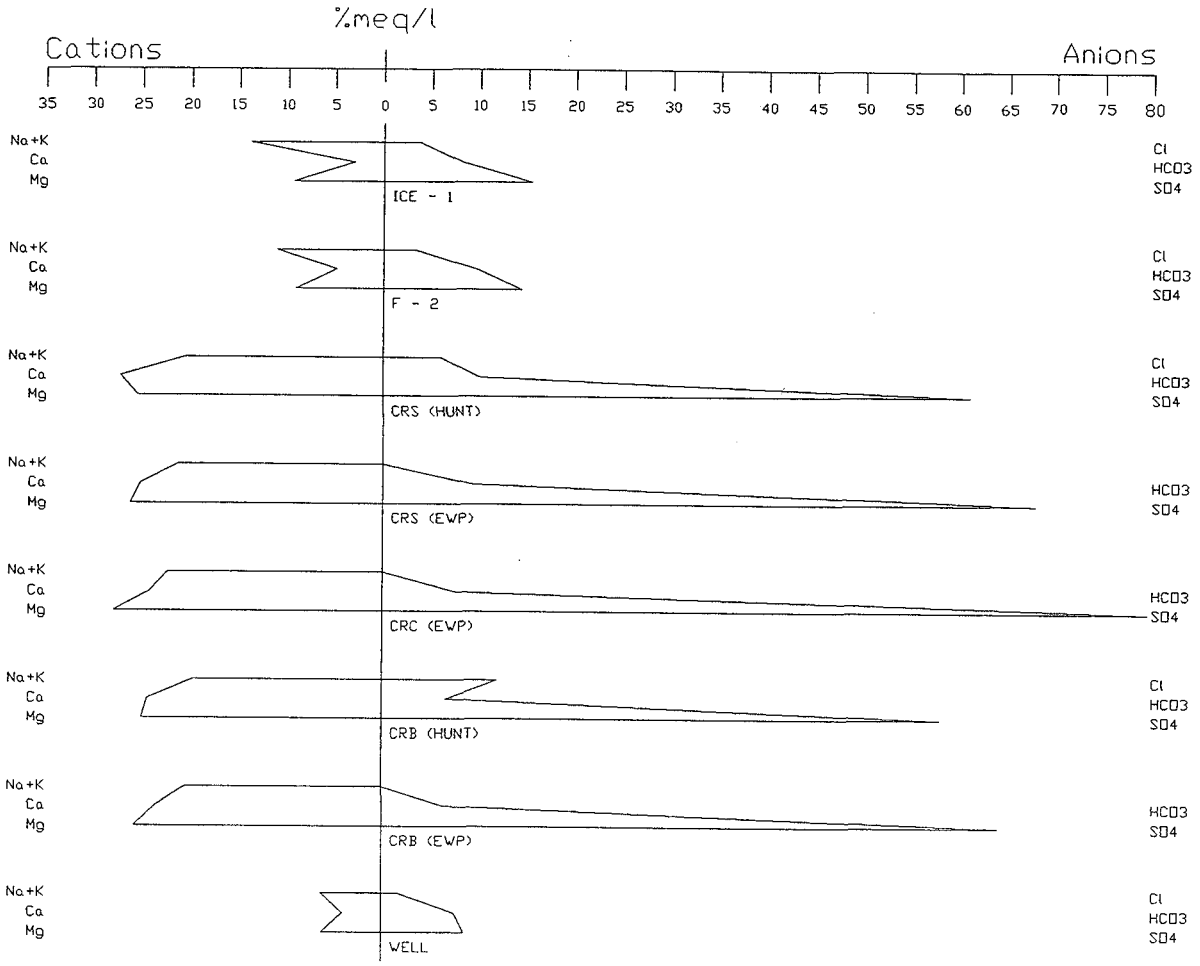
ENGINEERS PLANNERS SURVEYORS

Figure A-3

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

September 1994



ECKHOFF WATSON AND PREATOR ENGINEERING

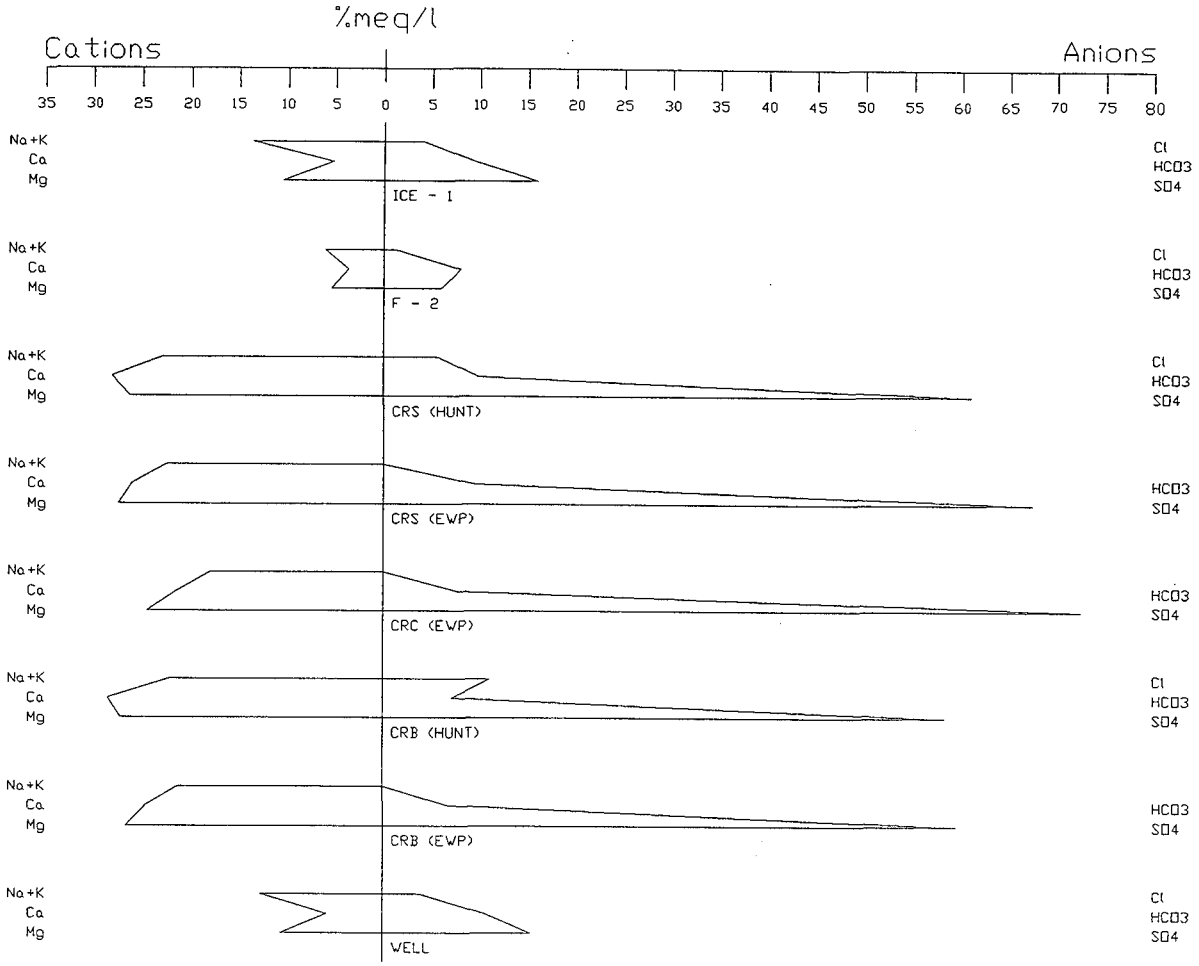
ENGINEERS PLANNERS SURVEYORS

Figure A-4

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

December 1994



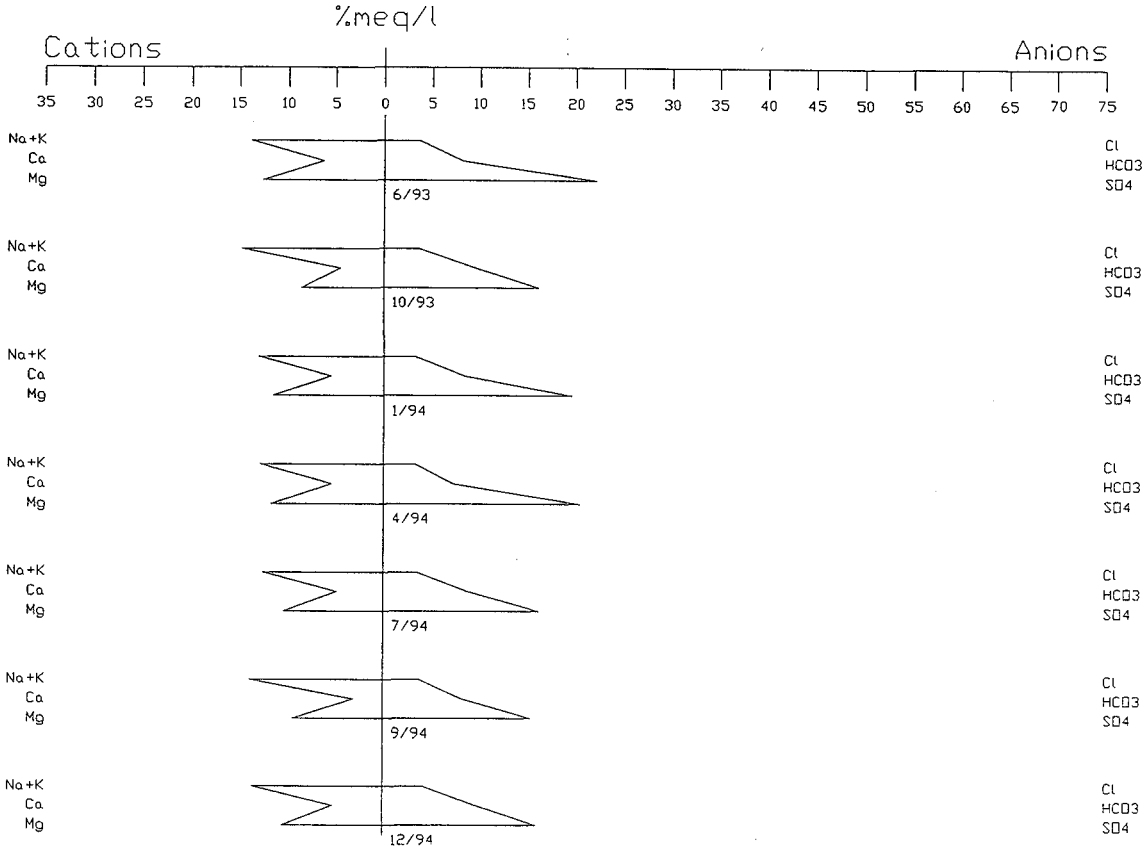
ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS

Figure A-5

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

ICE - 1



ECKHOFF WATSON AND PREATOR ENGINEERING

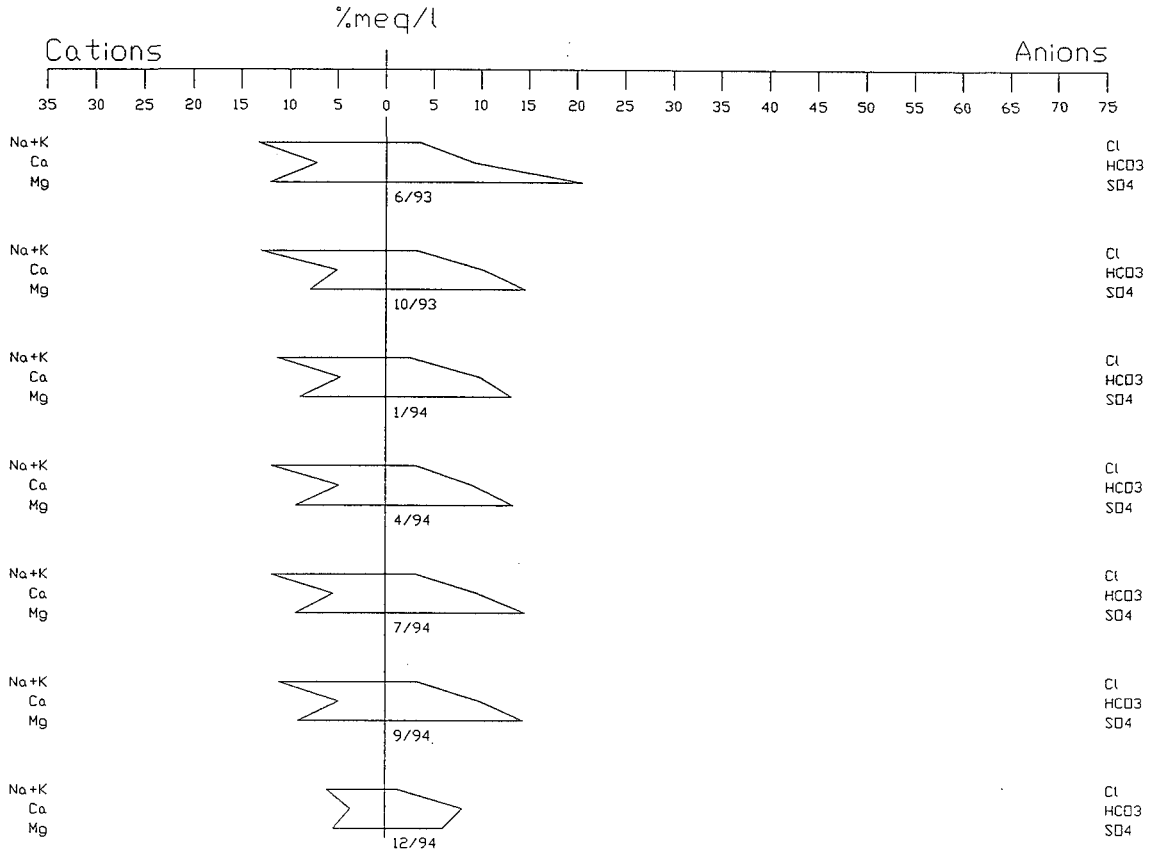
ENGINEERS PLANNERS SURVEYORS

Figure A-6

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

F - 2



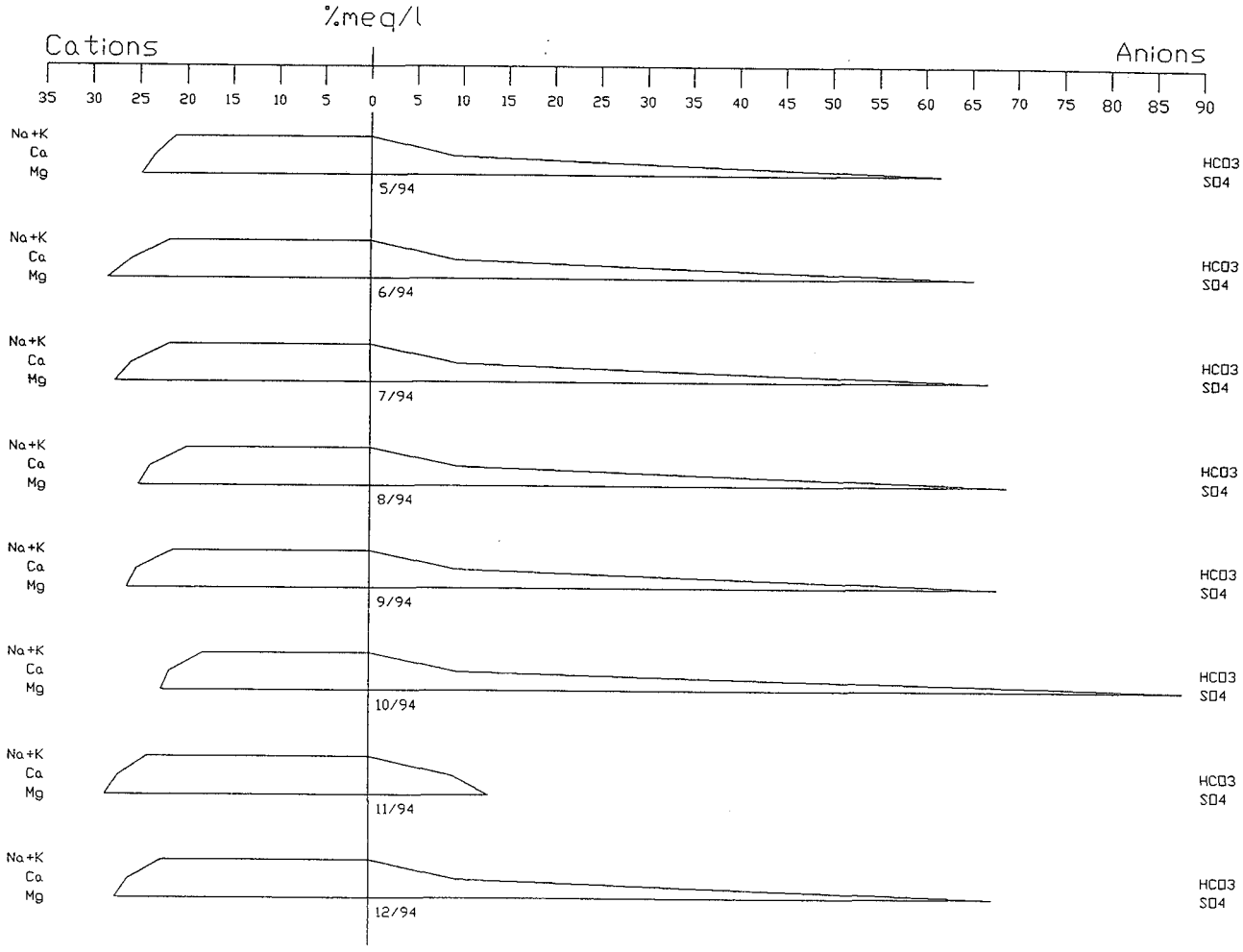
ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS

Figure A-7

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

COARSE REFUSE SEEP AT THE SOURCE - CRS (EWP)



