Final

Camp Allen Landfill RI Report
Norfolk Naval Base
Norfolk, Virginia

03.13-07/01/94-00595

Volume IV
Appendix R-Z

Prepared For:

Department of the Navy
Atlantic Division
Naval Facilities
Engineering Command
Norfolk, Virginia

Under the

LANTDIV CLEAN Program

Comprehensive Long-Term
Environmental Action Navy

Reference:
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July 1994

Baker
Baker Environmental, Inc

FOSTER WHEELER
FOSTER WHEELER ENVIRESPONSE, INC.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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Draft Final
Remedial Investigation Report

Camp Allen Landfill
Norfolk Naval Base

Norfolk, Virginia

Appendix Volume ~~III~~ IV
Appendices R through Z

Prepared For:

Department of the Navy
Chesapeake Division
Naval Facilities
Engineering Command

Washington, D.C.

Under the

LANTDIV CLEAN Program

Comprehensive Long-Term
Environmental Action Navy

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DRAFT

APPENDIX R

APPENDIX R
CANISTER DATA SHEETS

SUMMARY OF CANISTER SAMPLING DATA SHEETS

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/12/93	AA-01 A	0723	1530	487	-30	-7.1	12.51	9.30	BLDG 482 - DORM 2A LOCATED ON BED/RACK FEMALE DORM.
1/12/93	AA-02 A	0725	1533	488	-30	-3.6	12.74	10.71	BLDG 482 - MESS/KITCHEN LOCATED NEAR STEAMER PLACED ON FLOOR.
1/12/93	AA-03A	0728	1536	488	-30	-0.9	12.50	11.81	BLDG 482 - DORM 2B NEAR PIPE CHASE/UTILITY DOOR. PLACED ON FLOOR.
1/12/93	AA-04A	0730	1537	487	-30	-3.7	12.49	10.69	BLDG 482 - C DECK (3RD FLOOR) ON TABLE ~4' HIGH. NEAR CLEANING GEAR ROOM.
1/12/93	AA-05A	0735	1546	491	-30	-3.9	12.63	10.52	BLDG 483 - LAUNDRY PLACED ON TABLE ~4' HIGH ALONG WEST WALL NEAR VENTS.
1/12/93	AA-06A	0737	1548	491	-30	-1.6	12.69	11.45	BLDG 483 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW-GROUND.
1/12/93	AA-07A	0718	1520	482	-30	0	12.67	12.33	BLDG 484 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW-GROUND.
1/12/93	AA-08A	0715	1516	481	-30	-3.0	12.81	11.11	BLDG 484 - E. CORRIDOR PLACED ON PODIUM ~5' HIGH.

Data Checked by: KJM / BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour) Start	Sampling Period (hour) Stop	Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
1/12/93	AA-09A	0742	1553	491	-30	-2.0	12.30	11.29	BLDG 486 - QUARTER DECK PLACED ON TABLE ~4' HIGH.
1/12/93	AA-10A	0721	1525	484	-30	0.4	12.26	12.44	BLDG 482 - QUARTER DECK CONTROL ROOM. PLACED ON SHELF ~5' HIGH.
1/12/93	AA-11A	0744	1554	491	-30	-3.2	12.52	10.80	BLDG 486 - DORM 1 2ND FLOOR, PLACED ON DESK ~3' HIGH.
1/12/93	AA-12A	0742	1542	480	-30	-1.4	12.51	11.80	GAS MONITORING STATION B-8. LOCATED ON EASTERN SIDE OF BRIG. POINT SOURCE
1/12/93	AB-01A	0725	1525	480	-30	-0.5	12.31	12.17	CAES - SECTION D PLACED IN SOUTHEAST CORNER WITHIN BREATHING ZONE.
1/12/93	AB-02A	0723	1523	480	-30	0.8	12.72	12.71	CAES - ANNEX PLACED ALONG WEST WALL IN BREATHING ZONE. (ROOM 32)
1/12/93	AB-03A	0717	1518	481	-30	0	12.55	12.45	CAES - BOILER ROOM PLACED ON FLOOR NEAR IN-COMING UTILITIES.
1/12/93	AB-04A	0721	1521	480	-30	-0.9	12.64	12.07	CAES - SECTION B PLACED BETWEEN CLASSROOMS 4! FROM OUTSIDE DOOR IN BREATHING ZONE.

Data Checked by: KJM / BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/12/93	AB-05A	0719	1520	481	-30	-7.2	12.53	9.44	CAES - SECTION A PLACED BETWEEN K5 + K6 ~ 6' FROM OUTSIDE DOOR IN BREATHING ZONE.
1/12/93	A-01A	0736	1536	480	-30	1.2	12.20	12.95	AMBIENT - UPWIND LOCATION NORTHEAST OF HELIPORT LOCATED IN BREATHING ZONE.
1/12/93	A-02A	0745	1545	480	-30	-2.6	12.11	11.37	AMBIENT - DOWNWIND SOUTHWEST OF BLDG CA 486.
1/12/93	A-03A	0728	1530	482	-30	-3.2	12.65	11.09	AMBIENT - DOWNWIND NORTHWEST CORNER OF CAES.
1/12/93	A-04A	0732	1533	481	-30	-1.6	12.76	11.78	AMBIENT - UPWIND LOCATION NORTH OF AREA B IN PARK.
1/12/93	A-05A	0740	1540	480	-30	-3.8	12.73	10.87	AMBIENT - DOWNWIND SOUTH OF SALVAGE YARD.
1/12/93	TB-A								BLANK CANISTER ASSOCIATED WITH ROUND #1.

Data Checked by: KJM / BJC

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

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Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/13/93	AA-01B	0712	1516	484	-30	-7.4	12.51	9.21	BLDG 482 - DORM 2A LOCATED ON BED / RACK FEMALE DORM.
1/13/93	AA-02B	0714	1517	483	-30	-5.9	12.74	9.81	BLDG 482 - MESS/KITCHEN LOCATED NEAR STEAMER PLACED ON FLOOR.
1/13/93	AA-03B	0716	1520	484	-30	-1.5	12.50	11.61	BLDG 482 - DORM 2B NEAR PIPE CHASE / UTILITY CLOSET. PLACED ON FLOOR
1/13/93	AA-04B	0718	1522	484	-30	-4.1	12.49	10.56	BLDG 482 - C DECK (3RD FLOOR) ON TABLE ~4' HIGH. NEAR CLEANING GEAR ROOM.
1/13/93	AA-05B	0722	1526	484	-30	-4.7	12.63	10.24	BLDG 483 - LAUNDRY PLACED ON TABLE ~ 4' HIGH ALONG WEST WALL NEAR VENTS.
1/13/93	AA-06B	0724	1528	484	-30	-4.2	12.69	10.44	BLDG 483 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW GROUND.
1/13/93	AA-07B	0708	1511	483	-30	-0.7	12.67	12.08	BLDG 484 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW GROUND.
1/13/93	AA-08B	0707	1509	482	-30	-3.4	12.81	10.99	BLDG 484 - E. CORRIDOR PLACED ON PODIUM ~5' HIGH.

Data Checked by: KJM / BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC /KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/13/93	AA-09B	0728	1533	485	-30	-2.4	12.30	11.17	BLDG 486 - QUARTER DECK. PLACED ON TABLE ~ 4' HIGH.
1/13/93	AA-10B	0709	1515	486	-30	0	12.26	12.32	BLDG 482 - QUARTER DECK, CONTROL ROOM. PLACED ON SHELF ~ 5' HIGH.
1/13/93	AA-11B	0731	1534	483	-30	-3.3	12.52	10.80	BLDG 486 - DORM 1 2ND FLOOR. PLACED ON DESK ~ 3' HIGH.
1/13/93	AA-12B	0729	1530	481	-30	-2.2	12.51	11.51	GAS MONITORING STATION B-8. LOCATED ON EASTERN SIDE OF BRIG. POINT SOURCE.
1/13/93	AB-01B	0712	1514	482	-30	-0.7	12.31	11.91	CAES - SECTION D PLACED IN SOUTHEAST CORNER WITHIN BREATHING ZONE.
1/13/93	AB-02B	0710	1512	482	-30	0	12.72	12.20	CAES - ANNEX PLACED ALONG WEST WALL IN BREATHING ZONE (ROOM 32).
1/13/93	AB-03B	0705	1505	480	-30	-0.2	12.55	12.12	CAES - BOILER ROOM PLACED ON FLOOR NEAR IN-COMING UTILITIES.
1/13/93	AB-04B	0708	1508	480	-30	-0.9	12.64	11.83	CAES - SECTION B PLACED BETWEEN CLASSROOMS - 1' FROM OUTSIDE DOOR IN BREATHING ZONE.

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Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/13/93	AB-05B	0707	1507	480	-30	-7.2	12.53	9.19	CAES - SECTION A PLACED BETWEEN K5+K6 ~ 6' FROM OUTSIDE DOOR IN BREATHING ZONE.
1/13/93	A-01B	0722	1525	483	-30	1.2	12.20	12.70	AMBIENT - DOWNWIND LOCATION. NORTHEAST OF HELIPORT. LOCATED IN BREATHING ZONE.
1/13/93	A-02B	0731	1534	483	-30	-3	12.11	10.96	AMBIENT - UPWIND SOUTHWEST OF BLDG CA 486.
1/13/93	A-03B	0716	1519	483	-30	-3.5	12.65	10.73	AMBIENT - UPWIND NORTHWEST CORNER OF CAES.
1/13/93	A-04B	0720	1522	482	-30	-4.2	12.76	10.86	AMBIENT - DOWNWIND LOCATED NORTH OF AREA B IN PARK.
1/13/93	A-05B	0725	1528	483	-30	-4.2	12.73	10.46	AMBIENT - UPWIND SOUTH OF SALVAGE YARD
1/13/93	TB-B								BLANK CANISTER ASSOCIATED WITH ROUND # 2.