ECKHOFF WATSON AND PREATOR ENGINEERING

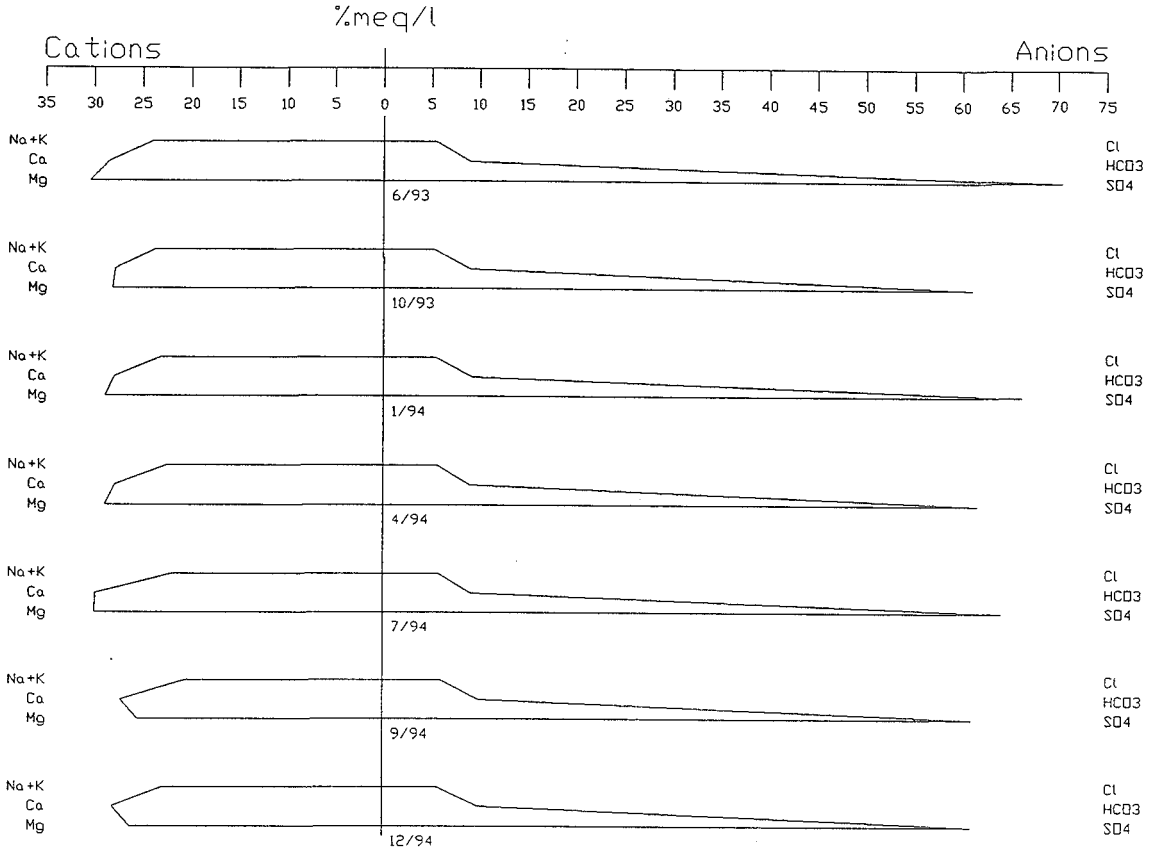
ENGINEERS PLANNERS SURVEYORS

Figure A-8

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

COARSE REFUSE SEEP AT THE SOURCE - CRS (HUNT)



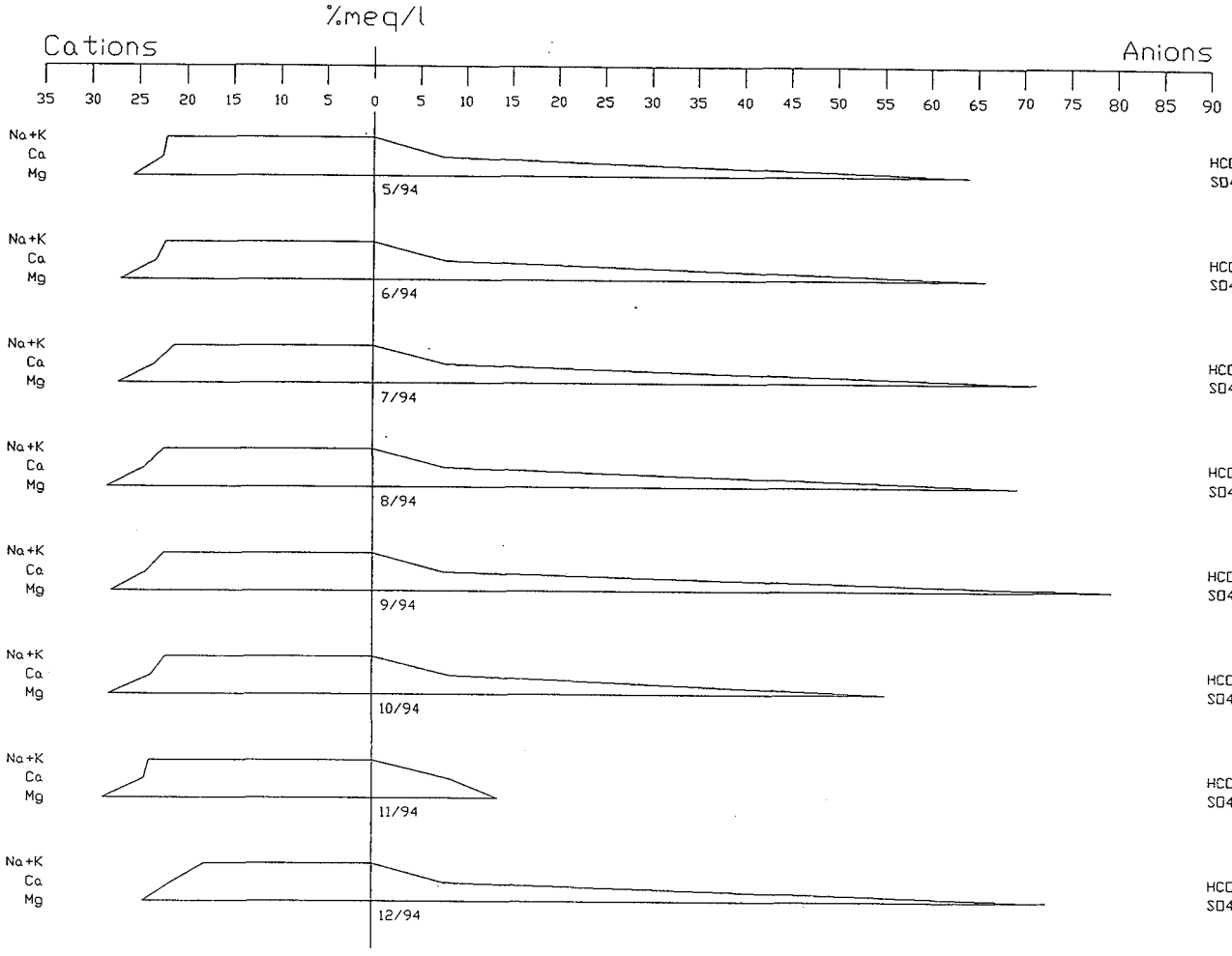
ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS

Figure A-9

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

COARSE REFUSE SEEP AT THE CULVERT - CRC (EWP)



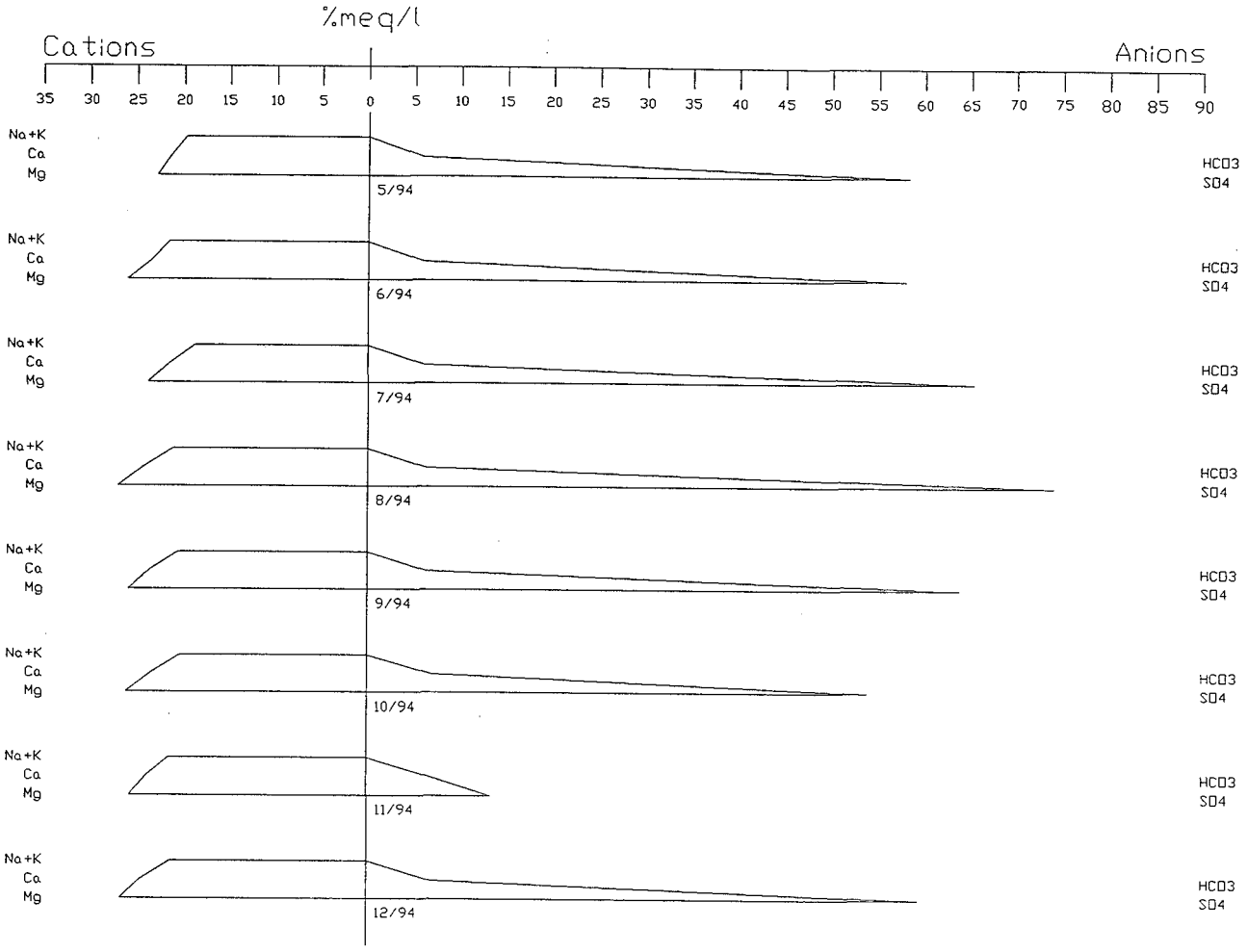
ECKHOFF WATSON AND PREATOR ENGINEERING

ENGINEERS PLANNERS SURVEYORS Figure A-10

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

COARSE REFUSE SEEP AT THE BOUNDARY - CRB (EWP)



ECKHOFF WATSON AND PREATOR ENGINEERING

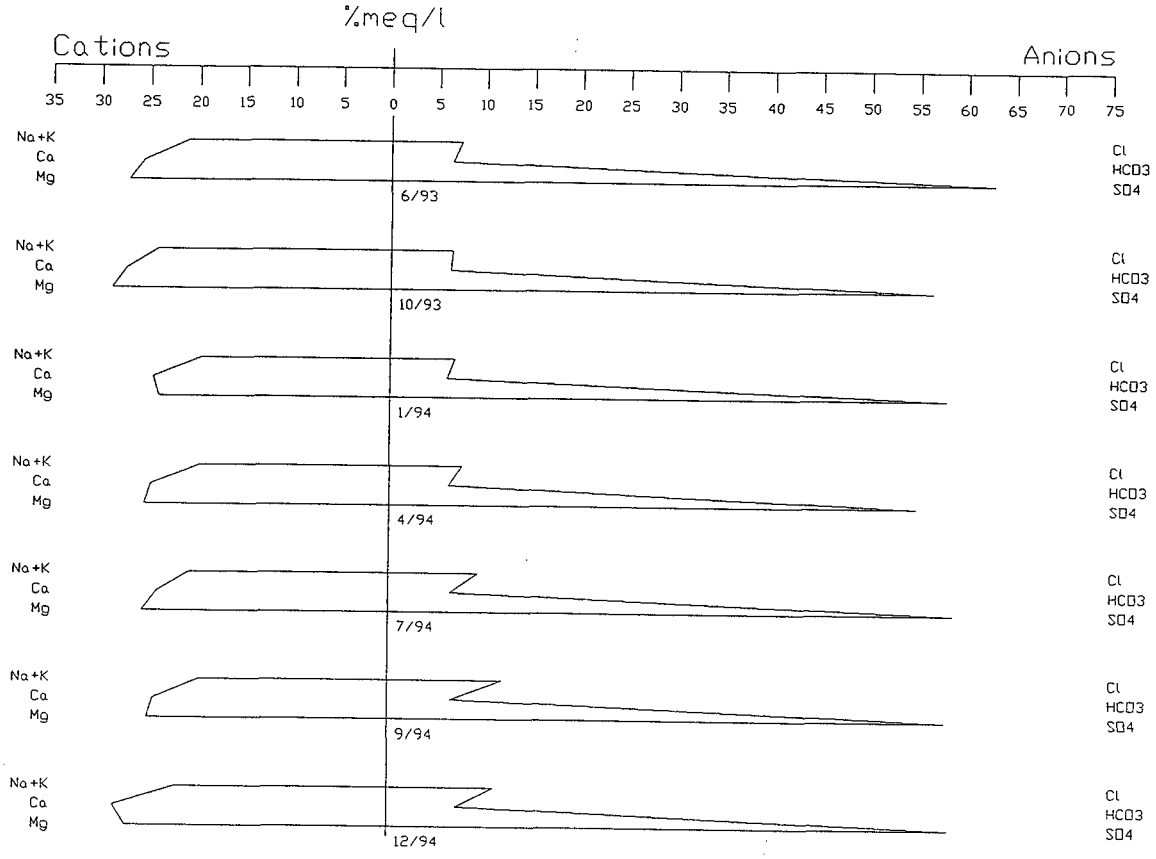
ENGINEERS PLANNERS SURVEYORS

Figure A-11

SUNNYSIDE COGENERATION ASSOCIATES

1994 Annual Report - Water Quality Analysis

COARSE REFUSE SEEP AT THE BOUNDARY - CRB (HUNT)



ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS

Figure A-12

SUNNYSIDE COGENERATION ASSOCIATES
1994 Annual Report - Water Quality Analysis

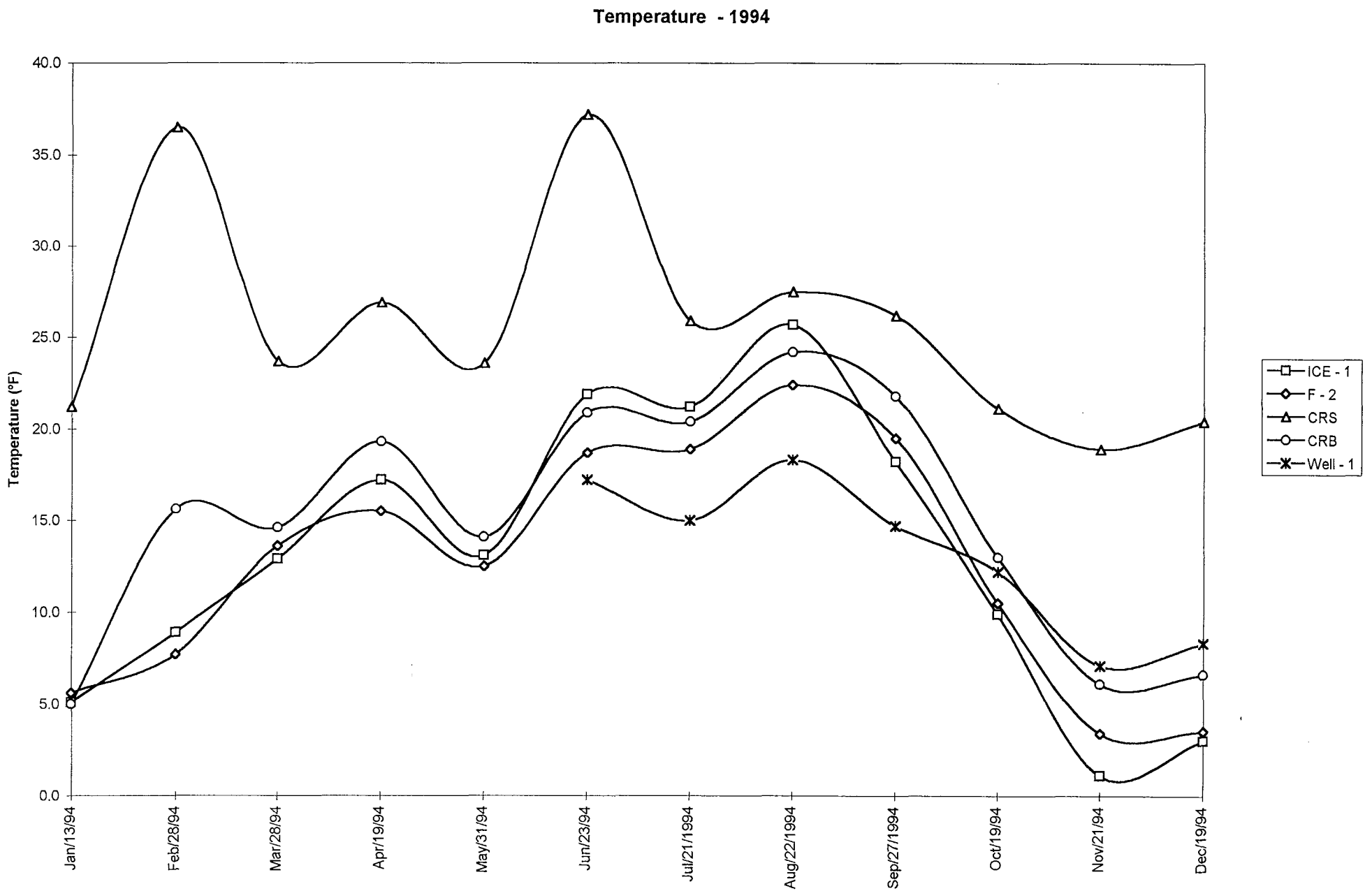


Figure A - 13

ECKHOFF, WATSON AND PREATOR ENGINEERING

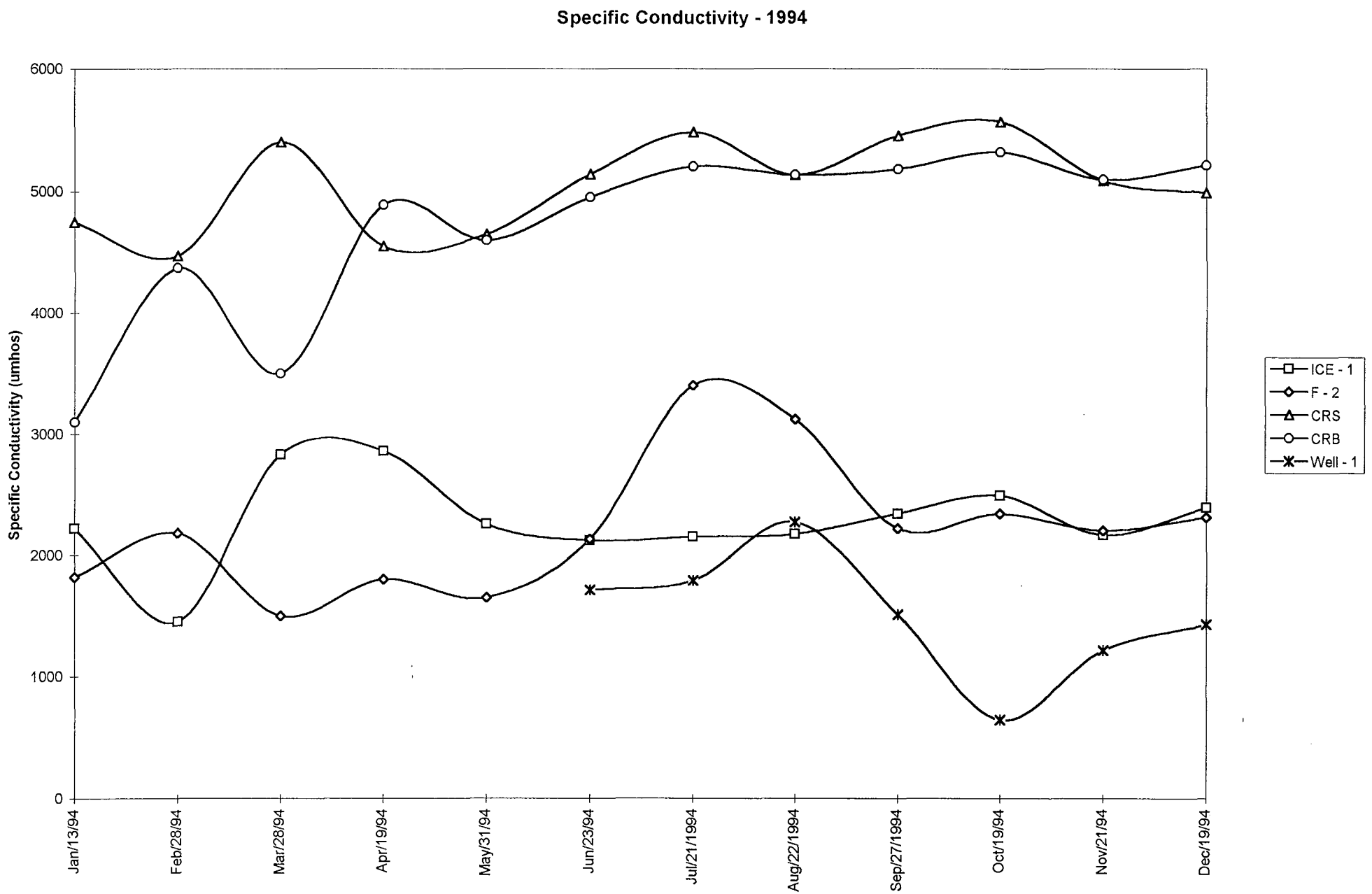


Figure A - 14

ECKHOFF, WATSON AND PREATOR ENGINEERING

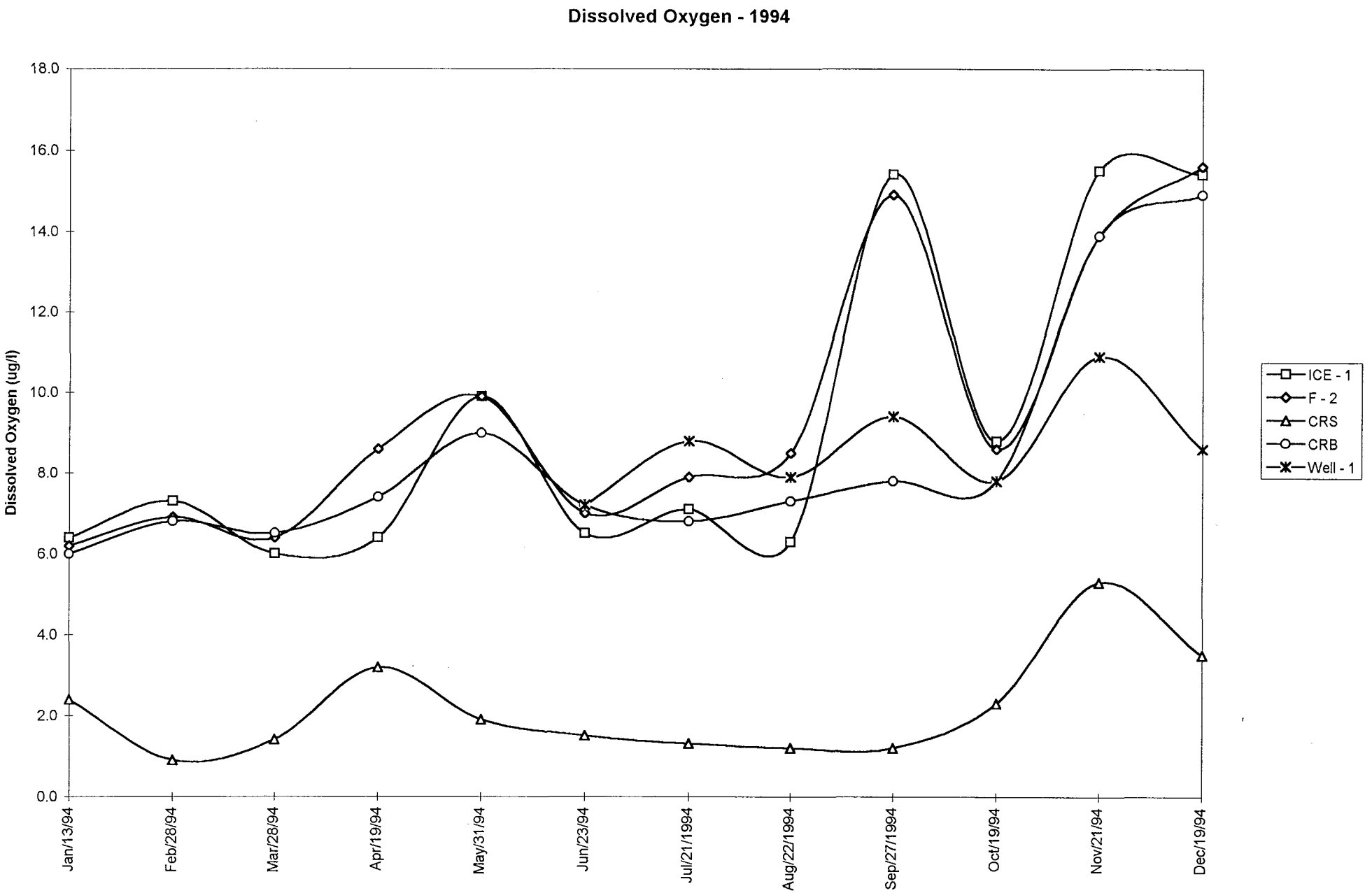


Figure A - 15

ECKHOFF, WATSON AND PREATOR ENGINEERING

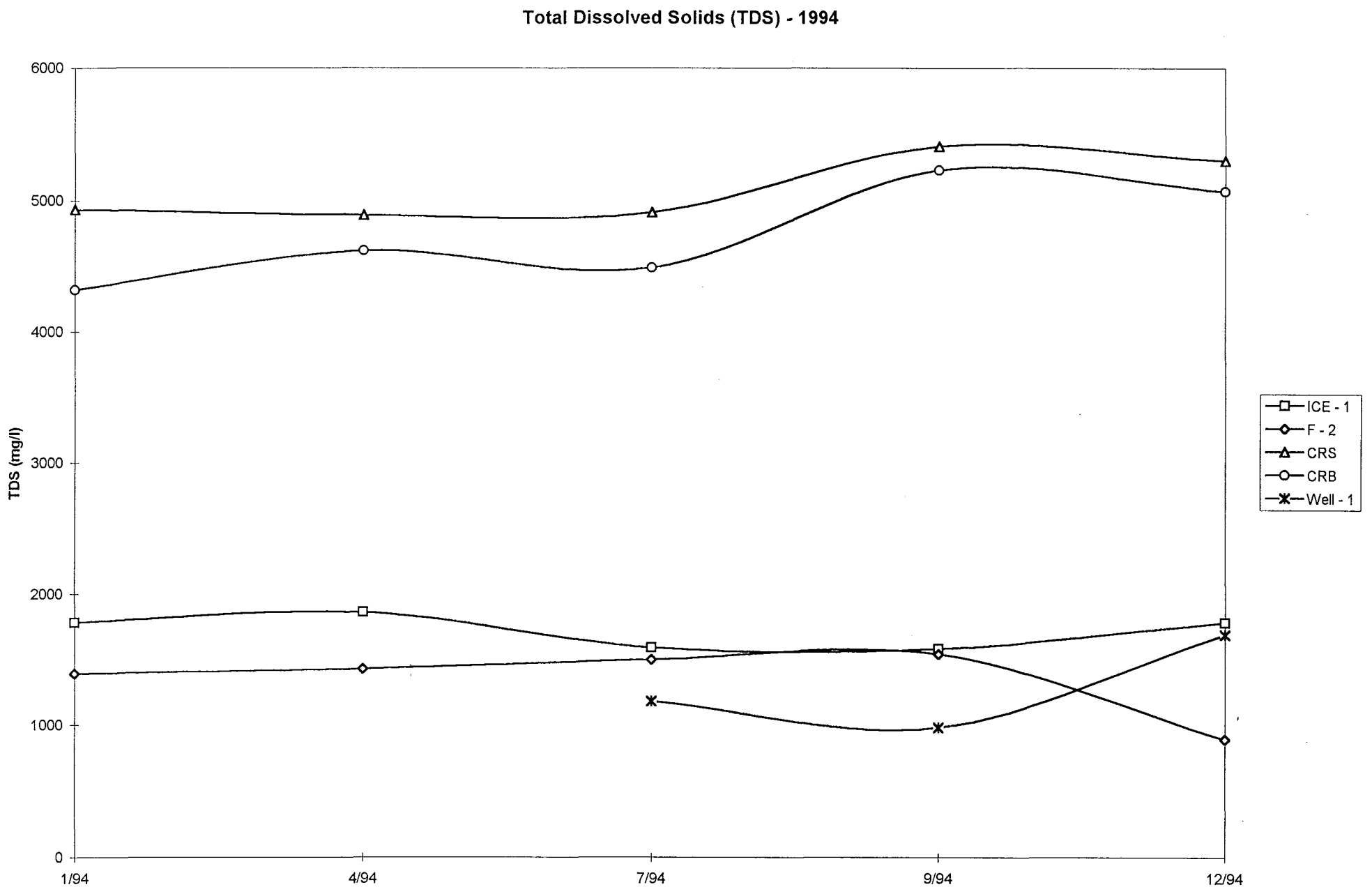
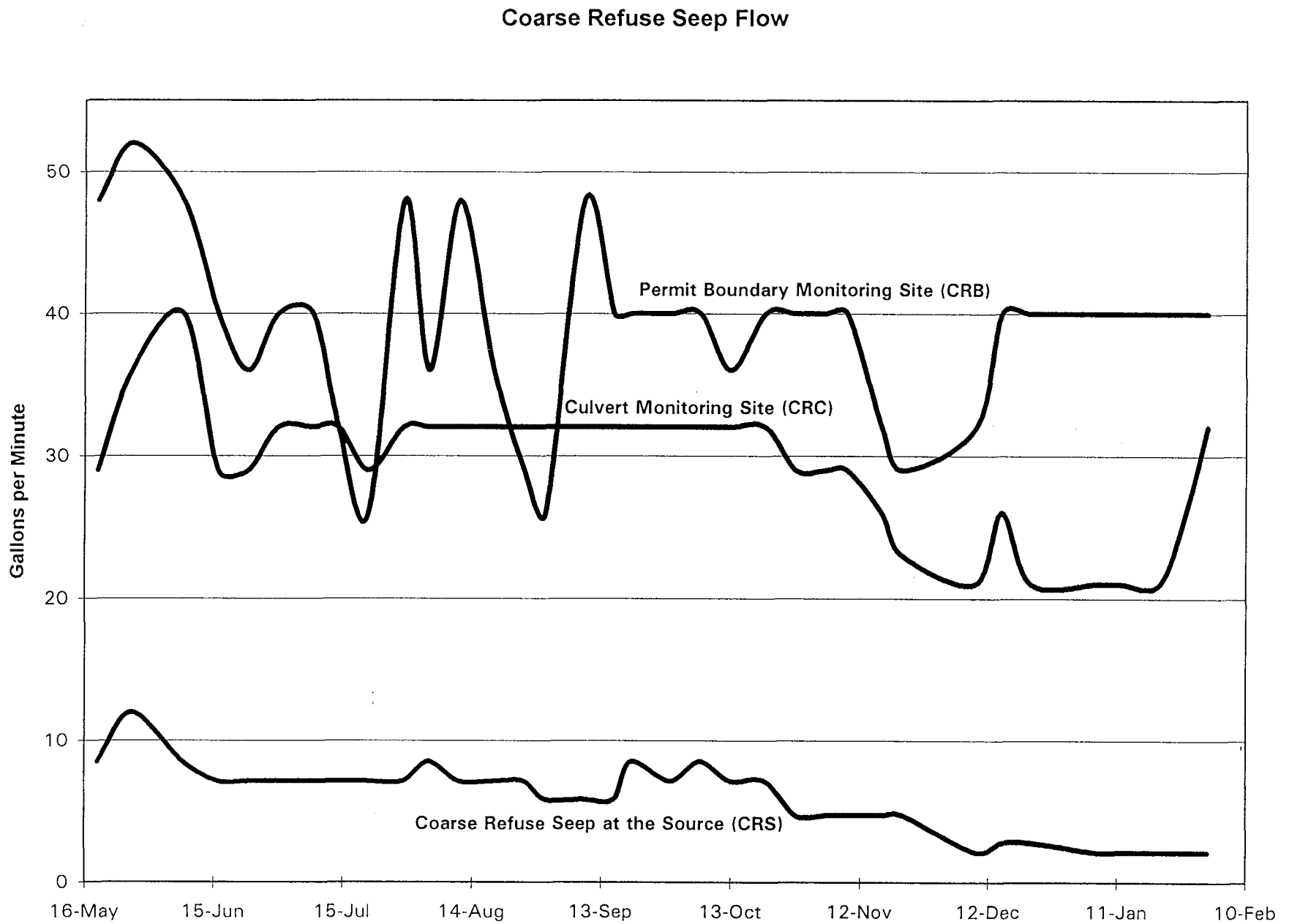
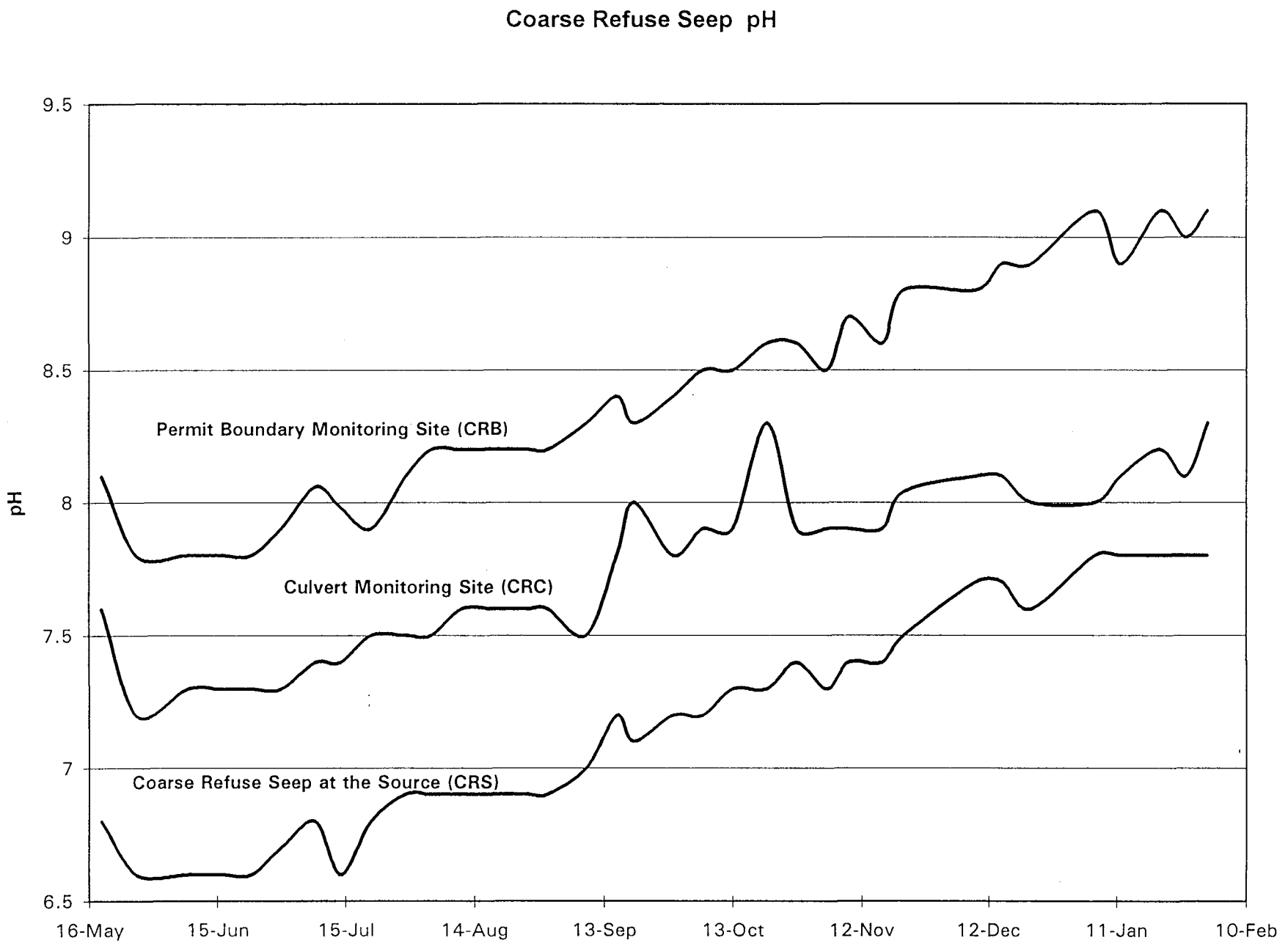