Data Checker: KJM/BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC /KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/14/93	AA-01C	0721	1521	480	-30	-6.9	12.51	9.20	BLDG 482 - DORM 2A LOCATED ON BED/RACK FEMALE DORM.
1/14/93	AA-02C	0723	1523	480	-30	-5.2	12.74	9.88	BLDG 482 - MESS/KITCHEN LOCATED NEAR STEAMER PLACED ON FLOOR.
1/14/93	AA-03C	0730	1530	480	-30	-1.3	12.50	11.47	BLDG 482 - DORM 2B NEAR PIPE CHASE/UTILITY CLOSET. PLACED ON FLOOR.
1/14/93	AA-04C	0732	1532	480	-30	-3.6	12.49	10.55	BLDG 482 - C. DECK (3RD FLOOR) ON TABLE ~4' HIGH. NEAR CLEANING GEAR ROOM.
1/14/93	AA-05C	0736	1536	480	-30	-4.1	12.63	10.26	BLDG 483 - LAUNDRY PLACED ON TABLE ~4' HIGH ALONG WEST WALL NEAR VENTS.
1/14/93	AA-06C	0738	1538	480	-30	-1.7	12.69	11.24	BLDG 483 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW GROUND.
1/14/93	AA-07C	0714	1516	482	-30	0.8	12.67	12.48	BLDG 484 - BOILER ROOM PLACED ON GRATE ABOVE UTILITY LINES COMING FROM BELOW GROUND.
1/14/93	AA-08C	0712	1514	482	-30	-3	12.81	10.93	BLDG 484 - E. CORRIDOR PLACED ON PODIUM ~5' HIGH.

Data Checked by: KJM /BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/14/93	AA-09C	0744	1544	480	-30	-1.8	12.30	11.20	BLDG 486 - QUARTER DECK PLACED ON TABLE ~ 4' HIGH.
1/14/93	AA-10C	0717	1518	481	-30	0.4	12.26	12.27	BLDG 482 - QUARTER DECK CONTROL ROOM. PLACED ON SHELF ~ 5' HIGH.
1/14/93	AA-11C	0745	1545	480	-30	-2.9	12.52	10.75	BLDG 486 - DORM 1 2ND FLOOR. PLACED ON DESK ~ 3' HIGH.
1/14/93	AA-12C	0723	1524	481	-30	-1.0	12.51	11.79	GAS MONITORING STATION B-8. LOCATED ON EASTERN SIDE OF BRIG. POINT SOURCE.
1/14/93	AB-01C	0707	1508	481	-30	-0.3	12.31	12.08	CAES - SECTION D PLACED IN SOUTHEAST CORNER WITHIN BREATHING ZONE.
1/14/93	AB-02C	0705	1506	481	-30	1.2	12.72	12.70	CAES - ANNEX PLACED ALONG WEST WALL IN BREATHING ZONE (ROOM 32).
1/14/93	AB-03C	0700	1500	480	-30	0	12.55	12.20	CAES - BOILER ROOM PLACED ON FLOOR NEAR IN-COMING UTILITIES.
1/14/93	AB-04C	0703	1503	480	-30	-0.7	12.64	11.91	CAES - SECTION B PLACED BETWEEN CLASSROOMS ~1' FROM OUTSIDE DOOR IN BREATHING ZONE

Data Checked by: KJM / BJC

Date: 29 JAN 93

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL

Performed by: BJC / KJM

Date	Canister Number	Sampling Period (hour)		Sampling Time (min)	Initial Canister Vacuum (in/Hg)	Final Canister Vacuum/ Pressure (in/Hg PSI)	Initial Flow (cc/min)	Final Flow (cc/min)	Comments
		Start	Stop						
1/14/93	AB-05C	0701	1501	480	-30	-6.9	12.53	9.32	CAES - SECTION A PLACED BETWEEN K5 + K6 ~ 6' FROM OUTSIDE DOOR IN BREATHING ZONE.
1/14/93	A-01C ~~AB-0~~	0718	1520	482	-30	2.0	12.20	13.03	AMBIENT - UPWIND LOCATION NORTHEAST OF HELIPORT LOCATED IN BREATHING ZONE.
1/14/93	A-02C	0726	1527	481	-30	-2.2	12.11	11.29	AMBIENT - DOWNWIND SOUTHWEST OF BLDG CA 486.
1/14/93	A-03C	0711	1514	483	-30	-2.8	12.65	11.02	AMBIENT - DOWNWIND NORTHWEST CORNER OF CAES.
1/14/93	A-04C	0715	1517	482	-30	-1.3	12.76	11.66	AMBIENT - UPWIND LOCATION NORTH OF AREA B IN PARK.
1/14/93	A-05C	0721	1522	481	-30	-3.4	12.73	10.79	AMBIENT - DOWNWIND SOUTH OF SALVAGE YARD.
1/14/93	TB-C								BLANK CANISTER ASSOCIATED WITH ROUND #3.

Data Checked by: KJM / BJC

Date: 29 JAN 93

CANISTER SAMPLING (ROUND 1) DATA SHEETS

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-01A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0723	-30	12.51	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2A, FEMALE DORMITORY. CANISTER PLACED ON BED RACK.
0824	NA	NA	NA	NA	DORM 2A FLOOR IS BEING MOPPED AND LAVATORY CLEANED.
0924	NA	NA	67.2	61.8	STRONG ODOR FROM CLEANING SOLUTION. AIR APPEARS STAGNANT. NO ACTIVITY TAKING PLACE.
1040	NA	NA	68.2	55.4	STRONG ODOR FROM CLEANING SOLUTION AIR APPEARS STAGNANT. NO ACTIVITY TAKING PLACE.
1156	NA	NA	66.8	53.8	STRONG ODOR FROM CLEANING SOLUTION. AIR APPEARS STAGNANT AND WARMER THAN THAT SPECIFIED BY THERMOHYGROMETER.
1259	NA	NA	67.1	51.7	STRONG ODOR FROM CLEANING SOLUTION STILL APPARANT. AIR APPEARS STAGNANT.
1353	NA	NA	67.6	54.2	STRONG ODOR FROM CLEANING SOLUTION. AIR REMAINS STAGNANT.
1530	-7.1	9.30	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 12 JAN 93

NA = Not Available

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-02A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0725	-30	12.74	—	—	INITIATED SAMPLING IN KITCHEN/MESS AREA UNDER STEAM POT (ON FLOOR). STEAMER IS OPERATING NEAR IN-COMING UTILITY.
0827	NA	NA	NA	NA	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
0930	NA	NA	66.8	NA	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
1044	NA	NA	67.3	59.2	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
1200	NA	NA	66.8	57.2	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e, FOOD PREPARATION).
1304	NA	NA	66.9	54.7	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1358	NA	NA	66.7	59.3	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREP
1533	-3.6	10.71	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 12 JAN 93

NA = Not Applicable

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-03A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0728	-30	12.50	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2B NEAR PIPE CHASE / UTILITY CLOSET ~18 PEOPLE OCCUPY DORM. NO ACTIVITY TAKING PLACE.
0831	NA	NA	NA	NA	NO ACTIVITY TAKING PLACE. AIR APPEARS STAGNANT.
0933	NA	NA	74.5	41.8	NO ACTIVITY TAKING PLACE. AIR APPEARS STAGNANT. ROOM HAS BEEN EMPTY SINCE COMMENCEMENT OF SAMPLING.
1048	NA	NA	71.4	42.5	NO ACTIVITY TAKING PLACE. AIR APPEARS VERY STAGNANT. WINDOWS OPEN ALONG WEST WALL.
1204	NA	NA	70.7	43.5	NO ACTIVITY TAKING PLACE. AIR APPEARS VERY STAGNANT. FOUR SETS (5) OF WINDOWS OPEN ALONG WEST WALL.
1307	NA	NA	71.0	43.4	NO ACTIVITY TAKING PLACE. AIR APPEARS VERY STAGNANT. FOUR SETS (5) OF WINDOWS OPEN ALONG WEST WALL.
1402	NA	NA	71.7	42.7	NO ACTIVITY TAKING PLACE. AIR APPEARS VERY STAGNANT. FOUR SETS (5) OF WINDOWS OPEN ALONG WEST WALL.
1536	-0.9	11.81	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 12 JAN 93