Figure A - 16

ECKHOFF, WATSON AND PREATOR ENGINEERING

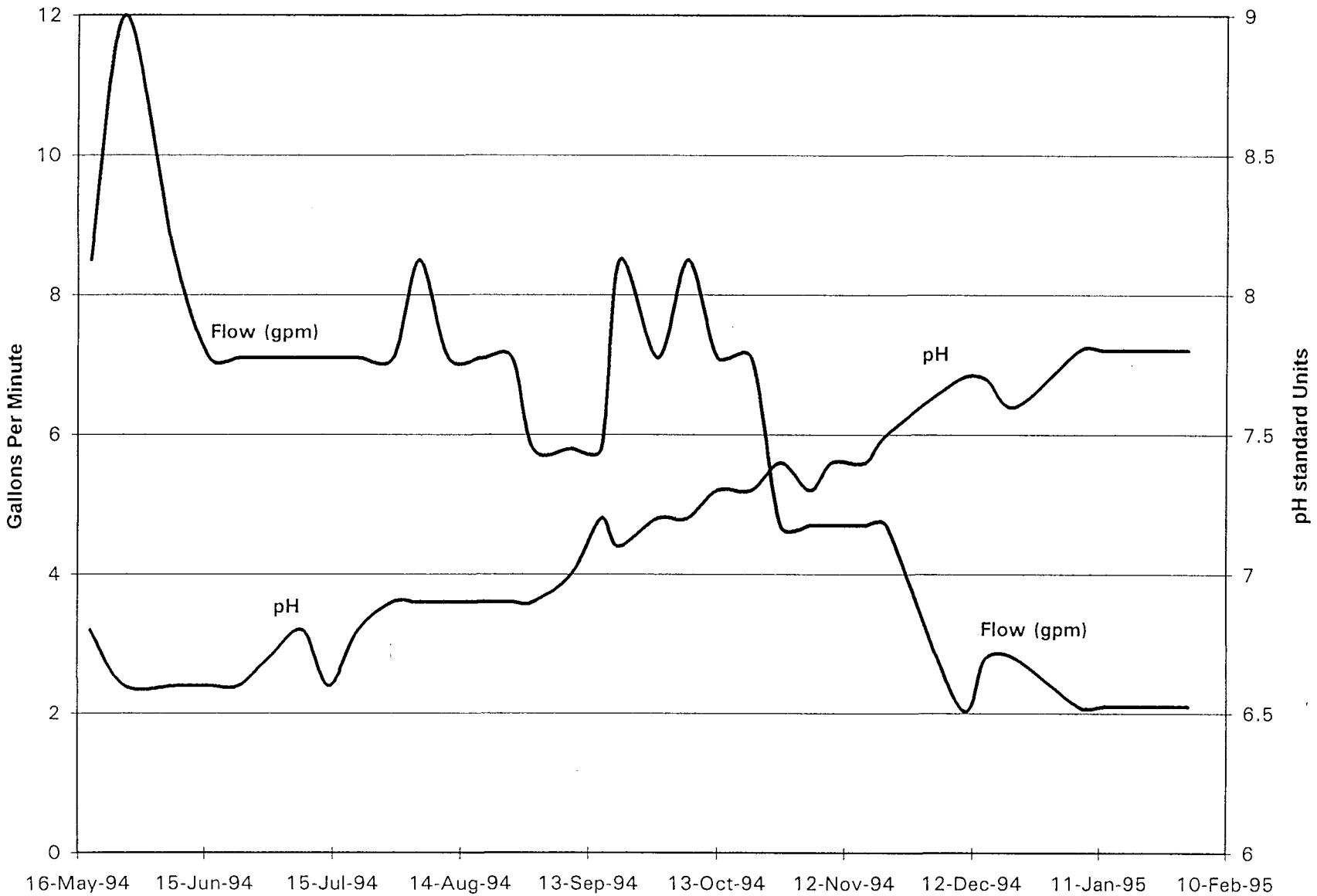


FLOW Figure A-17 2/17/95

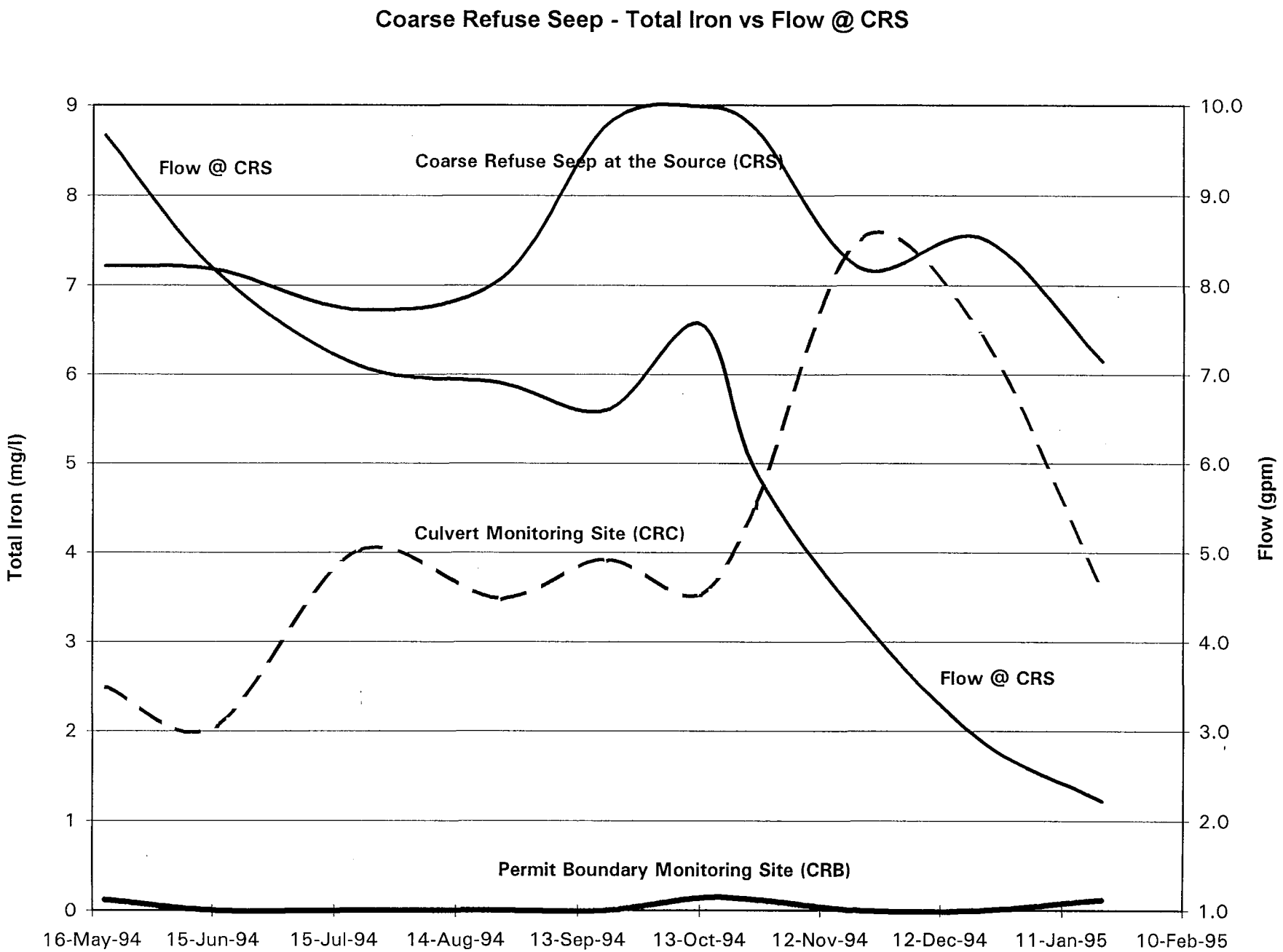


pH Figure A-18 2/17/95

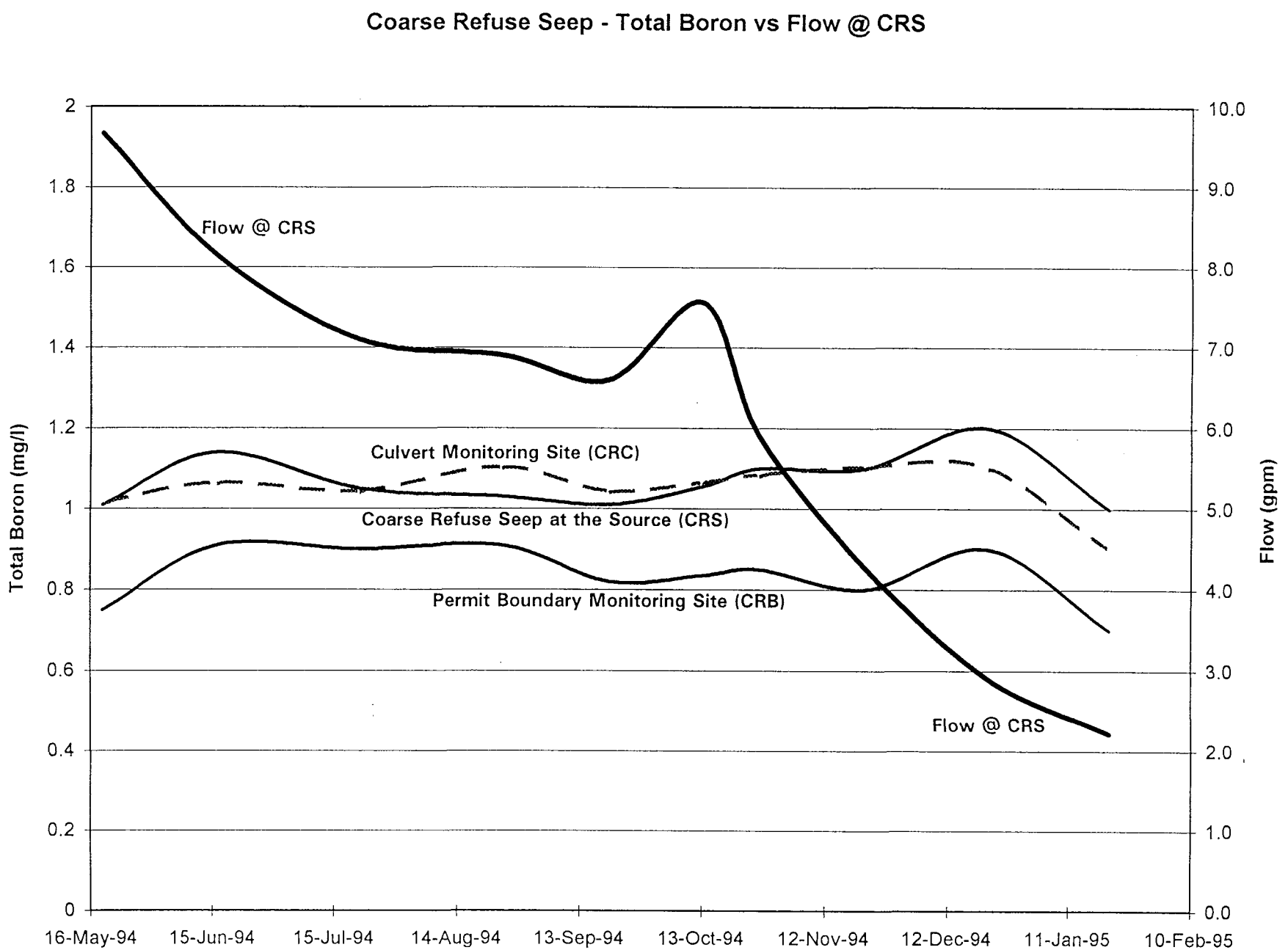
Coarse Refuse Seep - Flow vs pH at CRS



Flow-vs-pH@CRS Figure A-19 2/17/95



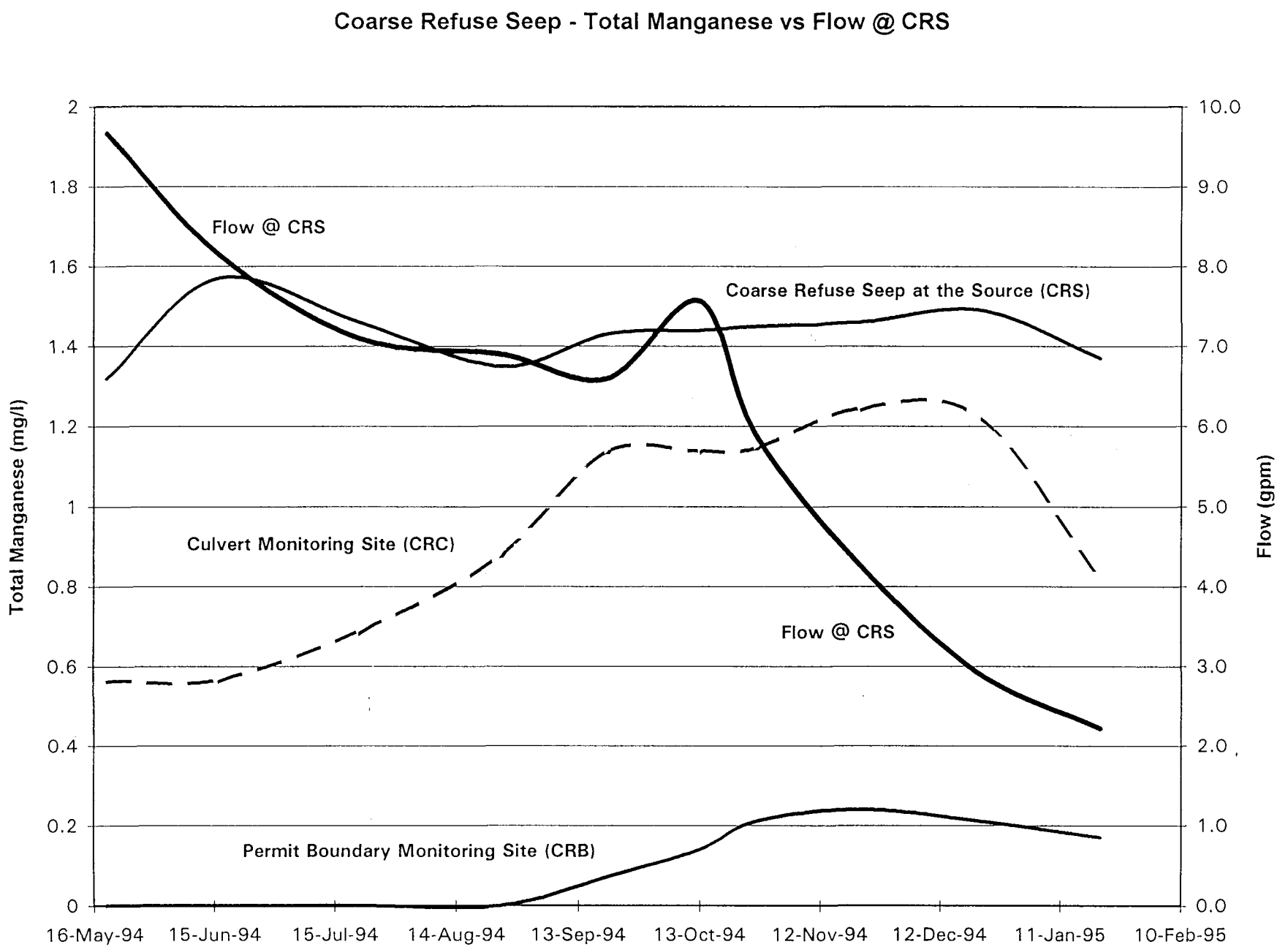
Iron Figure A-20 2/17/95



Boron

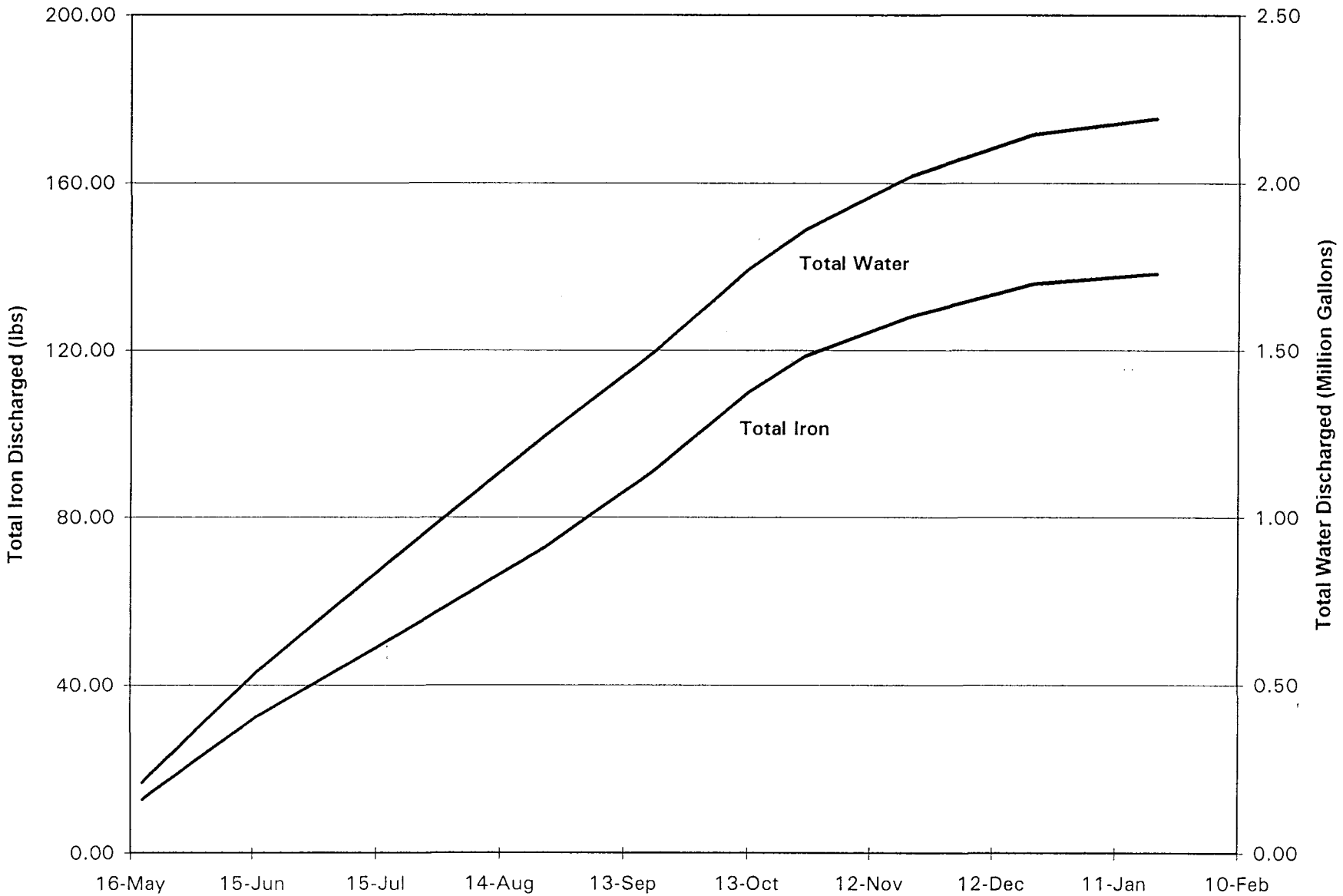
Figure A-21

2/17/95



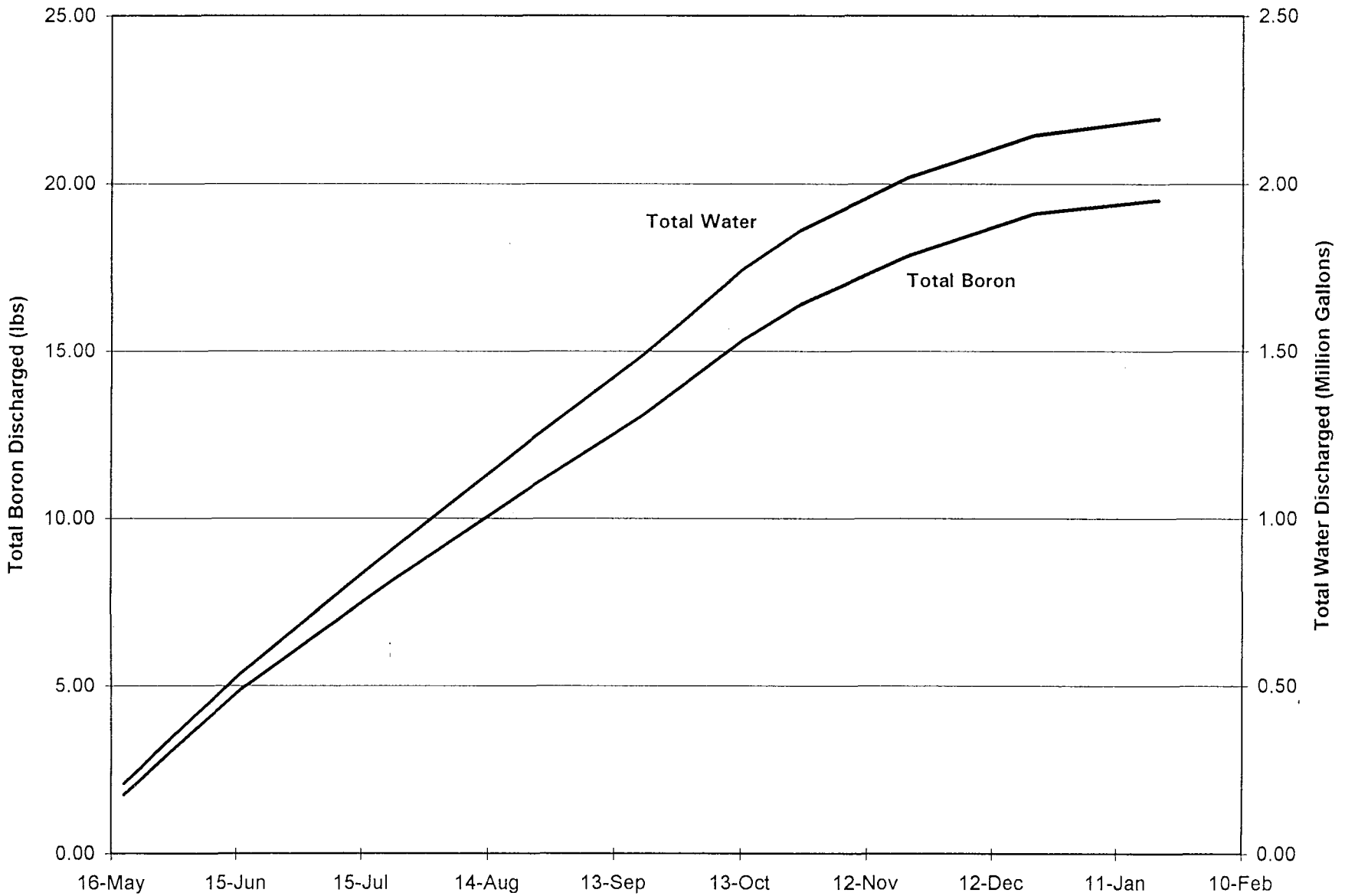
Manganese Figure A-22 2/17/95

Coarse Refuse Seep - Total Iron @ CRS Cumulative Mass Contribution



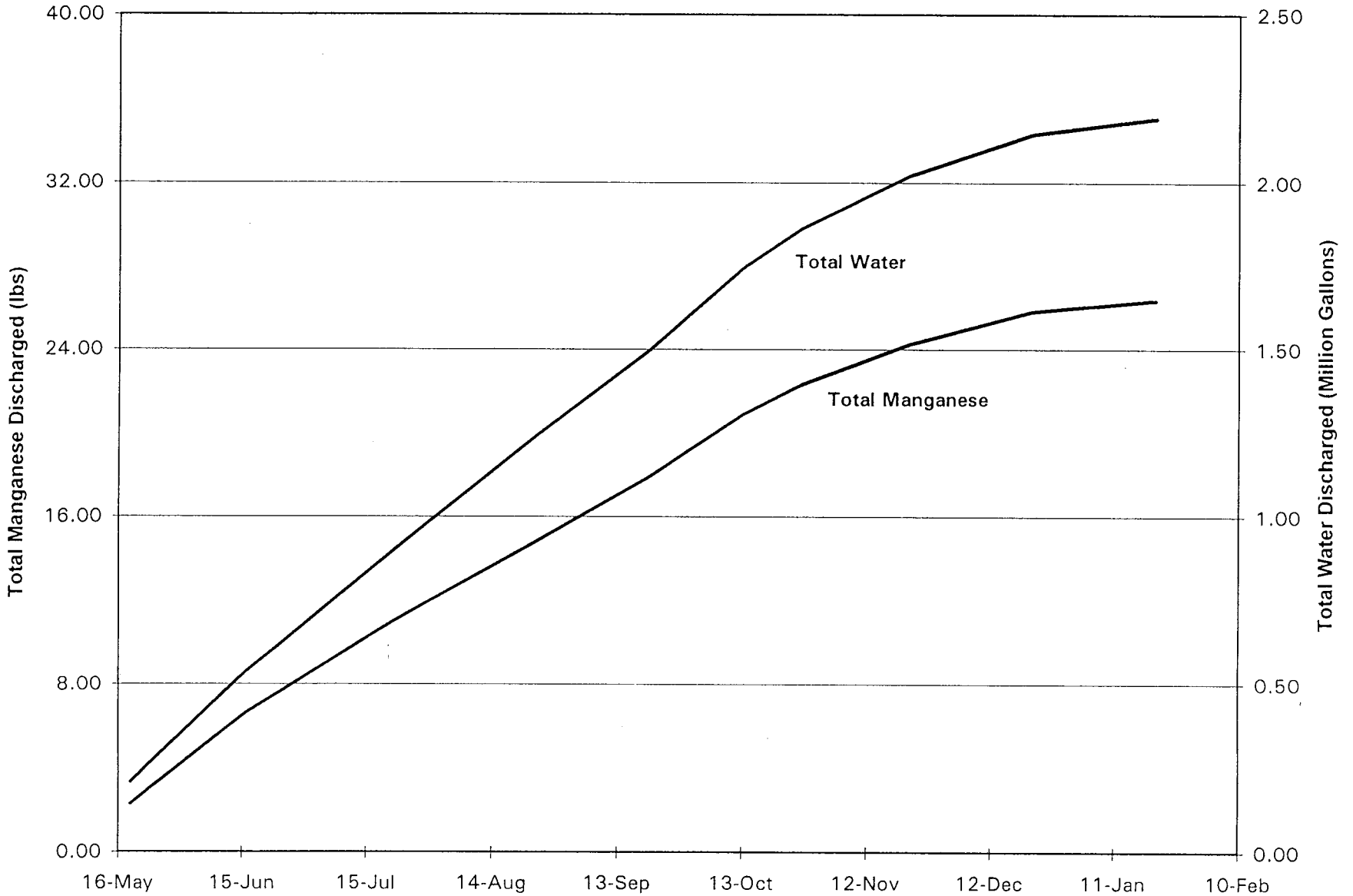
MASS IRON-CRS Figure A-23 2/17/95

Coarse Refuse Seep - Total Boron @ CRS Cumulative Mass Contribution



MASS BORON-CRS Figure A-24 2/17/95

Coarse Refuse Seep - Total Manganese @ CRS Cumulative Mass Contribution



MASS Manganese-CRS Figure A-25 2/17/95

ATTACHMENT A

Huntingdon
Chen-Northern, Inc.
600 SOUTH 25TH STREET
P.O. BOX 30615
BILLINGS, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
CHEN-NORTHERN, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: February 28, 1994
JOB NUMBER: 87-927
SHEET: 1 of 14
INVOICE NO.: 026905

REPORT OF: Surface Water Analysis - SCA DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On January 18, 1994, these surface water samples (our laboratory numbers 148524 through 148530) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 *"Methods for Chemical Analysis of Water and Wastes."*

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

The samples were received cool and were properly preserved in accordance with EPA guidelines.

Reviewed by David Cornish

mc

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF OUR CLIENTS AND AUTHORIZATION FOR

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148527
Sample Name: ICE-1/0113394
Sample Date: 01/13/94
Collected by: GREG McDONALD
Time Sampled: 1454
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	519 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO3.	425 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	59 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	943 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	110 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	850 mg/l		1600	02/04/94	BH
Magnesium as Mg	140 mg/l	0.31	0930	01/21/94	BH
Potassium as K	10 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	298 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	2 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	1045	01/19/94	CC
Total Dissolved Solids	1780 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	11 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	* <0.5 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve	* <0.10 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	* <0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148527
Sample Name: ICE-1/0113394
Sample Date: 01/13/94
Collected by: GREG McDONALD
Time Sampled: 1454
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	0.13 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.05 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.69 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148526
Sample Name: F-2/011394
Sample Date: 01/13/94
Collected by: GREG McDONALD
Time Sampled: 1600
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	605 mg/l		1100	02/10/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	02/10/94	HB
Alkalinity Total as CaCO3	496 mg/l	0.84	1100	02/10/94	HB
Chloride as Cl	44 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	632 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	94 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	690 mg/l		1600	02/04/94	BH
Magnesium as Mg	110 mg/l	0.31	1600	02/04/94	BH
Potassium as K	7 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	260 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	0940	01/19/94	CC
Total Dissolved Solids	1390 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	<5 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	* <0.5 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve	* <0.10 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0019	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT

Project No.: 87-927
Laboratory No.: 148526
Sample Name: F-2/011394
Sample Date: 01/13/94
Collected by: GREG McDONALD
Time Sampled: 1600
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	<0.02 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.97 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148524
Sample Name: CRS/011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1035
Sample Type: SURFAACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	570 mg/l		1100	02/10/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	02/10/94	HB
Alkalinity Total as CaCO3	467 mg/l	0.84	1100	02/10/94	HB
Chloride as Cl	97 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	3180 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	560 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	2800 mg/l		1600	02/04/94	BH
Magnesium as Mg	340 mg/l	0.31	1600	02/04/94	BH
Potassium as K	56 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	530 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	0.4 ml/l	0.1	1150	01/19/94	CC
Total Dissolved Solids	4930 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	16 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	0.005 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	1.0 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	12 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	21 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve	0.33 mg/l	0.003	1500	02/25/94	BH
Manganese as Mn (Total)	0.60 mg/l	0.003	1500	02/25/94	BH
Molybdenum as Mo (Dissolv	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148524
Sample Name: CRS/011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1035
Sample Type: SURFAACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	2.11 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.76 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.22 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148529
Sample Name: DUPLICATE 148524 CRS/011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1035
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	547 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO3	448 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	103 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	3160 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	560 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	2800 mg/l		0930	01/21/94	BH
Magnesium as Mg	340 mg/l	0.31	1600	02/04/94	BH
Potassium as K	56 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	525 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Total Dissolved Solids	5100 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	62 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	0.005 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	1.2 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	12 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	20 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve	0.32 mg/l	0.003	1500	02/25/94	BH
Manganese as Mn (Total)	0.60 mg/l	0.003	1500	02/25/94	BH
Molybdenum as Mo (Dissolv	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148529
Sample Name: DUPLICATE 148524 CRS/011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1035
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	2.13 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.75 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.26 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148525
Sample Name: CRB-011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1130
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	369 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO3	302 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	121 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	2780 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	490 mg/l	0.39	0930	01/21/94	BH
Hardness as CaCO3	2400 mg/l		0930	01/21/94	BH
Magnesium as Mg	290 mg/l	0.31	0930	01/21/94	BH
Potassium as K	39 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	450 mg/l	0.81	0930	01/21/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	0940	01/19/94	CC
Total Dissolved Solids	4320 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	<5 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	0.7 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1330	02/08/94	BH
Iron as Fe (Total)	* <0.25 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve	* <0.20 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	* <0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT

Project No.: 87-927
Laboratory No.: 148525
Sample Name: CRB-011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1130
Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	<0.02 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	1.33 mg/l	0.005	1015	01/28/94	CC

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- [x] Chen-Northern, Inc., Division
- [ ] Thomas-Hartig & Associates, Inc., Division
- [ ] Schaefer Dixon Associates, Inc., Division
- [ ] Herzog Associates, Inc., Division

SCA DOGM
Project or Site Name

5-137.3-91
Project Number

Greg McDonald
Sampler Name (Printed)

Chuck Wemple
Contact or Report to

SLC, UT
Contact Address or Location

Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED: See Attached List	NOTES	LAB NUMBER
4/14/94	1035	CRS/011494	Grab	Water	6		pH 2	1485G-1
4/14/94	1130	CRB/011494	Grab	Water	6		2	2-5
4/13/94	1600	F-2/011394	Grab	Water	6		2	2-6
4/13/94	1454	ICE-1/011394	Grab	Water	6		2	2-7
4/13/94	1459	ICE-2/011394	Grab	Water	6		2	2-8
							CR 1485QH CRS/011494 4/14 1035	2-9
							SP 1485QR ICE-2/011394 4/13 1459	3-0
								3-1

Relinquished by:	Date	Time	Received by:
	4/14/94	1400	Carrier/Airbill
Relinquished by:	4/18/94	1430	Received by: Art Lee-Blaga
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

Remarks: Attn: Dave Council

MH2 Cooler temp 6.1°C
SLC Cooler temp 3.8°C

Huntingdon
(Formerly Chen-Northern, Inc.)
600 South 25th Street
P O Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: June 1, 1994
JOB NUMBER: 87-927
SHEET: 1 of 5
INVOICE NO.: 026670

REPORT OF: Water Analysis - SCA DOGM (5-137.4-91)

SAMPLE IDENTIFICATION:

On April 21, 1994, these water samples (our laboratory numbers 150822 through 150825) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-029 *"Methods for Chemical Analysis of Water and Wastes."*

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by David Cornill

Attachment: Sample Receipt Checklist

rmr

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval. Samples will be disposed of after testing is completed unless other arrangements are agreed to in writing.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 150824
Sample Name: ICE-1/041994
Sample Date: 04/19/94
Collected by: CHUCK WEMPLE
Time Sampled: 1330
Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS	29.84 meq/l				
Alkalinity Bicarbonate as HCO3	443 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO3	11 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO3	382 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	60 mg/l	1.41	1530	04/27/94	DD
Sulfate as SO4	985 mg/l	2.29	1430	05/09/94	DD
CATIONS	30.19 meq/l				
Calcium as Ca	108 mg/l	0.39	1530	05/11/94	BH
Hardness as CaCO3	854 mg/l	-	1530	05/11/94	BH
Magnesium as Mg	142 mg/l	0.31	1530	05/11/94	BH
Potassium as K	13 mg/l	0.18	1000	05/09/94	AH
Sodium as Na	294 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	2800 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	<1 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	1860 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	71 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AAH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	05/11/94	AH
Copper as Cu (Dissolved)	*<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	*<0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.35 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	*<0.2 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	0.08 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.32 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 150825
Sample Name: F-2/041994
Sample Date: 04/19/94
Collected by: CHUCK WEMPLE
Time Sampled: 1531
Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS	**24.44 meq/l**				
Alkalinity Bicarbonate as HCO3	553 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO3	11 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO3	472 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	56 mg/l	1.41	1530	05/17/94	DD
Sulfate as SO4	644 mg/l	2.29	1430	05/09/94	DD
CATIONS	**25.54 meq/l**				
Calcium as Ca	97 mg/l	0.39	1030	05/11/94	BH
Hardness as CaCO3	712 mg/l	-		05/11/94	
Magnesium as Mg	114 mg/l	0.31	1030	05/11/94	BH
Potassium as K	7 mg/l	0.18	1000	05/09/94	AH
Sodium as Na	274 mg/l	0.81	1000	05/11/94	AH
INORGANICS					
Electrical Conductivity	2280 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	<1 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	1430 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	7 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	BH
Copper as Cu (Dissolved)	<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	*<0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	*<0.2 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.75 mg/l	0.05	1430	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 150822
Sample Name: CRS/041994
Sample Date: 04/19/94
Collected by: CHUCK WEMPLE
Time Sampled: 1415
Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS**	73.58 meq/l				
Alkalinity Bicarbonate as HCO3	553 mg/l	-	1400	05/03/94	CC
Alkalinity Carbonate as CO3	0 mg/l	-	1400	05/03/94	CC
Alkalinity Total as CaCO3	453 mg/l	0.84	1400	05/03/94	CC
Chloride as Cl	101 mg/l	1.41	1530	04/27/94	CC
Sulfate as SO4	2960 mg/l	2.29	1400	05/23/94	DD
CATIONS**	80.38 meq/l				
Calcium as Ca	558 mg/l	0.39	1000	05/11/94	BH
Hardness as CaCO3	2890 mg/l	-	1000	05/11/94	BH
Magnesium as Mg	350 mg/l	0.31	1030	05/04/94	BH
Potassium as K	52 mg/l	0.18	1000	05/09/94	BH
Sodium as Na	515 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	5550 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	4 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	4890 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	34 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	*<1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	AH
Copper as Cu (Dissolved)	*<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	4.63 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	11.0 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	1.90 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	1.65 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	1.42 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	<0.05 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.27 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.
** The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT

Project No.: 87-927
Laboratory No.: 150823
Sample Name: CRB/041994
Sample Date: 04/19/94
Collected by: CHUCK WEMPLE
Time Sampled: 1430
Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS**	64.86 meq/l				
Alkalinity Bicarbonate as HCO3	380 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO3	0 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO3	311 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	134 mg/l	1.41	1530	04/27/94	DD
Sulfate as SO4	2630 mg/l	2.29	1400	05/23/94	DD
CATIONS**	70.68 meq/l				
Calcium as Ca	494 mg/l	0.39	1000	05/11/94	BH
Hardness as CaCO3	2666 mg/l	-	1000	05/11/94	BH
Magnesium as Mg	309 mg/l	0.31	1030	05/11/94	BH
Potassium as K	41 mg/l	0.18	1000	05/09/94	BH
Sodium as Na	450 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	4960 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	2 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	4620 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	10 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	AH
Copper as Cu (Dissolved)	*<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	*<0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.10 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	0.20 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	<0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	* <0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	* <0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.73 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

** The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

☑ Chen-Northern, Inc., Division
☐ Thomas-Hartig & Associates, Inc., Division
☐ Schaefer Dixon Associates, Inc., Division
☐ Herzog Associates, Inc., Division

SCA DOGM
Project or Site Name

5-137.4-91
Project Number

Chuck Wample
Sampler Name (Printed)

Chuck Wample
Contact or Report to

SLC, UT
Contact Address or Location

Chuck Wample
Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED: See Attached	NOTES	LAB NUMBER
4/19/94	1415	CRS/041994	Grab	Water	6		Metals Filtered / Metals unfiltered	150822
4/19/94	1430	CRB/041994	Grab	Water	6			23
4/19/94	1330	KE-1/041994	Grab	Water	6			24
4/19/94	1531	F-2/041994	Grab	Water	6			25

Relinquished by:	Date	Time	Received by:
Chuck Wample	04/20/94	1415	Carrier airborne
~~Relinquished by:~~	4/21/94	0970	[illegible]
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

Remarks:
Metals filter
Reg'd
pH 3 — added HNO_3 in lab to
pH <2 in lab
SLC cooler temp 9°C
LAA cooler temp 11°C

Huntingdon
(Formerly Chen-Northern, Inc.)
600 South 25th Street
P O Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: GREG McDONALD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: July 20, 1994
JOB NUMBER: 87-927
SHEET: 1 of 6
INVOICE NO.: 025606

REPORT OF: Water Analysis - SCA DOGM (5-137.4-91)

SAMPLE IDENTIFICATION:

On June 24, 1994, these water samples (our laboratory numbers 152659 through 152663) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-029 *"Methods for Chemical Analysis of Water and Wastes."*

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by David Connell

Attachment: Sample Receipt Checklist

mc

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval. Samples will be disposed of after testing is completed unless other arrangements are agreed to in writing.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 152659
Sample Name: ICE-1/062394
Sample Date: 06/23/94
Collected by: GREG McDONALD
Time Sampled: 1000
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	541 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO3	310.1	11 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO3	310.1	463 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	62 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO4	375.2	782 mg/l	1.75	1400	07/13/94	CC
CATIONS						
Calcium as Ca	200.7	96 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO3	200.7	759 mg/l		1500	06/29/94	BH
Magnesium as Mg	200.7	126 mg/l	0.10	1500	06/29/94	BH
Potassium as K	258.1	11 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	288 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	2220 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	1590 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<4 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.07 mg/l	0.006	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.03 mg/l	0.003	1430	06/30/94	DD
Nitrate as N	353.2	0.48 mg/l	0.004	1200	06/24/94	DD

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 152660
Sample Name: F-2/062394
Sample Date: 06/23/94
Collected by: GREG McDONALD
Time Sampled: 1030
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	593 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO3	310.1	11 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO3	310.1	505 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	56 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO4	375.2	700 mg/l	1.75	1400	06/28/94	CC
CATIONS						
Calcium as Ca	200.7	108 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO3	200.7	738 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	114 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	9 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	273 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	2280 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	1500 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.54 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1430	06/30/94	CC
Nitrate as N	353.2	0.94 mg/l	0.004	1200	06/24/94	DD

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 152661
Sample Name: CRS/062394
Sample Date: 06/23/94
Collected by: GREG McDONALD
Time Sampled: 1110
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS *						
Alkalinity Bicarbonate as HCO3	310.1	559 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO3	310.1	458 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	105 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO4	375.2	3080 mg/l	1.75	1300	06/29/94	CC
CATIONS *						
Calcium as Ca	200.7	597 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO3	200.7	2980 mg/l		1500	06/29/94	BH
Magnesium as Mg	200.7	363 mg/l	0.10	1500	06/29/94	BH
Potassium as K	258.1	57 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	501 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	5280 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	4910 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	14 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.6 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	0.006	9.5 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	10.4 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	0.001	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	0.001	1.08 mg/l	0.001	1130	07/11/94	BH
Manganese as Mn (Total)	0.001	1.56 mg/l	0.001	1415	07/13/94	BH
Molybdenum as Mo (Dissolved)	0.009	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	0.001	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	0.002	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	1.26 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.17 mg/l	0.003	1730	07/14/94	CC
Nitrate as N	353.2	0.37 mg/l	0.004	1200	06/24/94	DD

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 152662
Sample Name: CRB-062394
Sample Date: 06/23/94
Collected by: GREG McDONALD
Time Sampled: 1130
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	398 mg/l			07/08/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l			07/08/94	HB
Alkalinity Total as CaCO3	310.1	326 mg/l	0.43	1300	07/08/94	HB
Chloride as Cl	325.2	166 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO4	375.2	2820 mg/l	1.75	1300	06/29/94	CC
CATIONS						
Calcium as Ca	200.7	480 mg/l	0.10	1030	07/14/94	BH
Hardness as CaCO3	200.7	2470 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	310 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	48 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	475 mg/l	0.81	1030	07/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5160 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1530	06/24/94	CC
Total Dissolved Solids	160.1	4490 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.6 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.25 * mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	<0.15 * mg/l	0.008	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.10 * mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.06 * mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	0.07 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	0.03 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.04 mg/l	0.003	1430	06/30/94	DD
Nitrate as N	353.2	0.44 mg/l	0.004	1200	06/24/94	DD

* Higher detection limit reported due to interferences present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 152663
Sample Name: WELL-1/062394
Sample Date: 06/23/94
Collected by: GREG McDONALD
Time Sampled: 1210
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	593 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO3	310.1	486 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	33 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO4	375.2	479 mg/l	1.75	1400	07/13/94	CC
CATIONS						
Calcium as Ca	200.7	78 mg/l	0.10	1030	07/14/94	BH
Hardness as CaCO3	200.7	515 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	78 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	7 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	234 mg/l	0.81	1030	07/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	1830 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	2 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1530	06/24/94	CC
Total Dissolved Solids	160.1	1180 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.1 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	352.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1530	06/30/94	DD
Nitrate as N	353.2	0.85 mg/l	0.004	1200	06/24/94	DD

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- ☑ Chen-Northern, Inc., Division
- ☐ Thomas-Hartig & Associates, Inc., Division
- ☐ Schaefer Dixon Associates, Inc., Division
- ☐ Herzog Associates, Inc., Division

Project or Site Name: SCA DOGM

Project Number: S-137.4-91

Sampler Name (Printed): Greg McDonald

Contact or Report to: Rich Girard / G.M.