NA = Not Available

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CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-04A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0730	-30	12.49	—	—	INITIATED SAMPLING C-DECK (3RD FLOOR) ON TABLE ~ 4' HIGH ~ 5' FROM CLEANING GEAR ROOM DOOR.
0834	NA	NA	NA	NA	CLEANING GEAR ROOM DOOR IS OPEN STORAGE AREA FOR CLEANING SUPPLIES. FLOORS MOPPED/WAXED EVERY DAY.
0937	NA	NA	73.6	46.1	CLEANING GEAR ROOM DOOR IS OPEN STORAGE AREA FOR CLEANING SUPPLIES. NO ACTIVITY TAKING PLACE.
1051	NA	NA	73.9	44.0	CLEANING GEAR ROOM DOOR IS CLOSED. NO ACTIVITY TAKING PLACE. LIBRARY/ OFFICES LOCATED ALONG CORRIDOR.
1211	NA	NA	74.9	48.2	CLEANING GEAR ROOM DOOR IS OPEN NO ACTIVITY TAKING PLACE.
1311	NA	NA	72.8	51.7	CLEANING GEAR ROOM DOOR IS OPEN FLOORS ARE BEING MOPPED/BUFFED.
1405	NA	NA	73.4	48.5	CLEANING GEAR DOOR IS CLOSED. A BOTTLE (SPRAY) OF BLUE KNIGHT CLEANING SOLUTION IS ON TABLE NEXT TO CANISTER.
1537	-3.7	10.69	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 12 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-05A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0735	-30	12.63	—	—	INITIATED SAMPLING ON TABLE IN LAUNDRY AREA - ALONG WEST WALL NEAR LOUVERED VENTS. LAUNDRY OPERATIONS TAKING PLACE.
0840	NA	NA	NA	NA	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA FOR PERSONNEL.
0944	NA	NA	60.7	62.1	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA FOR PRISON PERSONNEL.
1057	NA	NA	61.1	60.5	WASHERS/DRYERS OPERATING - NO OTHER ACTIVITY TAKING PLACE.
1215	NA	NA	64.0	57.0	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA. STRONG ODOR FROM PAINTING ACTIVITIES IN ADJACENT CORRIDOR.
1317	NA	NA	62.6	60.5	LAUNDRY ACTIVITIES TAKING PLACE - LINENS PLACED AROUND CANISTER.
1412	NA	NA	62.7	60.2	HIGH ACTIVITY AREA - PERSONNEL FINALIZING LAUNDRY OPERATIONS FOR THE DAY
1546	-3.9	10.52	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 12 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-06A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0737	-30	12.69	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK. NO STEAM IS BEING DISCHARGED FROM LINES.
0844	NA	NA	NA	NA	PUBLIC WORKS COMMISSION PERSONNEL REPAIRING COMPRESSOR UNIT IN BOILER ROOM. DEGREASER/CLEANING SOLVENT WAS UTILIZED ON COMPRESSOR.
0948	NA	NA	66.5	48.9	NO STEAM GENERATION TAKING PLACE. NO OTHER ACTIVITY. NOTE BOILER ROOM IS OPEN TO THE ATMOSPHERE.
1100	NA	NA	64.0	54.0	NO STEAM GENERATION TAKING PLACE. NO OTHER ACTIVITY TAKING PLACE. NOTE BOILER ROOM IS OPEN TO THE ATMOSPHERE.
1222	NA	NA	62.9	57.3	NO STEAM IS BEING GENERATED. PUBLIC WORKS COMMISSION PERSONNEL WORKING ON COMPRESSOR UNIT.
1321	NA	NA	64.5	56.3	NO STEAM IS BEING GENERATED. PUBLIC WORKS COMMISSION PERSONNEL WORKING ON COMPRESSOR UNIT. ODOR FROM COMPRESSOR EXHAUST IS STRONG.
1416	NA	NA	60.4	66.3	NO STEAM IS BEING GENERATED. PWC PERSONNEL WORKING ON GENERATOR/COMPRESSOR. INFORMED BEI THAT DEGREASER WAS USED THROUGHOUT THE DAY.
1548	-1.6	11.95	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED. FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 12 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-07A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0718	-30	12.67	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK. STEAM IS BEING DISCHARGED FROM GRATE. (DOOR IS OPEN)
0817	NA	NA	NA	NA	STEAM IS BEING DISCHARGED FROM GRATE NOTE: BOILER ROOM IS FULLY ENCLOSED. (DOOR IS OPEN)
0915	NA	NA	55.5	93.0	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN)
1029	NA	NA	55.6	79.9	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN)
1145	NA	NA	55.0	90.1	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN)
1250	NA	NA	57.3	92.8	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN)
1345	NA	NA	58.3	92.2	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN)
1520	0	12.33	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 12 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-08A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0715	-30	12.81	—	—	INITIATED SAMPLING LOCATED NEAR CLASSROOMS AND SODA MACHINE IN CORRIDOR. NO ACTIVITY TAKING PLACE.
0816	NA	NA	NA	NA	NO ACTIVITY TAKING PLACE - HIGH ACTIVITY AREA FOR PERSONNEL.
0908	NA	NA	67.0	58.8	NO ACTIVITY TAKING PLACE,
1020	NA	NA	64.9	57.6	NO ACTIVITY TAKING PLACE.
1140	NA	NA	64.3	62.8	NO ACTIVITY TAKING PLACE.
1245	NA	NA	63.1	62.6	NO ACTIVITY TAKING PLACE.
1339	NA	NA	63.1	59.9	NO ACTIVITY TAKING PLACE.
1516	-3.0	11.11	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 12 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-09A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0742	-30	12.30	—	—	INITIATED SAMPLING AT QUARTERDECK / CONTROL IN BLDG 486. NO ACTIVITY TAKING PLACE.
0853	NA	NA	65.2	58.3	BRASS POLISHING BEING PERFORMED ~2' AND 8' FROM CANISTER. FLOORS WASHED/WAXED AT LEAST ONCE PER WEEK.
1008	NA	NA	73.9	56.6	SPRAY BOTTLE OF BLUE KNIGHT SPRAY ON TABLE ADJACENT TO CANISTER PRIMARY CONSTITUENTS: DIETHYLENE GLYCOL, METHYLETHER NON-IONIC SURFACTANT.
1110	NA	NA	67.2	48.5	NO ACTIVITY TAKING PLACE. NO ODORS PRESENT FROM EARLIER CLEANING OPERATIONS.
1229	NA	NA	64.9	56.5	NO ACTIVITIES TAKING PLACE.
1327	NA	NA	63.6	60.8	NO ACTIVITY TAKING PLACE.
1428	NA	NA	67.1	59.3	NO ACTIVITY TAKING PLACE.
1553	-2.0	11.29	NA	NA	CANISTER - SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH J. MARTIN Date: 12 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-10A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0721	-30	12.26	—	—	INITIATED SAMPLING ACTIVITY AT QUARTER DECK BLDG 482 (CONTROL ROOM). HIGH PERSONNEL ACTIVITY.
0820	NA	NA	NA	NA	FLOOR AREA ADJACENT TO CONTROL ROOM WAS MOPPED / WAXED. NO OTHER ACTIVITY TAKING PLACE.
0920	NA	NA	64.7	56.8	NO ACTIVITY TAKING PLACE. SMOKING AREA OUTSIDE MAIN DOOR TO QUARTER DECK ~ 60' FROM CANISTER.
1035	NA	NA	62.4	60.7	NO ACTIVITY TAKING PLACE. TEMPERATURE APPEARS WARMER THAN TEMP - SPECIFIED BY THERMOHYGROMETER.
1151	NA	NA	63.0	59.6	NO ACTIVITY TAKING PLACE.
1255	NA	NA	61.2	66.1	NO ACTIVITY TAKING PLACE.
1349	NA	NA	61.3	64.3	NO ACTIVITY TAKING PLACE
1525	0.4	12.44	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY E.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 12 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA - 11A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0744	-30	12.52	—	—	INITIATED SAMPLING ACTIVITY IN DORM 1 BLDG 486. CANISTER PLACED ON DESK ~ 3' HIGH. NO ACTIVITY TAKING PLACE.
0900	NA	NA	67.1	60.5	NO ACTIVITY TAKING PLACE
1014	NA	NA	68.2	52.1	NO ACTIVITY TAKING PLACE
1126	NA	NA	70.8	51.3	NO ACTIVITY TAKING PLACE
1235	NA	NA	67.6	54.2	NO ACTIVITY TAKING PLACE
1332	NA	NA	66.3	61.4	NO ACTIVITY TAKING PLACE
1440	NA	NA	70.2	52.2	NO ACTIVITY TAKING PLACE.
1554	-3.2	10.80	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH J. MARTIN Date: 12 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Brig) Canister Number: AA-12A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0742	-30	12.51	—	—	Initiated Sampling Activities - Brig, Vent B-8 (point source). wind out of North, NE.
0800	NA	NA	44.6	> 100	Canister secure - canister connected by tubing directly to opening in vent pipe.
1015	NA	NA	47.2	> 100	Canister secure.
1154	NA	NA	48.3	> 100	Canister secure.
1306	NA	NA	50.2	> 100	Canister secure.
1410	NA	NA	50.3	> 100	Canister Secure.
1542	-1.4	11.80	—	—	Discontinued sampling Activities. Final Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 JANUARY 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-01A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0725	-30	12.31	—	—	Initiated Air Sampling in School Gymnasium. No Activity. Canister placed at breathing zone height.
0836	NA	NA	67.5	47.9	No Activity in gym - lights are out - ventilation system operating. 0947 - Teacher dry mopping gym floor.
1102	NA	NA	70.3	48.5	Gym Activities have just begun, introducing more air movement. No detectable odors.
1243	NA	NA	70.5	51.5	Activities ongoing in gym, ventilation system operating - cooler air entering under door. No detectable odors.
1347	NA	NA	70.2	52.2	Activities continuing in gym, air entering from under door. No detectable odors.
1456	NA	NA	70.3	52.6	Activities continuing in gym, air entering from under door. No detectable odors
1525	-0.5	12.17	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-02A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0723	-30	12.72	—	—	Initiated Air Sampling in Annex Building, Room #32. No Activity in room - ventilation unit operating. Canister at breathing zone height.
0831	NA	NA	66.6	45.5	Teacher present in room. Ventilation unit not operating. Cool air entering through vent.
1056	NA	NA	71.3	49.0	Children / Teacher present in room. Ventilation unit not operating. Cool air entering through vent.
1238	NA	NA	70.9	55.5	Children / Teacher present in room. Ventilation unit not operating. Cool air entering through vent, No detectable odors.
1343	NA	NA	70.1	53.9	Children / Teacher present in room. Ventilation unit not operating. Cool air entering through vent. No detectable odors.
1448	NA	NA	70.2	54.1	Ventilation unit not operating. Cool air entering through vent. No detectable odors.
1523	0.8	12.71	—	—	Discontinued Sampling Activities. Final Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-03A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0717	-30	12.55	—	—	Initiated Sampling in Boiler Room. Air current not apparent. Canister placed at floor level. Doors closed.
0817	NA	NA	70.0	65.4	No apparent air movement in room. Slight "combustion" odor. No personnel in Rooms. Roof exhaust vent open. 0930 - Boiler Operating.
1036	NA	NA	65.5	62.0	Boiler Operating - Roof vent open. Odor still present. Doors closed.
1222	NA	NA	62.7	60.0	Boiler not operating - odor not as strong. Roof vent open. Doors closed.
1330	NA	NA	62.8	61.1	Boiler not operating - odor not as strong. Roof vent open. Doors closed.
1440	NA	NA	64.8	61.3	Boiler not operating - slight exhaust odor. Doors closed.
1518	0	12.45	—	—	Discontinued sampling activities, Final Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-04A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0721	-30	12.64	—	—	Initiated sampling in classroom #1/#2 Lavatory, Section B. Canister placed at breathing zone level. Door between lav. & classroom open
0827	NA	NA	69.3	44.0	Teacher present in classroom. No detectable air movement in lavatory hall. No detectable odors
1051	NA	NA	71.8	45.2	Children / Teacher in Room - low activity. No detectable air movement or odors.
1232	NA	NA	71.4	49.1	Children are exiting / entering the lavatory - high activity. No detectable air movement or odors.
1339	NA	NA	71.1	51.4	Door to classroom from lav. shut, then opened. No detectable air movement or odors.
1444	NA	NA	71.2	50.9	Door to classroom from lav. shut. No detectable air movement or odors.
1521	-0.9	12.07	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-05A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0719	-30	12.53	—	—	Initiated Sampling Activities in Classroom K5/K6, Section A. Canister placed at breathing zone level. Door between lavatory & classroom open.
0822	NA	NA	66.5	48.3	Teachers present in classroom. Ventilation operating in classroom
1044	NA	NA	70.9	46.0	Children present - Ventilation operating, no detectable odors.
1227	NA	NA	69.7	53.6	Children present, sitting near canister location. Ventilation operating. No detectable odors.
1336	NA	NA	69.8	52.7	Children / Teachers not in classroom. Ventilation operating. No detectable odors.
1442	NA	NA	69.8	52.8	Children / Teachers in room, Alot of Activity. no detectable odors.
1520	-7.2	9.44	—	—	Discontinued sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 JANUARY 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient) Canister Number: A-01A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0736	-30	12.20	—	—	Initiated Sampling Activities - upwind location on west side of property (Camp Allen). Winds from the North, NE.
0900	NA	NA	44.8	>100	No detectable odors, drizzle with overcast sky and light winds.
1019	NA	NA	47.8	>100	No detectable odors, drizzle, overcast sky, light winds.
1204	NA	NA	50.2	>100	Light winds, slight odor (from direction of interstate), no drizzle, sky overcast.
1314	NA	NA	51.6	>100	Light winds, slight "jet fuel" odor in the air, no drizzle, sky overcast.
1420	NA	NA	50.8	>100	Light winds, slight "jet-fuel / exhaust" odor in air, no drizzle, overcast sky.
1536	1.2	12.95	—	—	Discontinued Sampling Activities, Final Air Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 12 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-02A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0745	-30	12.11	48.6	84	Initiated Sampling Activities – downwind location near Brig. winds from the North, NE.
0910	NA	NA	46.0	> 100	Light winds, no rain, but a bit of moisture in the air. overcast sky.
1006	NA	NA	46.5	> 100	Light drizzle, light to moderate winds. No detectable odor.
1148	NA	NA	52.5	> 100	Light to moderate winds, overcast sky, not drizzling. No detectable odors.
1300	NA	NA	53.0	> 100	Light to moderate winds, overcast sky, beginning to drizzle. No detectable odors.
1407	NA	NA	52.8	> 100	Light to moderate winds, overcast sky, beginning to drizzle. No detectable odors.
1545	-2.6	11.37	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 12 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-03A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0728	-30	12.65	—	—	Initiated Sampling Activities - downwind location near elementary school. wind from the North, NE.
0813	NA	NA	43.8	> 100	Light to moderate winds. Faint "exhaust" odor in the air - drizzling.
1030	NA	NA	48.4	> 100	Moderate winds, light drizzle, overcast sky. No detectable odors.
1215	NA	NA	48.5	> 100	Light winds, drizzle, overcast sky. No detectable odors. 1249 - propane tank being filled directly upwind.
1323	NA	NA	49.4	> 100	Moderate winds, drizzle, overcast sky. No detectable odors.
1432	NA	NA	48.9	> 100	Light winds, no drizzle, overcast sky. No detectable odors.
1530	-3.2	11.09	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 12 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-04A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0732	-30	12.76	—	—	Initiated sampling activities - upwind location in park. Winds from the North, NE.
0800	NA	NA	44.6	> 100	Light winds, drizzle, overcast sky. Slight odor present. "Fuel/exhaust"
1024	NA	NA	48.5	> 100	Light winds, drizzle, overcast sky. Slight "fuel/exhaust" odor present.
1208	NA	NA	47.2	> 100	Light to moderate winds, no drizzle, overcast sky. Slight "exhaust" odor in the air.
1317	NA	NA	49.2	> 100	Moderate winds, drizzle, overcast sky. Slight "exhaust" odor in the air.
1426	NA	NA	48.6	> 100	Light winds, no drizzle, overcast sky. Slight "exhaust" odor in the air (Large plane just landed at the NAS).
1533	-1.6	11.78	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 12 January 1993