Contact Address or Location: 1127 W. 2320 S. SLC UT

Sampler Signature:

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED (See Attached List)	NOTES	LAB NUMBER
6/23/94	1000	ICE-1/062394	Grab	Water	6			152659
6/23/94	1030	F-2/062394	Grab	Water	6			60
6/23/94	1110	CRS/062394	Grab	Water	6			61
6/23/94	1130	CRB/062394	Grab	Water	6			62
6/23/94	1210	WELL-1/062394	Grab	Water	6			63
								~~64~~
								~~65~~

Relinquished by:	Date	Time	Received by:
	6/23/94	1530	Carrier Fed Ex
	6/24/94	0930	

Remarks:
Attn: Dave Counci
*Please Note Nitrite Parameter (i.e. holding time)

Cooler temp 9°C

Huntingdon
(Formerly Chen-Northern, Inc.)
600 South 25th Street
P O Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: October 21, 1994
JOB NUMBER: 87-927
SHEET: 1 of 6
INVOICE NO.: 027251

REPORT OF: Water Analysis - Sunnyside/DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On September 28, 1994, these water samples (laboratory numbers 155249 through 155253) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 *"Methods for Chemical Analysis of Water and Wastes."*

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by David Comrie

Attachments: Sample Receipt Checklist

rmr

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval. Samples will be disposed of after testing is completed unless other arrangements are agreed to in writing.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 155249
Sample Name: ICE-1
Sample Date: 09/27/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	509 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO3	310.1	17 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO3	310.1	446 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	67 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO4	375.2	742 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	60 mg/l	0.10	1030	10/14/94	BH
Hardness as CaCO3	2340B	618 mg/l	-	1030	10/14/94	BH
Magnesium as Mg	200.7	114 mg/l	0.10	1030	10/14/94	BH
Potassium as K	258.1	6 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	320 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	2350 umhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	0730	10/10/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	1580 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	7 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.16 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	0.11 mg/l	0.015	1700	10/13/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.05 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 155252
Sample Name: F-2
Sample Date: 09/27/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	601 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO3	310.1	6 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO3	310.1	502 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	60 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO4	375.2	690 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	96 mg/l	0.10	1130	10/05/94	BH
Hardness as CaCO3	2340B	697 mg/l	-	1130	10/05/94	BH
Magnesium as Mg	200.7	111 mg/l	0.10	1130	10/05/94	BH
Potassium as K	258.1	6 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	256 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	2260 umhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1556	09/28/94	TK
Total Dissolved Solids	160.1	1540 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	8 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.54 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.04 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/14/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.48 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 155250
Sample Name: CRS
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	608 mg/l	-	1400	10/14/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l	-	1400	10/14/94	HB
Alkalinity Total as CaCO3	310.1	498 mg/l	0.43	1400	10/14/94	HB
Chloride as Cl	325.3	106 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO4	375.2	2930 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	546 mg/l	0.10	0900	10/20/94	BH
Hardness as CaCO3	23408	2630 mg/l	-	0900	10/20/94	BH
Magnesium as Mg	200.7	309 mg/l	0.10	0900	10/20/94	BH
Potassium as K	258.1	39 mg/l	0.18	1300	10/07/94	BH
Sodium as Na	200.7	471 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5520 umhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	5410 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	26 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.1 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	1.0 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	8.40 mg/l	0.006	1000	12/30/94	BH
Iron as Fe (Total)	200.7	9.57 mg/l	0.006	1000	12/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	0.64 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.69 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	1.33 mg/l	0.015	1700	10/13/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.15 mg/l	0.003	0945	10/13/94	CC
Nitrate as N	353.2	0.22 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 155251
Sample Name: CRB
Sample Date: 09/27/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	405 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO3	310.1	332 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	213 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO4	375.2	2780 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	486 mg/l	0.10	1130	10/20/94	BH
Hardness as CaCO3	2340B	2460 mg/l	-	1130	10/20/94	BH
Magnesium as Mg	200.7	303 mg/l	0.10	1130	10/20/94	BH
Potassium as K	258.1	32 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	450 mg/l	0.61	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5460 umhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	5230 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	<5 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.8 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.25 mg/l	0.006	1000	12/30/94	BH
Iron as Fe (Total)	200.7	<0.25 mg/l	0.006	1000	12/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	*<0.10 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	*<0.06 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/13/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.39 mg/l	0.004	1730	09/28/94	CC

* Higher detection level due to interferences.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 155253
Sample Name: DRAGERRTON WELL
Sample Date: 09/27/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	463 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO3	310.1	0 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO3	310.1	379 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	30 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO4	375.2	412 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	81 mg/l	0.10	1130	10/05/94	BH
Hardness as CaCO3	2340B	511 mg/l	-	1130	10/05/94	BH
Magnesium as Mg	200.7	75 mg/l	0.10	1130	10/05/94	BH
Potassium as K	258.1	4 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	144 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	1520 umhos/c	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1556	09/28/94	TK
Total Dissolved Solids	160.1	981 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	<5 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.03 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/14/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.80 mg/l	0.004	1730	09/28/94	CC

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- [x] Chen-Northern, Inc., Division
- [ ] Thomas-Hartig & Associates, Inc., Division
- [ ] Schaefer Dixon Associates, Inc., Division
- [ ] Herzog Associates, Inc., Division

Sunnyside / DOGM
Project or Site Name

5-137.3 - 91
Project Number

Richard F. Ciraud
Sampler Name (Printed)

Rich Ciraud
Contact or Report to

1127 W 2320S, Suite B SL, UT 84119
Contact Address or Location

Richard F. Ciraud
Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED	NOTES	LAB NUMBER
9/27/94		Ice-1	grab	H_2O	6	see		155249
9/27/94		CRS	"	"	6	attached		50
9/27/94		CRB	"	"	6	sheet		51
9/27/94		F-2	"	"	6			52
9/27/94		Drainstem Well	"	"	6			53

No sheet attached
Dup 15303 per D.C.

Relinquished by:	Date	Time	Received by:
Richard F. Ciraud	9-27-94	1540	Carrier / FedEx
~~Relinquished by:~~	9/28/94	0938	H Cleveland
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

Remarks: please note Nutrients 48 hr holding time

Green Cooler temp 17°C
Red Cooler temp 15°C

Huntingdon
(Formerly Chen-Northern, Inc.)
600 South 25th Street
P O Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: January 20, 1995
JOB NUMBER: 87-927
SHEET: 1 of 5
INVOICE NO.: 003084

REPORT OF: Water Analysis - Sunnyside DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On December 20, 1994, these water samples (laboratory numbers 158101 through 158105) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 *"Methods for Chemical Analysis of Water and Wastes."*

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by David Conwell

Attachment: Sample Receipt Checklist

rmr

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of our clients and authorization for publication of statements, conclusions or extracts from or regarding our reports, and photographs or publications of any kind will be

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 158102
Sample Name: F-2/121994
Sample Date: 12/19/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	492 mg/l	-	1300	01/11/95	DD
Alkalinity Carbonate as CO3	310.1	0 mg/l	-	1300	01/11/95	DD
Alkalinity Total as CaCO3	310.1	403 mg/l	0.4	1300	01/11/95	DD
Chloride as Cl	325.2	23 mg/l	0.7	1400	01/09/95	CC
Sulfate as SO4	375.2	290 mg/l	2	1500	12/30/94	DD
CATIONS						
Calcium as Ca	200.7	72 mg/l	0.1	1030	01/10/95	BH
Hardness as CaCO3	2340B	452 mg/l	-	1030	01/10/95	BH
Magnesium as Mg	200.7	66 mg/l	0.1	1030	01/10/95	BH
Potassium as K	258.1	3 mg/l	0.2	1430	12/29/94	AAH
Sodium as Na	200.7	141 mg/l	0.8	1030	01/10/95	BH
INORGANICS						
Electrical Conductivity	120.1	1300 umhos/cm	7	1500	12/29/94	HB
Oil & Grease	413.1	<1 mg/l	1	1400	01/04/95	DD
Settleable Solids	160.5	<0.1 ml/l	0.1	--	12/21/94	DD
Total Dissolved Solids	160.1	894 mg/l	6	1700	12/22/94	CC
Total Suspended Solids	160.2	3 mg/l	2	1530	12/22/94	CC
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1515	01/03/95	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1600	01/04/95	AAH
Boron as B (Dissolved)	200.7	0.1 mg/l	0.02	1345	01/03/95	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1800	01/10/95	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1515	01/03/95	BH
Iron as Fe (Dissolved)	200.7	0.08 mg/l	0.006	1345	01/03/95	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.006	1420	01/10/95	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	01/06/95	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1345	01/03/95	AAH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1420	01/10/95	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1600	01/03/95	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	01/03/95	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1345	01/03/95	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.02	1300	12/28/94	CC
Nitrite as N	353.2	<0.05 mg/l	0.005	1000	12/21/94	DD
Phosphorous Total	365.1	<0.02 mg/l	0.003	1630	01/10/95	CC
Nitrate as N	353.2	0.66 mg/l	0.004	1200	12/27/94	BH

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 158105
Sample Name: CRB/121994
Sample Date: 12/19/94
Collected by: RICHARD E. GIRAUD
Time Sampled: NONE GIVEN
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS*						
Alkalinity Bicarbonate as HCO3	310.1	440 mg/l	-	1330	12/22/94	BH
Alkalinity Carbonate as CO3	310.1	0 mg/l	-	1330	12/22/94	BH
Alkalinity Total as CaCO3	310.1	361 mg/l	0.4	1330	12/22/94	BH
Chloride as Cl	325.3	197 mg/l	0.7	--	01/13/95	DD
Sulfate as SO4	375.2	2800 mg/l	2	1500	12/30/94	DD
CATIONS*						
Calcium as Ca	200.7	570 mg/l	0.1	1130	01/12/95	BH
Hardness as CaCO3	2340B	2780 mg/l	-	1130	01/12/95	BH
Magnesium as Mg	200.7	330 mg/l	0.1	1030	01/10/95	BH
Potassium as K	258.1	31 mg/l	0.2	1430	12/29/94	AAH
Sodium as Na	200.7	507 mg/l	0.8	1030	01/10/95	BH
INORGANICS						
Electrical Conductivity	120.1	5190 umhos/cm	7	1500	12/29/94	HB
Oil & Grease	413.1	<1 mg/l	1	1400	01/04/95	DD
Settleable Solids	160.5	<0.1 ml/l	0.1	-	12/21/94	DD
Total Dissolved Solids	160.1	5070 mg/l	6	1700	12/22/94	CC
Total Suspended Solids	160.2	<1 mg/l	2	1530	12/22/94	CC
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1515	01/03/95	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1600	01/04/95	AAH
Boron as B (Dissolved)	200.7	0.9 mg/l	0.02	1345	01/03/95	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1800	01/10/95	AAH
Copper as Cu (Dissolved)	200.7	<0.06 mg/l	0.004	1515	01/03/95	BH
Iron as Fe (Dissolved)	200.7	<0.15 mg/l	0.006	1345	01/03/95	BH
Iron as Fe (Total)	200.7	0.18 mg/l	0.006	1420	01/10/95	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	01/06/95	AAH
Manganese as Mn (Dissolved)	200.7	0.12 mg/l	0.001	1345	01/03/95	BH
Manganese as Mn (Total)	200.7	0.15 mg/l	0.001	1420	01/10/95	AAH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1600	01/03/95	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	01/03/95	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1345	01/03/95	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	0.07 mg/l	0.02	1300	12/28/94	CC
Nitrite as N	353.2	<0.05 mg/l	0.005	1000	12/21/94	DD
Phosphorous Total	365.1	<0.02 mg/l	0.003	1630	01/10/95	CC
Nitrate as N	353.2	0.70 mg/l	0.004	1200	12/27/94	BH

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Huntingdon

receipt.lst

SAMPLE RECEIPT CHECKLIST

Client Name: H-SLC

Project: Sunnyside DGGM

Laboratory number(s): 15811-CS

Checklist completed by: BH 12/20/94 (Initials / Date)

Date/Time Received: 12/20/94 1355 (Date / Time)

Received by: [illegible]

Carrier name: UPS

Logged in by: _____ (Initials / Date)

Sample Type: water

		YES	NO
1.	Shipping container in good condition?	X	
2.	Custody seals present on shipping container?	X	
3.	Condition: Intact X Broken ____		
4.	Chain of custody present?	X	
5.	Chain of custody signed when relinquished and received?	X	
6.	Chain of custody agrees with sample labels?		X
7.	Custody seals on sample bottles?		X
8.	Condition: Intact ____ Broken ____		
9.	Samples in proper container/bottle?	X	
10.	Samples intact?	X	
11.	Sufficient sample volume for indicated test?	X	
12.	VOA vials have zero headspace?	N/A	
13.	Trip Blank received?	N/A	
14.	Ice/Frozen Blue Ice present in shipping container? (circle one)	X	
15.	Container temperature 1. 5.5°C 2. ____ 3. ____		

		YES	NO
16.	All samples rec'd within holding time?	X	
	Preservation		
17.	pH check performed by: BH		
18.	Metals bottle(s) pH <2?	X	
19.	Nutrient bottle(s) pH <2?	X	
20.	Cyanide bottle(s) pH >12?	N/A	
21.	Sulfide bottle(s) pH >9?		
22.	Oil & grease bottle(s) pH <2?		
23.	TOC bottle(s) pH <2?	N/A	
24.	DRO/418.1 bottle(s) pH <2?		
25.	Phenolics bottle(s) pH <2?		
26.	Volatiles (VOA) pH <2? (VOA pH checked by analyst)		
27.	Client contacted?		
28.	Person contacted ____		
29.	Date contacted ____		
30.	Contacted by ____		
31.	Regarding? ____		

Any NO response must be detailed in the comments section below. If items are not applicable, they should be marked NA.

COMMENTS: #6 Metals sample for CRS/12/7/94 was not labeled, there are 6 bottles to each set instead of 5, dissolved metals not marked as filtered, dissolved in 500ml bottles instead of 1000ml, total metals in 1000ml bottles, not 500ml.

ATTACHMENT B

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: ICE-1 DOGM

Runoff Basin / Spring / Other: STREAM

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	gpm Flow ~~(cfs)~~	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp ~~(°C)~~	pH	SC (umhos)	DO ~~Meter~~ ~~No.~~	Collection Point	Sample Taken (yes/no)
6/30/93	1335	GM CW	Sunny/Hot	yes		185	~~Vis~~ CC		29	8.08	2200	7.4	Manhole	yes
7/27	1517	GM	Sunny Hot	yes		200	~~Vis~~ CC		23	8.17	2300	6.2	"	NO
8/26/93	1103	GM	—	yes		120	CC		16	7.18	2200	7.2	"	NO
9/2/93	1700	GM CW	Slt	yes		150	CC	-	20	8.23	2150	5.4	"	~~NO~~ yes
10/27	0830	MH	Warm	yes		150	Vis		3.3	8.50	1200	6.0	"	NO
11/16	1310	MH	Cold	yes		150	Vis		5.0	8.48	1800	5.6	"	~~NO~~
12/9	1555	GM	Cold	yes	clear	300	Vis		4.8	8.49	2471	10.3	"	NO
1/13/94	1438	GM	Cold Clear	yes	Clear ICE-2 duplicate	~200	Vis		5.1	8.29	2220	6.4	"	yes
2/28	1336	GM	Cool, P.C.	yes	light brown/silty	150	Vis		8.9	8.16	1450	7.3	"	NO
3/31/94	12:39	CW/TMM	Warm, Sunny	yes	"	90	DF		12.9	7.90	1800	6.0	"	No
4/19/94	1315	CW/GM	" "	yes	"	100	DF		17.2	8.23	2860	6.4	"	~~yes~~
5/31/94	1055	RG	cool, rain	yes	clear	300	CC		13.1	8.29	2257	9.9	"	NO
6/23	0928	GM	Sunny Hot	yes	clear	127	DF		21.9	8.74	2120	6.5	"	yes
7/21/94	0935	GM	Sunny Hot	yes	clear	90	DF		21.2	8.34	2150	7.1	"	NO
8/22/94	1450	GM	Sunny Hot	yes	clear	50	DF		25.7	8.71	2170	6.3	"	NO
9/29/94	1226	RBG	sunny, cool	yes	clear	4.0	~~DF~~ RG CC		18.2	8.50	2340.9	15.4	"	yes
10/19/94	1302	RBG/GM	cloudy cool	yes		120	CC		9.9	8.59	2491.3	8.8	"	yes
11/21/94	1217	RBG/REG	overcast, cool	yes		20	C.C.		1.1	8.84	2165	15.5	"	no

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

DOGM Permit Boundary Water Quality Monitoring Plan

Huntingdon Engineering & Environmental

Monitoring Location: ICE-1

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow Meas. Method	Flow (gpm)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12-19-94	1154	RBG/SEG	Clear	yes	CC	6.0	3.0	8.08	2392.5	15.4	yes	

Flow Measurement Methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: F-2 (Whit. Sp) DOGM