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-05A

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0740	-30	12.73	—	—	Initiated Sampling Activities - downwind location near salvage Yard. winds from the North, NE.
0800	NA	NA	44.6	> 100	Light rain / drizzle, overcast sky, light winds. Heavy Equipment operations in Salvage Yard (upwind) - Scrap being transferred.
1014	NA	NA	48.3	> 100	Light rain / drizzle, overcast sky, moderate winds, personnel still working in salvage Yard. No detectable odors
1158	NA	NA	49.8	> 100	Drizzle stopped, winds light, overcast sky. Scrap transfer still occurring. No detectable odors.
1308	NA	NA	50.7	> 100	Light to moderate winds. Salvage Yard Activity continues - overcast sky, drizzle. No detectable odors.
1515	NA	NA	50.2	> 100	Light winds, overcast sky, no drizzle. Salvage Operations have stopped then resumed. No detectable odors.
1540	-3.8	10.87	—	—	Discontinued sampling Activities. Final Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 12 JANUARY 1993

NA = Not Applicable

CANISTER SAMPLING (ROUND 2) DATA SHEETS

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-01B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0712	-30	12.51	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2A. FEMALE DORMITORY CANISTER PLACED ON BED RACK.
0859	NA	NA	NA	NA	ODOR FROM CLEANING SOLUTIONS APPARANT. AIR APPEARS STAGNANT - NO ACTIVITY TAKING PLACE.
0953	NA	NA	68.9	62.8	A SLIGHT ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT - NO ACTIVITY TAKING PLACE.
1058	NA	NA	70.4	59.8	SLIGHT ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT - NO ACTIVITY TAKING PLACE.
1213	NA	NA	70.4	58.7	SLIGHT ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT - NO ACTIVITY TAKING PLACE.
1310	NA	NA	70.4	55.8	ODOR FROM CLEANING SOLUTION SEEMS TO HAVE DISSIPATED - AIR APPEARS STAGNANT.
1407	NA	NA	70.3	58.0	ODOR FROM CLEANING SOLUTION SEEMS TO HAVE DISSIPATED - AIR APPEARS STAGNANT.
1516	-7.4	9.21	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 13 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-02B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0714	-30	12.74	—	—	INITIATED SAMPLING IN KITCHEN/MESS AREA UNDER STEAM POT (ON FLOOR). STEAMER IS OPERATING NEAR IN-COMING UTILITY.
0901	NA	NA	NA	NA	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
0957	NA	NA	69.1	58.4	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1100	NA	NA	70.0	58.7	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e.) FOOD PREPARATION).
1217	NA	NA	70.4	62.7	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1313	NA	NA	70.3	63.8	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1412	NA	NA	70.2	60.6	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE
1517	-5.9	9.81	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not A[illegible]ble

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-03B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0716	-30	12.50	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2B NEAR PIPE CHASE / UTILITY CLOSET ~ 18 PEOPLE OCCUPY DORM, NO ACTIVITY TAKING PLACE.
0904	NA	NA	NA	NA	FOUR SETS OF WINDOWS (5) OPEN. AIR APPEARS STAGNANT. NO ACTIVITY TAKING PLACE.
1002	NA	NA	73.8	43.5	FIVE SETS OF WINDOWS (5) OPEN. AIR APPEARS STAGNANT. CLEANING ACTIVITIES TAKING PLACE OUTSIDE OF DORMITORY.
1103	NA	NA	76.2	41.9	FIVE SETS OF WINDOWS (5) OPEN. AIR APPEARS STAGNANT CLEANING SUPPLIES IN DORMITORY (i.e., MOPPING/BUFFING EQUIPMENT).
1220	NA	NA	73.7	55.5	FIVE SETS OF WINDOWS (5) OPEN. ODOR FROM CLEANING SOLUTIONS LINGERING IN DORM. AIR APPEARS STAGNANT.
1317	NA	NA	72.6	50.7	NO ODORS - ROOM AIR APPEARS TO BE CIRCULATING FIVE SETS OF WINDOWS OPEN. NO ACTIVITY TAKING PLACE.
1416	NA	NA	74.1	50.0	NO ODORS - ROOM AIR APPEARS SLIGHTLY STAGNANT. NO ACTIVITY TAKING PLACE.
1520	-1.5	11.61	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-04B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0748	-30	12.49	—	—	INITIATED SAMPLING C-DECK (3RD FLOOR) ON TABLE ~ 4' HIGH ~ 5' FROM CLEANING GEAR ROOM DOOR.
0908	NA	NA	NA	NA	CLEANING ROOM GEAR DOOR IS OPEN. FLOOR APPEARS MOPPED. NO ACTIVITY TAKING PLACE.
1005	NA	NA	73.8	49.2	CLEANING GEAR ROOM DOOR IS OPEN CLEANING OPS TAKING PLACE IN ADJACENT ROOM (i.e., MOPPING/BUFFING FLOORS).
1105	NA	NA	75.0	45.9	CLEANING GEAR ROOM DOOR IS OPEN NO ACTIVITIES TAKING PLACE.
1223	NA	NA	70.4	52.7	CLEANING GEAR ROOM DOOR IS CLOSED. NO ACTIVITY TAKING PLACE. AIR FLOW APPEARS GOOD.
1321	NA	NA	75.3	51.7	CLEANING GEAR ROOM DOOR IS OPEN — SLIGHT ODOR FROM CLEANING SOLUTIONS. NO ACTIVITIES TAKING PLACE
1418	NA	NA	75.4	50.6	CLEANING GEAR ROOM DOOR IS CLOSED NO ACTIVITY TAKING PLACE.
1522	-4.1	10.56	NA	NA	CANISTER SHUTDOWN — SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not A[illegible]ble