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	gpm Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (F)C	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
4/30/93	1515	GMCW	Sunny/Hot	yes	Clear water	100	CC		25	8.4	2300	7.8	Marked Point	yes
7/27	1456	GM	Sunny/Hot	yes	"	~90	Vis		23	8.02	1900	5.9	"	yes
8/24/93	1058	GM	Overcast	yes	"	100	CC		15	7.18	2150	6.2	"	NO
9/2/93	1757	GMCW	SW	yes	"	100	CC		17	7.54	2100	6.4	"	yes
10/27	0730	MH	W-dy	yes	"	100	CC		1.5	8.3	1200	7.0		NO
11/16	1310	MH	Cold	y	"	100	CC		5.3	8.49	1300	6.20	"	NO
12/9	1530	GM	Cold	yes	Grey from TSS(004)	150	CC		6.0	7.82	1800	12.7	"	NO
1/13/94	1535	GM	Cold Clear	yes	Clear	~90	CC		5.6	8.51	1824	6.2	"	yes
2/28	1320	GM	PC Cool	yes	Clear Water	35	CC		7.7	7.62	2180	6.9	"	NO
3/31/94	12:54	CW/FMM	Warm, Sunny	YU		25.5	CC		13.6	8.01	1500	6.4	"	NO
4/19	1525	OW/GM	" "	yes	Clear	36	CC		15.5	8.40	1800	8.6	"	yes
5/31/94	1247	RG	cool, rain	yes	clear	85	CC		12.5	8.16	1650	9.9	"	NO
6/23/94	1030	GM	Sunny Hot	yes	clear	60	CC		18.7	8.49	2130	7.0	"	yes
7/21/94	0900	GM	Sunny Hot	yes	clear	43	CC		18.9	7.98	3401	7.9	"	NO
8/22/94	1213	GM	Sunny Hot	yes	clear lower flow	23	CC		22.4	7.85	3420	8.5	"	NO
9/29/94	1428	RBG	sunny cool	yes	clear	7.0	CC		19.5	8.26	2218.2	14.9	"	yes
10/19/94	1325	RBG/GM	cloudy cool	yes	clear	30.0	CC		10.5	8.35	2340.3	8.6	"	yes
11/21/94	1129	RBG/REG	overcast, cool	yes	clear	24.0	CC		3.4	8.63	2200	13.9	"	no

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

DOGM Permit Boundary Water Quality Monitoring Plan

Huntingdon Engineering & Environmental

Monitoring Location: F-2 Whitmore Springs

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow Meas. Method	Flow (gpm)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12/19/94	1141	RB6/REG	clear	yes	CC	26.0	3.5	8.20	2310	15.6	yes	

Flow Measurement Methods: W= Weir, VE= Visual Estimate, CC= Calibrated Container, DF= Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: CRS (source) DOGM

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (F/C)	pH	SC (umhos)	DO ~~Meter No.~~	Collection Point	Sample Taken (yes/no)
6/30/93	1335	GM CW	Sunny Hot	yes	Much Rust, Warm.	~30	Vis		32	6.77	4600	6.2	Flagged Point	yes
7/27	1020	GM	Sunny Hot	yes	"	~30	Vis		28	7.25	3200	2.4	"	NO
8/26/93	1156	GM	overcast	yes	" "	~40	VIS		25	6.81	2800	3.4	"	NO
9/2/93	1555	CW GM	Sw	yes	"	~40	Vis		28	7.12	4600	1.9	"	yes
10/26	1320	MH	windy	yes	"	40	Vis		23	6.98	4700	3.5	"	NO
11/16	1405	MH	Cold	yes	"	50	Vis		23.2	6.86	4850	2.1	"	NO
12/9	1612	GM	Cold	yes	Warmer less flow	~30	Vis		23.2	6.93	4306	1.9	"	NO
1/14/94	1011	GM	Clear Cold	yes		~100	V.S		21.2	7.08	4748	2.4	"	yes
2/28	1358	GM	PC, Cool	yes		100	V.S		36.5	6.74	4470	0.9	"	NO
3/30/94	11:57	CW/GM	Warm, Sunny	Yes	"	?	—		23.7	6.51	5400	1.4	"	NO
4/19	1356	CW/GM	" "	yes	Weir in place	10	W		26.9	6.83	4550	3.2	Weir	yes
5/31/94	1147	RG	cool, rain	yes	rust, warm, weir in place	8.5	W		23.6	6.64	4650	1.9	weir	NO
6/23/94	1049	GM	sunny Hot	yes		8.5	W		37.2	6.88	5140	1.5	"	yes
7/21/94	1004	GM	Sunny Hot	yes		8.5	W		25.9	6.96	5480	1.3	"	NO
8/22/94	1545	GM	Sunny Hot	yes	Clear low flow Much Veg.	7.1	W		27.5	7.01	5130	1.2	"	NO
9/29/94	1318	RBG	Sunny Cool	yes	Clear	8.5	W		26.2	6.58	5450	1.2	"	yes
10/19/94	1344	RBG/GM	Cloudy, cool	yes	lots of vegetation	8.5	W		21.1	6.86	5565.4	2.3	"	yes
11/21/94	1145	RBG/REG	overcast, cool	yes	vegetation	4.7	weir		18.9	7.11	5088	5.3		no

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

DOGM Permit Boundary Water Quality Monitoring Plan

Huntingdon Engineering & Environmental

Monitoring Location: CRS - Source

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow Meas. Method	Flow (gpm)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12-19-94	1244	RBG/REG	clear	yes	weir	4.7	20.4	6.77	4986.7	3.5	yes	vegetation

Flow Measurement Methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: CRB (Boundary) DOGM

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (~~F~~) C	pH	SC (umhos)	DO Meter ~~No.~~	Collection Point	Sample Taken (yes/no)
3/30/93	1355	GM CW	Sunny Hot	yes	Much less FE or ~ cooler	~30	Vis		26	7.60	4300	8.1	Standard Point	yes
7/27	1620	GM	Sunny Hot	yes	"	~30	Vis		21	7.87	4600	5.0	"	NO
8/26/93	1159	GM	Overcast	yes	" "	~60	VIS.		18.5	6.50	2450	5.4	"	NO
/2	1643	GM CW	SW	yes	~	~40	Vis		20	7.42	4150	4.9	"	NO
10/26	1400	MH	Windy	yes	...	40	Vis		8.3	7.50	3400	6.0	"	NO
1/16	1430	MH	Cold	yes	~ -	40?	Vis		7.9	7.10	3300	5.5	"	NO
2/9	1627	GM	Cold	yes	Clear water	40?	Vis		5.9	7.94	3900	5.4	"	NO
4/4/94	1103	GM	Clear Cold	yes	Clear	200 est	Vis		5.0	8.17	3100	6.0	"	yes
/28	1407	GM	PC, Cool	yes	Less flow	120	Vis		15.6	7.91	4370	6.8	"	NO
5/31/94	1227	CW/JMM	Warm, Sunny	yes		—	—		14.6	7.61	3500	6.5	"	NO
/19	1430	CW/GM	" "	yes	Weir in place	38	W		19.3	7.96	4090	7.4	Weir	yes
6/30/94	1227	RB	cool, rain	yes	clear, flow is spread out	~~240~~	~~VE~~ W		14.1	7.73	4599	9.0	"	NO
7/20/94	1130	GM	Sunny Hot	yes	clear	40	W		20.9	7.99	4950	7.2	"	yes
8/24/94	1009	GM	Sunny Hot	yes	clear	40	W		20.4	7.82	5200	6.8	"	NO
9/22/94	1556	GM	Sunny Hot	yes	clear	36	W		24.2	7.50	5130	7.3	"	NO
10/27/94	1347	RB6	Sunny cool	yes		40	W		21.8	7.86	5179.7	7.8	"	yes
11/19/94	1405	RB6/GM	cloudy cool	yes		48	W		13.0	8.06	5320	7.8	"	yes
12/21/94	1157	RB6/REG	overcast, cool	yes		40.0	Weir		6.1	8.44	5093	13.9	"	no

Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

DOGM Permit Boundary Water Quality Monitoring Plan

Huntingdon Engineering & Environmental

Monitoring Location: CRB - Boundary

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow Meas. Method	Flow (gpm)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12/19/94	1300	RDG/REG	clear	yes	weir	40.0	6.6	7.92	5214	14.9	yes	

Flow Measurement Methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: WELL (E. Carbon Municipal well) DOGM

Runoff Basin / Spring / Other: Well

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO ~~Meter~~ No.	Collection Point	Sample Taken (yes/no)
6/3/93	1130	GM CW	Sunny Hot	~~yes~~ N.	Clear water	50 gpm	CC		16	7.8	1800	7.2	Hose	yes
7/27	1700	GM	Sunny Hot	yes	" "	50 gpm	V.E.		17	8.18	3100	5.8	Hose	NO
8/26/93	1036	GM	Overcast	yes	" "	50 gpm	CC		12	6.77	920	4.9	"	NO
9/2/93	1486	GM CW	SW	yes	" "	46	CC		15	7.10	1450	5.2	"	yes
10/27	0915	MH	Windy	yes	" "	50	CC		7	8.00	1300	4.5	—	NO
11/10	1250	MH	Cold	yes	" "	50	CC		10.0	7.27	1300	4.6	—	NO
12/9	1514	GM	Cold	NO	Pipe from well to stand pipe is Frozen.								—	NO
1/14/94	1357	GM	Cold Clear	NO	Pipe is still Frozen.								—	NO
2/28	1240	GM	PC, Cold	NO	"								—	NO
3/31/94	13:05	CW/TMM	Warm, Sunny	NO	OUT OF COMMISSION: unsimplate Due to MAINTENANCE								—	NO
4/19	1541	CW/GM	" "	NO	" "		"							NO
5/31/94	1330	RG	cool, rainy	NO	the well is out of operation		the	pump	is	pulled				NO
6/27/94	1205	GM	Sunny Hot	yes		~50			17.2	7.63	1710	7.2	Pump Hose	yes
7/21/94	1039	GM	Sunny Hot	yes		~50			15.0	8.37	~~1300~~ 1790	8.8	"	NO
8/22/94	1224	GM	Sunny Hot	yes	Well is spraying inside of hut	N/A			18.3	7.97	1225	7.9	"	NO
9/27/94	11:33	RBG	sunny cool	no	well turned on & off after sap.	NA			14.7	7.65	1510 (corr) 10.7	9.4	"	yes
10/19/94	1436	RBG/GM	cloudy, cool	no	wells not in use;	NA			12.2	8.41	644.0	7.8		yes
1/21/94	1111	RBG/REG	overcast, cool	no	well not in use.	NA			7.1	8.10	1215	10.9		no

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

DOGM Permit Boundary Water Quality Monitoring Plan

Huntingdon Engineering & Environmental

Monitoring Location: Well - E. Carbon Municipal Well

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow Meas. Method	Flow (gpm)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12/19/94	1118	RB6/RE6	clear	no		NA	8.3	7.26	1428.3	8.6	yes	

Flow Measurement Methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 004 (cont.) UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow ~~(cfs)~~ gpm	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (~~F~~ C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
6/29/93	0853	GM/MH	Sunny, Hot	NO	No Discharge, Slurry water is bypassing decanting process & into 3rd bay									
7/12/93	1337	CW GM	SH	NO	Some water in Basin lower than 0/ng									NO
7/27/93	1024	GM	S, H	NO	1'-2' of water in basin									"
8/12/93	1350	MH	S, H	NO										"
8/20	1400	MH	SW	NO	Dry									"
9/2/93	1125	CW, GM	S, Warm	NO	No Discharge									"
9/30	1800	RG	S, Windy	Yes		49	Flume		12	8.09	2900		below flume	yes
10/13	1135	MH	Cal/Windy	Yes	Black high TSS	97.4	"		10.4	8.28	1300		"	
10/26	1140	MH	Cool/Windy	Yes					7.9	8.44	1250	6.5		
11/16	1200	MH	Cold	yes	Much Fines (TSS)	97.35	Flume		4.2	8.9	1250	6.1	"	yes
11/30	1312	GM CW	Cold	yes	Black V. high TSS	107.6	Flume		4.9	8.78	1050		"	yes
12/9	1036	GM	Cold Overcast	yes	Black V. high TSS high flow	148.1	Flume		3.4	8.24	2023	7.4	"	yes
12/23	1040	GM	Cold Overcast	yes	Clear V. Low Flow	4.3	Flume		3.0	8.57	2676	—	"	yes
1/13/94	1345	GM	Clear Cold	~~NO~~	NO DISCHARGE	—	—							NO
1/31/94	1348	MH	Clear Cold	NO	No Discharge	0	—	—	—	—		—	—	NO
2/24/94	1124	GM	Sunny Cool	NO	No Discharge	—								NO
2/28	1450	GM	PC, Cool	NO	No Discharge	—								no
						—								

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 004 (CONT) UPDES

(Runoff Basin) Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (~~°C~~)	pH	SC (umhos)	DO ~~Meter~~ No.	Collection Point	Sample Taken (yes/no)
3/31/94	10:41	CW/TMm	Warm, Sunny	No	OUTFALL IS Dry									NO
4/19/94	1604	GM/CW	" "	NO	Basin is nearly Empty (1" inches)									NO
4/29/94	1133	~~GM~~ CW	rain + mun	No	Outfall is dry									NO
5/10/94	1115	CW	overcast, cool	No	Basin is dry									No
5/31/94	1425	RG	rain	NO	Basin is dry									No
6/8/94	1428	RG	Clear Warm	NO	Basin is Dry									NO
6/23/94	1250	GM	Sunny Hot	NO	Basin is Dry									NO
7/14/94	1607	RG	Clear Hot	NO	Dry; Installed Measuring Staff									No
7/20/94	1611	GM	Sunny Hot	NO	Dry									NO
8/9/94	1420	RG	Warm PC	NO	Some Puddles									NO
8/23/94	1239	GM	Sunny Hot	NO	Dry									NO
9/29/94	0920	RBG	cloudy, cool	NO	Dry (outfall) Basin - puddles									No
10/19/94	1502	RBG/GM	cloudy/cool	NO	outfall dry; Basin - .05" H_2O									NO
11/01/94	1544	RBG	cloudy, cool	NO	outfall-dry, Basin - ≈1' H_2O									NO
11/21/94	1044	RBG/REG	overcast, cool	NO	basin - frozen H_2O; no H_2O level									NO
12/12/94	1220	RBG	clear/cool	NO	basin - dry, snow on floor									NO
12/19/94	1031	RBG/REG	clear	NO	basin - No H_2O level, snow									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 007 UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO Meter No.	SC corrected ~~Collection Point~~	Sample Taken (yes/no)
11/5/92	1150	GM	Clear, Cold	yes	Murky, stormwater	<1	VE	<2'	2	8.78	700	8.6	1230	
4/20	1621	GM	Warm Partly Cl.	NO	Basin is Dry									
5/4/93	1157	GM	" "	NO	Basin is Dry									
6/2a	1434	GM/MH	Sunny Hot	NO	Basin is Dry									
7/12/93	1353	CW GM	S, H	NO	Basin is Dry									
7/27/93	1527	GM	S, H	NO	Basin is Dry									
8/12/93	1406	MH	S, H	NO	Basin is Dry									
8/20/93	1430	MH	S, W	NO	Basin is Dry									
9/2/93	1504	CW, GM	SW	NO	Basin is Dry									
9/30	1703	CW, RG	S, W	NO	Basin is Dry									
10/13	1040	MH	Cloudy	NO	Basin contains ~1-2" h.h.									
10/26	1251	MH	Windy	NO	6" of water									
11/16	1345	MH	Cold	NO	1.5" of Snow in Basin									
11/20	1440	GM CW	Cold	NO	Damp spots in Basin									
12/9	1142	GM	Cold	NO	Snow in Basin									
12/23	1153	GM	Cold	NO	3" Snow in basin									
1/14/94	1001	GM	Cold Clear	NO	Snow in Basin									
1/31/94	1500	MH	Cold Clear	No	Basin is Dry									

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 007 Rail Cut Pond UPDES

(Runoff Basin) Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (F/C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
2/24/94	1146	GM	Sunny Cool	NO	Basin is Damp									NO
2/28	1417	GM	PC, Cool	NO	Basin is Damp									NO
3/16/94	1144	GM	PC, Warm	NO	Basin is Dry									NO
3/31/94	11:30	CW/TMM	Warm, Sunny	NO	No Water in Basin									NO
4/19	1507	CW/GM	" "	NO	Dry Basin									NO
4/29	1213	CW	rain & sun	NO	Some rain water present in	basin								NO
5/17/94	1044	CW	overcast/cool	NO	Basin is dry									NO
5/31/94	1203	RG	rain	NO	Basin is dry									NO
6/8/94	1557	RG	Clear Warm	NO	Basin is Dry									NO
6/23/94	1046	GM	Sunny Hot	NO	Basin is Dry									NO
7/11/94	1811	RG	Clear Hot	NO	Dry									NO
7/21/94	1022	GM	Sunny/Hot	NO	Dry									NO
8/9/94	1705	RG	Warm, PC	NO	~10" of water									NO
8/22/94	1532	GM	Sunny Hot	NO	Muddy, No standing water.									NO
9/29/94	0820	RBG	cloudy, cool	NO	basin is dry									NO
10/19/94	1337	RBG/GM	cloudy, cool	NO	Discharge pt. damp; basin shallow H_2O									NO
11/21/94	1620	RBG	cloudy, cool	NO	Discharge pt. dry basin - small puddles									NO
11/21/94	1137	RBG/REG	overcast, cool	NO	basin - muddy floor									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 007 - Rail Cut Pond

Runoff Basin

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12-2-94	1320	RBG	clear, cool	NO	—	—	—	—	—	—	NO	Basin - dry
12-19-94	1240	RBG/REG	clear	NO	—	—	-	—	-	—	NO	Snow in basin & discharge pt

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 008 OLD COARSE REFUSE POND UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters Temp (F)	pH	SC (umhos)	Meter No.	Collection Point	Sample Taken (yes/no)
4/29	1636	GM	PC	NO	Basin is Dry									
5/7	1215	GM	PC Warm	NO	Basin is Dry									
6/29	1404	GM/MH	Sunny Hot	NO	Basin is Dry									
7/12/93	1400	CW GM	S, H	NO	Basin is Dry									
7/27	1034	GM	S, H	NO	Basin is Dry.									
8/12/93	1413	MH	S, H	NO	Basin is Dry									
8/20	1410	MH	Warm	NO	Basin is Dry									
9/2/93	1346	CW, GM	Warm	NO	Basin is Dry Installed Meter Post									
9/30	1402	CW RG	Windy Warm	NO	Basin is Dry									
10/13	1120	MH	Warm	NO	6" of Water									
10/26	1100	MH	Windy	NO	Basin is Dry									
11/16	1145	MH	Cold	NO	1" of snow in Basin									
11/30	1520	GM CW	Cold	NO	"									
12/9	1133	GM	Cold	NO	Snow in Basin									
12/23	1123	GM	Cold	NO	2" of snow in Basin									
1/14/94	0940	GM	Cold Clear	NO	Snow in Basin									
1/31/94	1400	MH	Cold Clear	NO	Trace of Snow in Basin									
2/24/94	1135	GM	Sunny Cool	NO	Basin is Damp.									