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-05B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0722	-30	12.63	—	—	INITIATED SAMPLING ON TABLE IN LAUNDRY AREA - ALONG WEST WALL NEAR LOUVERED VENTS LAUNDRY OPERATIONS TAKING PLACE.
0914	NA	NA	NA	NA	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA FOR PERSONNEL.
1010	NA	NA	64.4	62.2	LAUNDRY ACTIVITIES TAKING PLACE - AUTOMATIC LINEN PRESS/FOLDER IN OPERATION ~ 12' FROM CANISTER.
1111	NA	NA	64.5	62.3	WASHERS/DRYERS OPERATING - NO OTHER ACTIVITY TAKING PLACE.
1229	NA	NA	66.3	62.6	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA AUTOMATIC LINEN/PRESS IN OPERATION.
1326	NA	NA	67.9	63.8	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA AUTOMATIC LINEN/PRESS IN OPERATION.
1425	NA	NA	67.0	67.5	LAUNDRY ACTIVITIES TAKING PLACE - HIGH ACTIVITY AREA AUTOMATIC LINEN/PRESS IN OPERATION.
1526	-4.7	10.24	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-06B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0724	-30	12.69	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK. NO STEAM IS BEING DISCHARGED FROM LINES.
0917	NA	NA	NA	NA	PUBLIC WORKS COMMISSION PERSONNEL REPAIRING COMPRESSOR UNIT IN BOILER ROOM.
1015	NA	NA	63.3	67.9	METAL/ELECTRICAL DEGREASER (CLEANING SOLVENT) USED ON COMPRESSOR UNITS IN BOILER ROOM. AS REPORTED BY PWC PERSONNEL.
1114	NA	NA	61.6	73.4	NO STEAM IS BEING DISCHARGED - COMPRESSOR UNITS OPERATING - PWC PERSONNEL NOT PRESENT.
1232	NA	NA	66.7	67.9	NO STEAM VENTING - COMPRESSOR UNITS OPERATING. NO OTHER ACTIVITY TAKING PLACE.
1330	NA	NA	67.4	64.2	NO STEAM VENTING - COMPRESSOR UNITS OPERATING. NO OTHER ACTIVITY TAKING PLACE.
1430	NA	NA	66.4	68.1	NO STEAM VENTING - COMPRESSOR UNITS OPERATING. NO OTHER ACTIVITY TAKING PLACE.
1528	-4.2	10.44	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY IT CORPORATION.

Performed by: KENNETH MARTIN

Date: 13 JAN 93

NA = Not A[illegible]ble

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-07B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0708	-30	12.67	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK. STEAM IS BEING DISCHARGED FROM GRATE.
0850	NA	NA	60.4	96.8	STEAM IS BEING DISCHARGED FROM GRATE NOTE: BOILER ROOM IS FULLY ENCLOSED (DOOR IS OPEN).
0944	NA	NA	62.7	100	STEAM IS BEING DISCHARGED FROM GRATE NOTE: BOILER ROOM IS FULLY ENCLOSED (DOOR IS OPEN).
1047	NA	NA	64.8	92.1	STEAM IS BEING DISCHARGED FROM GRATE NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN).
1206	NA	NA	66.0	100	STEAM IS BEING DISCHARGED PERIODICALLY. FROM GRATE. NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN).
1301	NA	NA	66.4	98.7	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN).
1400	NA	NA	67.1	100	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. NO OTHER ACTIVITY TAKING PLACE. (DOOR IS OPEN).
1511	-0.7	12.08	NA	NA	CANISTER SHUTDOWN SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-08B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0707	-30	12.81	—	—	INITIATED SAMPLING LOCATED NEAR CLASSROOM AND VENDING MACHINE IN CORRIDOR. NO ACTIVITY TAKING PLACE.
0807	NA	NA	70.4	51.4	NO ACTIVITY TAKING PLACE HIGH ACTIVITY AREA FOR PERSONNEL.
0936	NA	NA	66.5	57.6	NO ACTIVITY TAKING PLACE.
1044	NA	NA	65.9	60.7	NO ACTIVITY TAKING PLACE. CINNAMAN TYPE ODOR.
1141	NA	NA	66.3	59.3	NO ACTIVITY TAKING PLACE.
1258	NA	NA	65.9	65.3	NO ACTIVITY TAKING PLACE.
1355	NA	NA	65.9	68.8	NO ACTIVITY TAKING PLACE.
1509	-3.4	10.99	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 13 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMA ALLEN LANDFILL (BRIG) Canister Number: AA-093

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0728	-30	12.30	—	—	INITIATED SAMPLING AT QUARTER DECK / CONTROL ROOM IN BLDG 486. NO ACTIVITY TAKING PLACE.
0923	NA	NA	NA	NA	NO ACTIVITY TAKING PLACE.
1022	NA	NA	67.3	57.9	NO ACTIVITY TAKING PLACE.
1129	NA	NA	68.8	56.8	NO ACTIVITY TAKING PLACE.
1240	NA	NA	65.8	64.2	NO ACTIVITY TAKING PLACE. CIGARETTE SMOKING IN GENERAL AREA.
1337	NA	NA	66.3	64.3	NO ACTIVITY TAKING PLACE. CIGARETTE SMOKE LINGERING IN CONTROL ROOM.
1437	NA	NA	65.5	68.8	NO ACTIVITY TAKING PLACE.
1533	-2.4	11.17	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not Available

Baker
Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-10B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0709	-30	12.26	—	—	INITIATED SAMPLING ACTIVITY AT QUARTER DECK BLDG 482 (CONTROL ROOM). HIGH PERSONNEL ACTIVITY.
0854	NA	NA	63.7	39.7	NO ACTIVITIES TAKING PLACE.
0948	NA	NA	63.4	63.4	NO ACTIVITIES TAKING PLACE.
1051	NA	NA	63.1	58.8	NO ACTIVITIES TAKING PLACE.
1210	NA	NA	63.5	66.7	NO ACTIVITIES TAKING PLACE.
1305	NA	NA	64.8	65.1	NO ACTIVITIES TAKING PLACE.
1405	NA	NA	64.0	69.5	NO ACTIVITIES TAKING PLACE.
1515	0	12.32	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION

Performed by: KENNETH MARTIN Date: 13 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-11B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0731	-30	12.52	—	—	INITIATED SAMPLING ACTIVITY IN DORM 1 BLDG 486. CANISTER PLACED ON DESK ~3' HIGH. NO ACTIVITY TAKING PLACE.
0926	NA	NA	NA	NA	NO ACTIVITY TAKING PLACE.
1036	NA	NA	69.1	59.6	KNIGHTS SPRAY NINE MULTI-PURPOSE GERMICIDAL CLEANER - 3 - SPRAY BOTTLES ON DESK. USED FOR CLEANING/BUFFING FLOORS.
1134	NA	NA	69.0	57.4	NO ACTIVITY TAKING PLACE.
1246	NA	NA	68.3	65.5	CLEANING SPRAYS ON DESK NEXT TO CANISTER (N-ALKYL C14, 16, 12 DIMETHYL BENZYL ETHYLBENZYL AMMONIUM CHLORIDE.
1342	NA	NA	66.8	71.6	MUTI-PURPOSE GERMICIDAL CLEANER/USED SPONGE NEXT TO CANISTER ON DESK.
1440	NA	NA	66.0	69.9	CLEANING ACTIVITIES TAKING PLACE (i.e., WASHING LOCKERS).
1534	-3.3	10.80	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 13 JAN 93

NA = Not Available

Baker
Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Brig) Canister Number: AA-12B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0729	-30	12.51	—	—	Initiated sampling activities - Brig vent pipe B-8 (point source). Winds out of the south, SW. (Windshift from Round A).
0755	NA	NA	49.9	95.0	Canister secure - canister connected by tubing, directly to opening in vent pipe.
0922	NA	NA	53.1	>100	Canister secure.
1056	NA	NA	58.8	>100	Canister secure.
1218	NA	NA	62.1	>100	Canister secure.
1319	NA	NA	59.5	>100	Canister secure.
1530	-2.2	11.51	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-01B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0712	-30	12.31	—	—	Initiated Air Sampling in school gymnasium. Canister placed at breathing zone level.
0838	NA	NA	67.9	51.0	Ventilation operating, but no detectable air movement. No activity in room. No detectable odors.
1012	NA	NA	68.7	51.0	High activity in gym. No detectable air movement or odor.
1146	NA	NA	70.7	53.9	No activity in gym. No detectable air movement or odor.
1302	NA	NA	71.6	54.7	High activity in gym. No detectable air movement or odor.
1404	NA	NA	72.3	57.1	High activity in gym. No detectable air movement or odor.
1514	-0.7	11.91	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-02B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0710	-30	12.72	—	—	Initiated Air sampling in Annex Building, Room #32. Canister at breathing zone height.
0835	NA	NA	NA	NA	Ventilation not operating. Cold air entering through vent. Door to hallway open. No children in room. No detectable odors.
1007	NA	NA	70.0	54.4	Ventilation not operating, cool air still noticeable by vent. Children in room. Door to classroom closed.
1142	NA	NA	70.9	52.2	Ventilation not operating, cool air still noticeable by vent. Children not in room. Door to classroom closed.
1259	NA	NA	71.2	51.2	Ventilation not operating, cool air still noticeable by vent. Children not in room. Door to classroom closed.
1359	NA	NA	72.9	52.8	Ventilation not operating, cool air near vent. Children in room, door to classroom closed. No detectable odors.
1512	0	12.20	—	—	Discontinued Sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-03B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0705	-30	12.55	—	—	Initiated Sampling in Boiler Room. Canister placed at floor level.
0825	NA	NA	69.2	55.2	Fairly strong "combustion" odor. Boiler not operating. Roof exhaust vent open. No detectable air movement.
0952	NA	NA	67.6	58.9	Odor not as strong. Boiler not operating. Roof exhaust vent open. No detectable air movement (Note: Boiler near canister begin operating).
1127	NA	NA	72.4	47.4	Odor still present. Boiler near canister operating. No detectable air movement. Roof exhaust vent open.
1245	NA	NA	71.7	50.0	Odor still present. Boiler near canister operating. No detectable air movement. Roof exhaust vent open.
1347	NA	NA	72.5	53.0	Slight odor, Boiler just shut down. No detectable air movement. Roof exhaust vent open.
1505	-0.2	12.12	—	—	Discontinued sampling activities. Final canister vacuum determined by IT Corporation

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-04B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0708	-30	12.64	—	—	Initiated sampling in classroom #1/#2 lavatory, Section B. Canister placed at breathing zone level.
0832	NA	NA	NA	NA	Door between lavatory and classroom is open. no detectable odors or air movement.
1002	NA	NA	70.8	48.3	Door between lav. and classroom is closed. no detectable odors, air current coming from under door.
1137	NA	NA	74.0	47.1	Door between lav. and classroom is open. no detectable odors, air current coming from under door. Children not in room
1256	NA	NA	74.2	49.7	Door between lav and classroom is closed, air current coming from under door. No detectable odors. Children in room
1355	NA	NA	74.7	50.8	Door between lav. and classroom is closed, air current coming from under door. No detectable odors. Children in room.
1508	-0.9	11.83	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-05 B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0707	-30	12.53	—	—	Initiated Sampling Activities in classroom K5/K6, Section A. Canister placed at breathing zone level. Door between lav. & classroom open.
0830	NA	NA	69.0	48.6	Ventilation operating, no detectable odors. No children in room. Hallway door open.
0958	NA	NA	71.1	48.2	Hallway door closed. Ventilation operating, no detectable odors. Children in room.
1132	NA	NA	74.2	47.2	Hallway door closed. Ventilation operating, no detectable odors. Children in room.
1250	NA	NA	74.5	47.7	Hallway door closed. Ventilation operating, no detectable odors. Children not in room
1350	NA	NA	73.9	52.0	Hallway door closed. Ventilation operating, no detectable odors. Children in room.
1507	-7.2	9.19	—	—	Discontinued Sampling Activities. Final Canister vacuum determined by I.T. Corporation

Performed by: Barbara Cummings Date: 13 JANUARY 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient) Canister Number: A-01B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0722	-30	12.20	—	—	Initiated Sampling Activities. Downwind location on west side of Camp Allen property. Winds from the South (wind shift from Round A).
0804	NA	NA	49.8	96.0	Light winds, no detectable odors. overcast sky.
0935	NA	NA	51.0	> 100	Exhaust odor detectable - A fair amount of activity on roadway and at salvage yard. Moderate winds from south, SW.
1107	NA	NA	53.9	> 100	Light winds, overcast sky. No detectable odor. Activity in Salvage Yard.
1228	NA	NA	57.8	> 100	Light winds, overcast sky. No detectable odors. Activity in Salvage Yard.
1330	NA	NA	57.0	> 100	Light winds, overcast sky. No detectable odors. Activity in Salvage Yard.
1525	1.2	12.70	—	—	Discontinued sampling activities. Final air canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-02B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0731	-30	12.11	—	—	Initiated Sampling Activities - upwind location near Brig. winds from the South. (wind shift from round A).
0749	NA	NA	49.3	96.0	Light winds from the South, overcast sky, no detectable odor.
0918	NA	NA	51.4	>100	Light to moderate winds from the South. no detectable odors. overcast sky.
1050	NA	NA	59.8	>100	Light winds, overcast sky. Slightly detectable "organic" odor.
1212	NA	NA	62.0	>100	Light winds, overcast sky. Detectable "exhaust" odor (fairly strong).
1315	NA	NA	58.9	>100	Light to moderate winds, overcast sky. No detectable odors.
1534	-3.0	10.96	—	—	Discontinued Sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-03B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0716	-30	12.65	—	—	Initiated sampling activities - upwind location near elementary school. Winds from the South (wind shift from round A).
0820	NA	NA	54.0	> 100	Light winds, overcast sky, no detectable odors. Salvage yard, Area B, park, & roadway upwind.
0955	NA	NA	51.9	> 100	Moderate winds, overcast sky, no detectable odors.
1117	NA	NA	53.8	> 100	Moderate winds, overcast sky, no detectable odors.
1241	NA	NA	58.3	> 100	Moderate winds, overcast sky, no detectable odors.
1339	NA	NA	58.0	> 100	Moderate winds, overcast sky, no detectable odors.
1519	-3.5	10.73	—	—	Discontinued sampling activities. Final canister vacuum determined by E.T. Corporation.

Performed by: Barbara Cummings

Date: 13 January 1993

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-04B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0720	-30	12.76	—	—	Initiated Sampling Activities - downwind location in park winds from the south. (wind shift from Round A).
0815	NA	NA	49.4	95.5	Light winds from the south, overcast sky. "Diesel exhaust" type odor detectable (downwind from Salvage Yard).
0938	NA	NA	53.0	90.0	Moderate winds from the south, SW. Overcast sky. "Diesel exhaust" type odor still detectable.
1112	NA	NA	55.2	> 100	Light to moderate winds from the south, SW. Overcast sky. "Diesel exhaust" type odor still detectable.
1234	NA	NA	59.1	> 100	Light winds, overcast sky. No detectable odors
1333	NA	NA	58.2	> 100	Light to moderate winds, overcast sky. No detectable odors.
1522	-4.2	10.46	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 13 January 1993

NA = Not Available

Baker
Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient) Canister Number: A-05B

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0725	-30	12.73	—	—	Initiated Sampling Activities - upwind location near salvage yard. winds from the south (windshift from Round A).
0759	NA	NA	49.6	95.5	Light winds, overcast sky. No detectable odors.
0928	NA	NA	51.6	>100	Light winds, overcast sky. No detectable odors.
1100	NA	NA	55.7	>100	Light winds, overcast sky. No detectable odors.
1222	NA	NA	61.5	>100	Light winds, overcast sky. No detectable odors.
1324	NA	NA	58.5	>100	Light to moderate winds, overcast sky. No detectable odors.
1528	-4.2	10.46	—	—	Discontinued Sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 13 January 1993

NA = Not Available

CANISTER SAMPLING (ROUND 3) DATA SHEETS

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-01C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0721	-30	12.51	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2A. FEMALE DORMITORY. CANISTER PLACED ON BED RACK.
0821	NA	NA	68.9	47.4	CLEANING ACTIVITIES TAKING PLACE (MOPPING FLOORS) STRONG ODOR FROM CLEANING SOLUTION. AIR APPEARS STAGNANT.
0921	NA	NA	70.5	47.3	STRONG ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT.
1043	NA	NA	70.2	36.4	STRONG ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT.
1150	NA	NA	70.6	41.2	STRONG ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT.
1255	NA	NA	70.3	39.4	STRONG ODOR FROM CLEANING SOLUTIONS AIR APPEARS STAGNANT
1401	NA	NA	68.4	38.7	ODOR FROM CLEANING SOLUTIONS - AIR APPEARS STAGNANT - NOTE CANISTER WAS MOVED ~ 3.0' FROM ORIGINAL POSITION.
1521	-6.9	9.20	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER PRESSURE DETERMINED BY IT CORPORATION

Performed by: KENNETH MARTIN

Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG.) Canister Number: AA-02C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0723	-30	12.74	—	—	INITIATED SAMPLING IN KITCHEN/MESS AREA UNDER STEAM POT (ON FLOOR) STEAMER IS OPERATING NEAR IN-COMING UTILITY.
0824	NA	NA	67.1	36.6	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
0925	NA	NA	67.1	38.1	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
1045	NA	NA	68.7	34.9	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION.
1153	NA	NA	67.8	39.8	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE. (i.e., FOOD PREPARATION).
1300	NA	NA	67.9	30.6	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1404	NA	NA	67.7	32.6	STEAMER IS OPERATING - NORMAL KITCHEN ACTIVITIES TAKING PLACE (i.e., FOOD PREPARATION).
1523	-5.2	9.88	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-03 C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0730	-30	12.50	—	—	INITIATED SAMPLING ACTIVITY IN DORM 2B NEAR PIPE CHASE/UTILITY CLOSET ~18 PEOPLE OCCUPY DORM.
0827	NA	NA	74.1	31.5	NO ACTIVITY TAKING PLACE. AIR APPEARS STAGNANT.
0930	NA	NA	75.5	31.0	NO ACTIVITY TAKING PLACE. AIR APPEARS STAGNANT. FIVE SETS OF WINDOWS OPEN.
1052	NA	NA	73.8	23.2	NO ACTIVITY TAKING PLACE. AIR APPEARS STAGNANT. FIVE SETS OF WINDOWS OPEN.
1157	NA	NA	72.4	19.8	STRONG CLEANING SOLUTION ODOR - FLOORS BEING MOPPED - LAVATORY CLEANED. AIR APPEARS STAGNANT.
1303	NA	NA	72.0	22.8	ODOR FROM CLEANING SOLUTIONS - FLOOR CLEANING MATERIALS. CANISTER IS ~5' FROM LAVATORY AREA.
1408	NA	NA	71.1	26.0	SLIGHT ODOR FROM CLEANING SOLUTIONS NO ACTIVITY TAKING PLACE.
1530	-1.3	11.47	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY IT CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-0AC