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 008 Old Coarse Refuse Pond UPDES

(Runoff Basin) Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (~~F~~C)	pH	SC (umhos)	DO ~~Meter~~ No.	Collection Point	Sample Taken (yes/no)
2/28/94	1445	Gm	PC Cal	NO	Basin is Damp.									NO
3/16/94	1137	GM	PC, WARM.	NO	BASIN IS Dry									NO
3/31/94	11:02	CW/TMM	WARM, SUNNY	NO	POND NO WATER									NO
4/19	1559	CW/GM	" "	NO	Dry Basin									NO
4/29	1246	CW	rain/muddy	No	rain water in Basin									No
5/17/94	1109	CW	overcast/cool	No	Basin is dry									No
5/31/94	1412	RG	rain	No	Basin is dry									NO
6/8/94	1449	RG	Clear Warm	NO	Basin is Dry									NO
6/23/94	1257	GM	Sunny Hot	NO	Basin is Dry									NO
7/11/94	1547	RG	Clear Hot	NO	Dry									NO
7/21/94	1620	GM	Sunny Hot	NO	Dry									NO
8/9/94	1456	RG	Warm, PC	NO	2' of Water at standpipe									NO
8/23	1243	GM	Sunny Hot	NO	Dry, (Sl. Muddy)									
9/29/94	0935	RBG	cloudy, cool	NO	outfall-dry basin-dry w/mud									NO
10/19/94	1516	RBG/GM	cloudy, cool	NO	outfall-dry basin-P: 2" H_2O									NO
11/01/94	1531	RBG	cloudy, cool	NO	basin-muddy w/ puddles									NO
11/21/94	1054	RBG/REG	overcast, cool	NO	basin-frozen puddles									NO
12/2/94	1230	RBG	clear, cool	NO	basin-frozen puddles									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 008 Old Coarse Refuse Pond

Runoff Basin

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters							Remarks (color, sheen, odor, etc.)
					Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	
12/19/94	1056	RPG/REG	clear	NO	—	—	—	—	—	—	NO	Basin - No H_2O; snow on floor

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

UPDES

MONITORING LOCATION NUMBER: 009 Pasture Pond

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters Temp (F)	pH	SC (umhos)	Meter No.	Collection Point	Sample Taken (yes/no)
4/29	1606	GM	Cloudy	NO	Basin is Dry									
5/7	1120	GM	PC.	NO	Basin is Dry									
6/29	1358	GM MH	Sunny/Hot	NO	Basin is Dry; has been expanded/deepened.									
9/12/93	1340	GM CW	Sit	NO	Basin is Dry									
7/27/93	1020	GM	Sit	NO	Basin is Dry									
8/17/93	1355	GM	Sit	NO	Basin is Dry									
8/20	1357	MH	SW	NO	Basin has 6" of black water									
9/7	1305	CW GM	SW	NO	Basin is Dry Installed Post									
9/30	1355	CW RG	Warm	NO	Basin is Dry									
10/13	1110	MH	Warm	NO	2" Water level Black Film.									
10/26	1215	MH	Warm	NO	2' Water level									
11/16	1230	MH	Cold	NO	2" W Level Black Water									
11/30	1307	GM CW	Cold	NO	Snowmelt & Ice present									
12/9	1117	GM	Cold	NO	No water / Ice in basin									
12/23	1105	GM	Cold	NO	6" of ice in basin									
1/14/94	0933	GM	Cold Clear	NO	Dry									
1/31/94	1410	MH	Clear/Cold	NO	Dry									
3/24	1121	GM	Sunny Cool	NO	Basin is Damp.									

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate; CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 009 Pasture Pond UPDES

(Runoff Basin) Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
2/28/94	1440	GM	PC/Cool	NO	Basin is Damp.									NO
3/16/94	1129	GM	PC/WARM	NO	BASIN IS MOIST									NO
3/31/94	10:53	CW/DAM	WARM, SUNNY	NO	POND DRY									NO
4/19/94	1553	CW/GM	" "	NO	Dry Pond.									NO
4/29/94	1237	CW	rain & warm	No	Some water in basin									NO
5/17/94	1105	CW	overcast/cool	No	Basin is dry									No
5/31/94	1350	RG	rain	No	6" of water in basin									No
6/8/94	1422	RG	Warm Clear	NO	1' of water in Basin									No
6/23/94	1252	GM	Sunny Hot	NO	6" of water in basin									NO
7/11/94	1527	RG	Clear Hot	NO	Dry									NO
7/20/94	1608	GM	Sunny Hot	NO	Dry									NO
8/9/94	1517	RG	Warm, PC	NO	1-2' of water in Basin									NO
8/23	1236	GM	Sunny Hot	NO	1-2' of water in Basin.									NO
9/29/94	0912	RBG	cloudy, cool	NO	basin contains shallow H_2O									NO
10/9/94	1452	RB6/GM	Cloudy, cool	NO	outfall - dry basin - shallow H_2O									NO
11/01/94	1558	RB6	cloudy, cool	NO	basin - >1' H_2O									NO
11/21/94	1043	RB6/RE6	overcast, cool	NO	basin ≈ 6" H_2O, ice									NO
12-2-94	1248	RB6	clear, cool	NO	basin - puddles & coal sediment									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 009 Pasture Pond Runoff Basin

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12/19/94	1033	RBG/REG	clear	NO	–	–	–	–	–	–	NO	6" frozen H_2O some snow in basin

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen-Northern

MONITORING LOCATION NUMBER: 012 Coarse Refuse Toe UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters Temp (F)	pH	SC (umhos)	Meter No.	Collection Point	Sample Taken (yes/no)
4/29	1624	GM	PC	NO	Basin is Dry									
5/9	1159	GM	PC	NO	Basin is Dry									
6/29	1435	GM/MH	Sunny/Hot	NO	Basin is Dry									
7/12/93	1350	CW/GM	Sl H	NO	Basin is Dry									
7/27/93	1529	CW	Sl H	NO	Basin is Dry									
8/12/93	1404	MH	Sl H	NO	Basin is Dry									
8/20	1450	MH	Warm	NO	Basin is Dry									
9/2	1515	CW/GM	Warm	NO	Basin is Dry									
9/30	1709	CW RG	Warm	NO	Basin is Dry									
10/13	1035	MH	Warm	NO	2' Water level									
10/26	1300	MH	Windy	NO	2' WL									
11/16	1350	MH	Cold	NO	2' WL No ice Layer									
11/30	1443	GM CW	Cold	NO	Water/Ice 5 5" below discharge									
12/9	1140	GM	Cold	NO	ICE/water 2" in basin									
12/23	1156	GM	Cold	NO	2" of Snow in Basin									
1/14/94	1008	GM	Cold Clear	NO	6" of Ice									
1/31/94	1510	MH	Cold/Clear	NO	6" of Ice									
2/24	1141	GM	Sunny Cool	NO	1' of Ice/water in Basin									

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 012 Coarse Refuse Toe UPDES

(Runoff Basin) Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
2/28	1414	GM	PC Cool	NO	1'-2' of Water in Basin									NO
3/16/94	1143	GM	PC WARM	NO	1' water in BASIN									No
3/31/94	11:35	CW/TMM	warm, Sunny	NO	WATER IN BASIN									No
4/19/94	1447	CW/GM	" "	NO	6" of water in Basin									No
4/29/94	1218	CW	rain + snow	No	rain water present in basin									NO
5/17/94	1047	CW	overcast/cool	No	water in basin, no discharge									No
5/31/94	1155	RG	rain	No	4" of water in basin									No
6/8/94	1550	RG	Warm Clear	No	6" of water in basin									No
6/23/94	1048	GM	Sunny Hot	NO	6" of Water in basin									NO
7/11/94	1740	RG	Clear Hot	NO	Dry									NO
7/21/94	1020	GM	Sunny Hot	NO	Dry									NO
8/9/94	1647	RG	Warm, PC	NO	1' of water									NO
8/22/94	1535	GM	Sunny Hot	NO	1' of water in Basin									NO
9/29/94	0835	RB6	cloudy, cool	NO	Basin has ≈ 1' of water									NO
10/9/94	1400	RB6/GM	cloudy, cool	NO	outfall - dry basin - 2-3" H_2O									NO
11/01/94	1625	RB6	Cloudy, cool	NO	outfall - dry basin ≈ 1-2' H_2O									NO
11/21/94	1156	RB6/REG	overcast, cool	NO	basin - frozen H_2O									NO
12/2/94	1525	RB6	clear, cool	NO	basin - frozen H_2O									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 012 Coarse Refuse Toe

Runoff Basin

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12-19-94	1257	RBG/REG	clear	NO	–	–	–	–	–	–	NO	basin - H_2O frozen >6"

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah
Groundwater Discharge Permit Number UGW070002
Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 014 Coal Pile Sed. Pond UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters Temp (F)	pH	SC (umhos)	Meter No.	Collection Point	Sample Taken (yes/no)
4/29	1602	GM	PC	NO	1' below top of overflow									
5/1	1053	GM	PC	NO	1' " " "									
6/29	1355	GM MH	Sunny Hot	NO	" " " "									
7/19/93	1330	GM CW	S, H	NO	Low water Level.									
7/27/93	1018	GM	S, H	NO	Damp seeps in Basin									
8/12/93	1342	GM	MH	NO	Dry Basin									
8/20	1355	MH	SH	NO	Basin is Dry									
9/2	1243	MH GM	WM	NO	Basin is Dry Installed Marker Post.									
9/30	1248	CW RG	WM	NO	Basin is Dry Much Coal Fines in Basin									
10/13	1105	MH	WM	NO	1' from Discharge Black water Coal Fines.									
10/26	1225	MH	Windy	NO	" " "									
11/16	1240	MH	Cold	NO	1.5' from DP.									
11/30	1257	GM CW	Cold	NO	Ice/snowmelt at discharge point through actual pipe.									
12/9	1115	GM	Cold	NO	Ice 1' below overspill									
12/23	1102	GM	Cold	NO	Ice 1' below overspill									
1/14/94	0930	GM	Cold Clear	NO	Ice 1' below overspill									
1/31/94	1430	MH	Cold Clear	NO	No Ice. Film sheen present 2' below spill pipe									
2/24	1117	GM	Sunny Cold	NO	Water/Ice 1.5' below top									

* Basin water level measurements are taken from permanent reference point at basin location.
Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 014 Coal Pile Sed Pond UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
2/28	1438	GM	PC Cool	NO	1' below overspill									NO
3/16/94	1126	GM	PC WARM	NO	2" below overspill pipe									NO
5/31/94	10:56	CW/TMM	Warm, Sunny	NO	WATER IN POND									NO
7/19/94	1548	CW/GM	" "	NO	Water 2' below overflow pipe									NO
4/25/94	1151	CW	rain & hail	NO	water within 2' of discharge pipe									NO
5/17/94	1059	CW	overcast/cool	NO	pond is nearly full									NO
5/31/94	1345	RG	rain	NO	6" of water in basin									NO
6/8/94	1415	RG	Warm Clear	NO	6" of water in basin									NO
6/23/94	1242	GM	Sunny Hot	NO	6" of water in basin									NO
7/11/94	1525	RG	Clear Hot	NO	3" of water in basin									NO
7/20/94	1606	GM	Sunny Hot	NO	Dry Basin									NO
8/9/94	1512	RG	Warm PC	NO	≈ 1' of water									NO
8/23/94	1237	GM	Sunny Hot	NO	2" of water in places									NO
9/29/94	0907	RBG	cloudy, cool	NO	≈ 1' of water in basin									NO
10/19/94	1450	RBG/GM	cloudy, cool	NO	outfall - puddles basin - 6" H_2O									NO
11/01/94	1555	RBG	cloudy, cool	NO	discharge pt. - clump basin - 7" H_2O									NO
11/21/94	1045	RBG/REG	overcast, cool	NO	point being dug out									NO
12/2/94	1245	RBG	clear, cool	NO	basin - enlarged & dry									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 014 Coal Pile Sed. Pond

Runoff Basin

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters: Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	Remarks (color, sheen, odor, etc.)
12-19-94	1030	RBG/REG	clear	NO	—	—	—	—	—	—	NO	outfall ditch - some snow

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah
Groundwater Discharge Permit Number UGW070002
Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 016 Borrow Area Pond. UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters Temp (F)	pH	SC (umhos)	Meter No.	Collection Point	Sample Taken (yes/no)
4/20	1608	GM	Overcast	NO	Basin is Dry									
5/1	1129	GM	PC	NO	Basin is Dry.									
6/20	1400	GM/MH	Sunny Warm	NO	Basin is Dry.									
7/22/03	1356	GM CW	S H	NO	Basin is Dry									
7/29/03	1034	GM	S H	NO	Basin is Dry									
8/12/03	1410	MH	S H	NO	Basin is Dry									
8/20	1420	MH	S H	NO	Basin is Dry									
9/2	1317	CW GM	S W	NO	Basin is Dry									
9/30	1410	CW RG	W	NO	Basin is Dry									
10/13	1130	MH	W	NO	Basin is Dry									
10/26	1105	MH	windy	NO	Basin is Dry									
11/16	1145	MH	Cold	NO	1" of snow									
11/30	1528	GM CW	Cold	NO	"									
12/9	1130	GM	Cold	NO	Snow in basin									
12/23	1118	GM	Cold	NO	2" of snow in basin									
1/13/04	0936	GM	Cold Clear	NO	Snow in basin									
1/31/04	1355	MH	Cold Clear	NO	1" of Snow in Basin									
3/24	1133	GM	Sunny Cool	NO	Little Snow in basin									

* Basin water level measurements are taken from permanent reference point at basin location.
Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen – Northern

MONITORING LOCATION NUMBER: 016 Borrow Area Pond. UPDES

Runoff Basin / Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters: Temp (°C)	pH	SC (umhos)	DO Meter No.	Collection Point	Sample Taken (yes/no)
3/28	1443	GM	PC, Cool	NO	Basin is Dry.									
3/16/94	1136	GM	PC, warm	NO	Basin is Dry									NO
3/31/94	1100	CW/GMM	Warm, Sunny	NO	NO Water IN Pond									No
4/19/94	1556	CW/GM	" "	NO	Dry Basin									No
4/29/94	1240	CW	rain + hail	NO	Minor water puddles in basin									No
5/17/94	1208	CW	cool/cool	NO	Basin is Dry									No
5/31/94	1357	RG	rain	NO	Basin is Dry									No
6/8/94	1442	RG	Warm Clear	NO	Basin is Dry									No
6/27/94	1259	GM	Sunny Hot	NO	Basin is Dry									NO
7/11/94	1538	RG	Clear Hot	NO	Dry									NO
7/20/94	1617	GM	Sunny, Hot	NO	Dry									NO
8/9/94	1445	RG	Warm PC	NO	3" of water									NO
8/23	1241	GM	Sunny/Hot.	NO	Dry									NO
9/29/94	0930	RBG	Cloudy cool	NO	Basin is dry									NO
10/19/94	1510	RBG/GM	cloudy, cool	NO	Basin - dry									NO
11/01/94	1538	RBG	Cloudy cool	NO	Basin dry									NO
11/21/94	1050	RBG/REG	overcast, cool	NO	basin dry snow on bottom									NO
12-2-94	1228	RBG	clear, cool	NO	basin - dry, snow on floor									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

UPDES Permit Number UT0024759

Huntingdon Engineering & Environmental

OUTFALL NUMBER: 016 Borrow Area Pond

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Field Parameters							Remarks (color, sheen, odor, etc.)
					Flow (gpm)	Water Level (feet)	Temp (C)	pH (su)	SC (um)	DO (mg/L)	Sample Taken (yes/no)	
12-19-94	1050	RBG/REG	clear	NO	—	—	—	—	—	—	NO	basin - 3" of snow

ATTACHMENT C

Analytical Report

Mountain States Analytical
The Quality Solution

Eckhoff, Watson & Preator Engineering
1121 East 3900 South
Suite C100
Salt Lake City, UT 84124

Attn: Mr. Scott Carlson
Project: Sunnyside Cogeneration

Sample ID: CRS
Matrix: Waste Water

MSAI Sample: 19193
MSAI Group: 4713
Date Reported: 06/06/94

Discard Date: 07/06/94
Date Submitted: 05/20/94
Date Sampled: 05/19/94
Collected by: JC
Purchase Order:
Project No.: Q041994A

Test	Analysis	Results as Received	Units	Limit of Quantitation
0248A	Boron by ICP Method: SW-846 6010A	1.01	mg/l	0.10
7243	Aluminum by ICP Method: SW-846 6010A	ND	mg/l	0.20
7250	Calcium by ICP Method: SW-846 6010A	482	mg/l	1.0
7253	Copper by ICP Method: SW-846 6010A	ND	mg/l	0.02
7254	Iron by ICP Method: SW-846 6010A	7.21	mg/l	0.10
7257	Magnesium by ICP Method: SW-846 6010A	312	mg/l	1.0
7258	Manganese by ICP Method: SW-846 6010A	1.32	mg/l	0.02
7261	Nickel by ICP Method: SW-846 6010A	ND	mg/l	0.040
7262	Potassium by ICP Method: SW-846 6010A	33.1	mg/l	1.0
7267	Sodium by ICP Method: SW-846 6010A	492	mg/l	5.0
8259	Mercury by Cold Vapor AA Method: EPA 245.1	ND	mg/l	0.0005

Mountain States Analytical
The Quality Solution

Eckhoff, Watson & Preator Engineering

MSAI Sample: 19193
MSAI Group: 4713

Sample ID: CRS

Test	Analysis	Results as Received	Units	Limit of Quantitation
0201	Alkalinity as CaCO3 (pH 4.5) Method: EPA 310.1			
	Bicarbonate	456	mg/l	1
	Carbonate	ND	mg/l	1
	Hydroxide	ND	mg/l	1
0206	Solids, Total Suspended (TSS) Method: EPA 160.2	24	mg/l	4
0212	Solids, Total Dissolved Method: EPA 160.1	5,170	mg/l	10
0216	Hardness as CaCO3 - Titrimetric Method: EPA 130.2	2,640	mg/l	5
0221	Nitrogen, Ammonia by distillation Method: EPA 350.2	0.9	mg/l	0.5
0235	Biochemical Oxygen Demand, Total Method: EPA 405.1	< 6	mg/l	2
0242	Cyanide, Total Method: EPA 335.2	ND	mg/l	0.005
0434	Phenolics w/ww Method: EPA 420.1	ND	mg/l	0.01
0475	Acidity (to pH 3.7 and 8.3) Method: EPA 305.1	51	mg/l	5
1125	Sulfate, Turbidimetric Method: EPA 375.4	2,960	mg/l	2

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

Member: American Council of Independent Laboratories, Inc.

Mountain States Analytical
The Quality Solution

Eckhoff, Watson & Preator Engineering
1121 East 3900 South
Suite C100
Salt Lake City, UT 84124

Attn: Mr. Scott Carlson
Project: Sunnyside Cogeneration

Sample ID: CRC
Matrix: Waste Water

MSAI Sample: 19194
MSAI Group: 4713
Date Reported: 06/06/94

Discard Date: 07/06/94
Date Submitted: 05/20/94
Date Sampled: 05/19/94
Collected by: JC
Purchase Order:
Project No.: Q041994A

Test	Analysis	Results as Received	Units	Limit of Quantitation
0248A	Boron by ICP Method: SW-846 6010A	1.01	mg/l	0.10
7243	Aluminum by ICP Method: SW-846 6010A	ND	mg/l	0.20
7250	Calcium by ICP Method: SW-846 6010A	447	mg/l	1.0
7253	Copper by ICP Method: SW-846 6010A	ND	mg/l	0.02
7254	Iron by ICP Method: SW-846 6010A	2.49	mg/l	0.10
7257	Magnesium by ICP Method: SW-846 6010A	312	mg/l	1.0
7258	Manganese by ICP Method: SW-846 6010A	0.56	mg/l	0.02
7261	Nickel by ICP Method: SW-846 6010A	ND	mg/l	0.040
7262	Potassium by ICP Method: SW-846 6010A	33.9	mg/l	1.0
7267	Sodium by ICP Method: SW-846 6010A	503	mg/l	5.0
8259	Mercury by Cold Vapor AA Method: EPA 245.1	ND	mg/l	0.0005