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0732	-30	12.49	—	—	INITIATED SAMPLING C-DECK (3RD FLOOR) ON TABLE ~ 4' HIGH ~5' FROM CLEANING GEAR ROOM DOOR.
0831	NA	NA	74.8	32.2	CLEANING GEAR ROOM DOOR IS OPEN - CLEANING ACTIVITIES BEING PERFORMED.
0935	NA	NA	76.1	33.0	CLEANING GEAR ROOM DOOR IS OPEN - CLEANING ACTIVITIES BEING PERFORMED.
1056	NA	NA	75.4	19.6	CLEANING GEAR ROOM DOOR IS CLOSED NO ACTIVITIES BEING PERFORMED.
1201	NA	NA	74.6	19.7	CLEANING GEAR ROOM DOOR IS CLOSED NO ACTIVITY BEING PERFORMED.
1307	NA	NA	76.0	22.6	CLEANING GEAR ROOM DOOR IS OPEN BUFFING OPERATIONS TAKING PLACE.
1413	NA	NA	75.0	25.7	CLEANING GEAR ROOM DOOR IS CLOSED NO ACTIVITY TAKING PLACE.
1532	-3.6	10.55	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-05C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0736	-30	12.63	—	—	INITIATED SAMPLING ON TABLE IN LAUNDRY AREA - ALONG WEST WALL NEAR LOUVERED VENTS - LAUNDRY OPERATIONS TAKING PLACE
0836	NA	NA	60.9	40.2	LAUNDRY OPERATIONS TAKING PLACE. AUTOMATIC LINEN PRESS/FOLDER IN OPERATION. MODERATE BREEZE PASSING THROUGH LAUNDRY AREA NEAR CANISTER.
0941	NA	NA	62.8	38.8	LAUNDRY OPERATIONS TAKING PLACE. AUTOMATIC LINEN PRESS/FOLDER IN OPERATION. MODERATE BREEZE PASSING THROUGH LAUNDRY AREA NEAR CANISTER.
1101	NA	NA	63.1	32.0	NO ACTIVITY TAKING PLACE WASHERS/ DRYERS OPERATING.
1206	NA	NA	63.5	34.7	LAUNDRY OPERATIONS TAKING PLACE. NO OTHER ACTIVITY TAKING PLACE.
1314	NA	NA	65.0	NA	CANISTER WAS MOVED FILTER WAS ROTATED 180° FROM ORIGINAL POSITION. LINEN PRESS/ FOLDER IN OPERATION. A LOT OF PERSONNEL ACTIVITY.
1418	NA	NA	64.9	31.8	HIGH ACTIVITY AREA - PERSONNEL FINALIZING LAUNDRY OPERATIONS FOR THE DAY.
1536	-4.1	10.26	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-06C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0738	-30	12.69	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK. NO STEAM IS BEING DISCHARGED.
0841	NA	NA	59.3	40.3	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE RUNNING.
0946	NA	NA	62.1	38.5	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE OPERATING.
1107	NA	NA	61.4	28.0	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE OPERATING.
1210	NA	NA	63.5	21.6	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE OPERATING.
1321	NA	NA	70.1	25.4	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE OPERATING.
1422	NA	NA	64.4	30.7	NO STEAM IS BEING DISCHARGED. NO OTHER ACTIVITY TAKING PLACE. COMPRESSORS ARE OPERATING.
1538	-1.7	11.24	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Applicable

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-07C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0714	-30	12.67	—	—	INITIATED SAMPLING ACTIVITY ON GRATE ABOVE UTILITY NETWORK STEAM IS BEING DISCHARGED FROM GRATE (DOOR IS CLOSED).
0812	NA	NA	65.1	56.8	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. (DOOR IS CLOSED).
0908	NA	NA	61.4	77.1	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. (DOOR IS CLOSED)
1030	NA	NA	62.0	75.8	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. (DOOR IS CLOSED)
1138	NA	NA	64.7	46.7	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE. (DOOR IS CLOSED).
1244	NA	NA	64.3	47.7	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE (DOOR IS CLOSED)
1352	NA	NA	63.3	39.2	STEAM IS BEING DISCHARGED PERIODICALLY FROM GRATE (DOOR IS CLOSED).
1516	0.8	12.48	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-08C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0712	-30	12.81	—	—	INITIATED SAMPLING LOCATED NEAR CLASSROOMS AND VENDING MACHINE IN CORRIDOR, NO ACTIVITY TAKING PLACE.
0807	NA	NA	70.8	33.4	ROOMS BRANCHING OFF FROM CORRIDOR ARE BEING MOPPED, NO OTHER ACTIVITY TAKING PLACE.
0903	NA	NA	66.0	40.5	FLOOR IS BEING MOPPED IN ROOM ADJACENT TO CANISTER.
1019	NA	NA	71.3	34.0	BUFFING FLOOR ADJACENT TO CANISTER. NO OTHER ACTIVITY TAKING PLACE.
1134	NA	NA	67.4	49.2	NO ACTIVITY TAKING PLACE. HIGH ACTIVITY FROM PERSONNEL.
1239	NA	NA	65.5	42.6	NO ACTIVITY TAKING PLACE - SMALL AMOUNT OF PERSONNEL ACTIVITY TAKING PLACE.
1346	NA	NA	63.5	39.5	NO ACTIVITY TAKING PLACE.
1514	-3	10.93	NA	NA	CANISTER SHUTDOWN- SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I. T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-09C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0744	-30	12.30	—	—	INITIATED SAMPLING AT QUARTER DECK/ CONTROL IN BLDG 486 ~ 3' HIGH ON TABLE.
0847	NA	NA	61.2	95.4	NORMAL ACTIVITIES TAKING PLACE. MOPPING FLOOR IN ADJACENT CORRIDOR. TEMPERATURE APPEARS WARMER THAN SPECIFIED.
0953	NA	NA	66.9	35.5	SPRAYING/BUFFING FLOOR WITH BLUE KNIGHT SOLUTION.
1122	NA	NA	64.3	30.1	NO ACTIVITY TAKING PLACE.
1218	NA	NA	61.8	27.4	NO ACTIVITY TAKING PLACE. LINGERING CIGARETTE SMOKE IN ROOM.
1330	NA	NA	60.1	25.0	NO ACTIVITY TAKING PLACE.
1432	NA	NA	68.9	32.4	NO ACTIVITY TAKING PLACE. LINGERING CIGARETTE SMOKE IN ROOM.
1544	-1.8	11.20	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG)

Canister Number: AA-10C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0717	-30	12.26	—	—	INITIATED SAMPLING ACTIVITY AT QUARTER DECK BLDG 482 (CONTROL ROOM). HIGH PERSONNEL ACTIVITY.
0817	NA	NA	62.1	40.3	CLEANING ACTIVITIES TAKING PLACE — FLOOR SWEEPING/MOPPING - NORMAL CONTROL ROOM ACTIVITIES.
0915	NA	NA	60.4	39.2	NORMAL CONTROL ROOM ACTIVITIES TAKING PLACE. CLEANING SUPPLIES STORED IN ADJACENT CORRIDOR.
1035	NA	NA	61.6	39.1	NORMAL CONTROL ROOM ACTIVITIES TAKING PLACE.
1134	NA	NA	62.6	32.3	NORMAL CONTROL ROOM ACTIVITIES TAKING PLACE.
1252	NA	NA	64.7	31.2	NORMAL CONTROL ROOM ACTIVITIES TAKING PLACE.
1357	NA	NA	61.6	36.9	NORMAL CONTROL ROOM ACTIVITIES TAKING PLACE.
1518	0.4	12.27	NA	NA	CANISTER SHUTDOWN — SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN

Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: CAMP ALLEN LANDFILL (BRIG) Canister Number: AA-11C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0745	-30	12.52	—	—	INITIATED SAMPLING ACTIVITY IN DORM 1 BLDG 486. CANISTER PLACED ON DESK ~3' HIGH. NO ACTIVITY TAKING PLACE.
0852	NA	NA	NA	51.9	MOPPING / WAXING FLOOR ODOR FROM CLEANING SOLUTION.
1005	NA	NA	67.9	43.4	NO ACTIVITY TAKING PLACE AIR APPEARS TO BE CIRCULATING.
1124	NA	NA	65.3	38.3	NO ACTIVITY TAKING PLACE.
1230	NA	NA	67.5	30.7	NO ACTIVITY TAKING PLACE
1338	NA	NA	63.8	36.5	NO ACTIVITY TAKING PLACE
1448	NA	NA	67.6	37.7	NO ACTIVITY TAKING PLACE.
1545	-2.9	10.75	NA	NA	CANISTER SHUTDOWN - SAMPLE COLLECTED FINAL CANISTER VACUUM DETERMINED BY I.T. CORPORATION.

Performed by: KENNETH MARTIN Date: 14 JAN 93

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Brig)

Canister Number: AA-12C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0723	-30	12.51	—	—	Initiated Sampling Activities - Brig vent pipe B 8 (point source), winds out of the North (windshift from Round B).
0741	NA	NA	40.2	>100	Canister secure - canister connected by tubing, directly to opening in vent pipe.
0916	NA	NA	46.0	>100	Canister secure.
1040	NA	NA	45.4	>100	Canister secure.
1210	NA	NA	48.9	>100	Canister secure.
1324	NA	NA	50.8	>100	Canister secure.
1524	-1.0	11.79	—	—	Discontinued Sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 14 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-01C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0707	-30	12.31	—	—	Initiated Air Sampling in school gymnasium. Canister placed at breathing zone level.
0848	NA	NA	67.7	43.6	Ventilation operating. no detectable odors. no Activity in gym.
1003	NA	NA	69.0	39.8	Ventilation operating. no detectable odors. Activity in gym.
1134	NA	NA	70.1	44.7	Ventilation operating. no detectable odors. Activity in gym
1259	NA	NA	70.8	45.2	Ventilation operating. no detectable odors. Activity in gym.
1405	NA	NA	70.4	44.5	Ventilation operating. no detectable odors. Activity in gym.
1508	-0.3	12.08	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation

Performed by: Barbara Cummings Date: 14 JANUARY 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-02C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0705	-30	12.72	—	—	Initiated Air Sampling in Annex Building, Room #32. Canister at breathing zone level. (Ventilation operating)
0843	NA	NA	67.4	38.5	Ventilation not operating, door to classroom open. Children not in room. Cool Air coming through vent.
0959	NA	NA	69.9	43.0	Ventilation not operating, door to classroom open. Children in room. Cool Air entering through vent.
1126	NA	NA	69.0	44.6	Ventilation not operating, door to classroom closed. Children not in room. Cool Air entering through vent.
1254	NA	NA	69.9	39.5	Ventilation not operating, door to classroom closed. Children not in room. Cool Air entering through vent.
1402	NA	NA	70.2	42.5	Ventilation not operating, door to classroom open. Children in room. Cool Air entering through vent.
1506	1.2	12.70	—	—	Discontinued Sampling Activities. Final Canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 14 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen LandFill (Elementary School) Canister Number: AB-03C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0700	-30	12.55	—	—	Initiated Sampling in Boiler Room. Canister placed at floor level. (Boiler closest to canister operating). All doors closed.
0831	NA	NA	69.0	36.0	Boiler closest to canister operating. Roof exhaust vent open. Strong "Combustion" type odor in room.
0945	NA	NA	68.2	33.8	Boiler next to canister operating. Odor is not as strong. Roof exhaust vent open. Second Boiler just kicked on as this Boiler shutdown.
1106	NA	NA	68.0	31.9	Boiler next to canister operating. Odor not as strong. Roof exhaust vent open.
1242	NA	NA	68.4	34.1	Boiler next to canister operating. Odor is about the same intensity. Roof exhaust vent open.
1350	NA	NA	67.8	36.3	Neither Boiler is operating. Slight "Combustion" odor in room. Roof exhaust vent open. All doors in room shut.
1500	0	12.20	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 14 January 1993

NA = Not Available

Baker

Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School) Canister Number: AB-04C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0703	-30	12.64	—	—	Initiated sampling activities in classroom #1/#2 lavatory, Section B. Canister placed at breathing zone level.
0839	NA	NA	70.5	36.8	Door to classroom open. Children not in room. Air movement from under outside door, not as obvious today. No detectable odors.
0955	NA	NA	71.4	37.1	Door to classroom from lavatory closed. Children in room. Air movement still not as obvious. No detectable odors.
1122	NA	NA	70.6	39.1	Door to classroom from lavatory open. Children in room. Air movement not as detectable. No detectable odors.
1250	NA	NA	72.2	39.3	Door to classroom from lavatory closed. Children in room. Air movement not as detectable. No detectable odors.
1357	NA	NA	69.9	39.9	Door to classroom from lavatory is closed. Children not in room. Air movement by door is not as noticeable. No detectable odors.
1503	-0.7	11.91	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 14 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Elementary School)

Canister Number: AB-05C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0701	-30	12.53	—	—	Initiated Sampling Activities in classroom K5/K6, Section A. Canister placed at breathing zone level. Door between lav. & classroom left open.
0835	NA	NA	64.0	37.5	Classroom door open. Ventilation operating. No detectable odors, children not present.
0950	NA	NA	70.2	39.4	Classroom door closed. No detectable odors, children present.
1119	NA	NA	69.0	43.6	Classroom door closed. No detectable odors. Children present.
1246	NA	NA	70.6	42.2	Classroom door closed. No detectable odors, children present.
1353	NA	NA	69.7	47.2	Classroom door closed. No detectable odors children present.
1501	-6.9	9.32	—	—	Discontinued sampling activities. Final canister vacuum determined by IT Corporation

Performed by: Barbara Cummings

Date: 14 January 1993

NA = Not Available

Baker
Baker Environmental, Inc

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient) Canister Number: A-01C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0718	-30	12.20	—	—	Initiated sampling activities. upwind location on west side of Camp Allen property. Winds from the North (windshift from Road B).
0810	NA	NA	45.0	>100	Light winds, sunny. No detectable odors.
0926	NA	NA	47.8	>100	Light to moderate winds, partly sunny. No detectable odors. A lot of activity at the NAS.
1048	NA	NA	48.5	>100	Moderate winds, partly sunny. No detectable odors. A lot of activity at the NAS.
1222	NA	NA	54.3	>100	Winds now originating from the North, NE. partly sunny. Slight "exhaust/fuel" type odor. A lot of activity at the NAS
1333	NA	NA	51.9	>100	Very strong odor from direction of the NAS / Interstate Highway. A lot of activity at the NAS. Moderate winds, partly sunny.
1520	2.0	13.03	—	—	Discontinued sampling activities. Final air canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 14 January 1993

NA = Not Applicable

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-02C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0726	-30	12.11	—	—	Initiated sampling activities – downwind location near Brig. Winds from the North (Wind shift from Round B).
0736	NA	NA	41.5	>100	Light winds from the North, sunny. No detectable odors.
0909	NA	NA	52.8	>100	Light to moderate winds, sunny. No detectable odors. A lot of aviation activity today.
1034	NA	NA	52.0	>100	Moderate winds, partly sunny. No detectable odors. No visible activity upwind.
1200	NA	NA	53.8	>100	Moderate winds, partly sunny. Cigarette smoke odor detectable upwind. Cement truck pouring cement upwind.
1319	NA	NA	57.4	>100	Moderate winds, partly sunny. Aviation "exhaust" type odor detectable. No visible activity upwind.
1527	-2.2	11.29	—	—	Discontinued sampling activity. Final canister vacuum to be determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 14 JANUARY 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-03C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0711	-30	12.65	—	—	Initiated sampling activities - downwind location near elementary school. winds from the north (windshift from Round B).
0823	NA	NA	43.9	>100	Light to moderate winds, sunny. No detectable odors. Light amount of activity on road, Gasoline powered weed cutter in use upwind.
0937	NA	NA	44.5	>100	Moderate winds out of the North. A lot of activity ~~at~~ on roadway and at the NAS. No detectable odors. Partly sunny
1059	NA	NA	49.4	>100	Moderate winds out of the North. Partly Sunny. A lot of activity on roadway and at the NAS. No detectable odors.
1234	NA	NA	50.2	>100	Moderate winds out of the North. Partly Sunny. A lot of activity on roadway and at the NAS. No detectable odors.
1343	NA	NA	50.2	>100	Moderate winds out of the North. Partly Sunny. A lot of activity on roadway and at the NAS. No detectable odors.
1514	-2.8	11.02	—	—	Discontinued sampling activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 14 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient)

Canister Number: A-04C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0715	-30	12.76	—	—	Initiated Sampling Activities - upwind location in park. winds from the North. (windshift from Round B).
0816	NA	NA	45.4	>100	Light winds, sunny, slight odor of "exhaust" fumes in the air.
0931	NA	NA	46.2	>100	Light to moderate winds, partly sunny. Slight odor of "exhaust" fumes in the air. A lot of activity at airfield today.
1052	NA	NA	46.8	>100	Moderate to strong winds, partly sunny. Slight odor of "exhaust" fumes in the air. A lot of activity at airfield.
1227	NA	NA	49.7	>100	moderate to strong winds, partly sunny. Slight odor of "exhaust/fuel" - A lot of activity at the NAS / Interstate.
1338	NA	NA	50.2	>100	Moderate to strong winds, partly cloudy. Slight odor of "exhaust/fuel" - A lot of activity at the NAS / Interstate
1517	-1.3	11.66	—	—	Discontinued Sampling Activities. Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings

Date: 14 January 1993

NA = Not Available

Baker

Baker Environmental, Inc.

CANISTER SAMPLING DATA SHEET

Site: Camp Allen Landfill (Ambient) Canister Number: A-05C

Time	Canister Vacuum (in/Hg)	Flow (cc/min)	Temperature (°F)	Relative Humidity (%)	Comments
0721	-30	12.73	—	—	Initiated Sampling Activities - downwind location near salvage yard. winds from the North (windshift from Round B).
0747	NA	NA	42.0	>100	Light winds, sunny. Salvage yard operations occurring upwind. No detectable odors.
0920	NA	NA	46.5	>100	Light to moderate winds, sunny. Activity in salvage yard - transferring scrap piles, Alot of truck traffic. No detectable odors.
1044	NA	NA	48.2	>100	Moderate to strong winds, partly sunny. Activity in salvage yard - transferring scrap piles, Alot of truck traffic. No detectable odors.
1215	NA	NA	50.9	>100	Moderate to strong winds, partly sunny. Detected an "exhaust fuel" type odor and another undistinguishable odor, originating from the salvage yard.
1328	NA	NA	48.8	>100	Moderate to strong winds, partly sunny. Detecting same types of odors as mentioned in previous entry.
1522	-3.4	10.79	—	—	Discontinued Sampling Activities - Final canister vacuum determined by I.T. Corporation.

Performed by: Barbara Cummings Date: 14 January 1993

NA = Not Available

APPENDIX S

APPENDIX S
FINAL FLOW CALCULATIONS

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-01A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -7.1\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 757\ \ ]}{295\ K}$$

V = 4.5 Liters

$$F = \frac{4.5\ \ (1000\ \ ml/L)}{487\ \ min}$$

F= 9.30 ml/min

AA-02A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.6\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 757\ \ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ ml/L)}{488\ \ min}$$

F= 10.71 ml/min

AA-O3A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 757\ \ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ \ (1000\ \ ml/L)}{488\ \ min}$$

F= 11.81 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-04A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ ml/L)}{487\ \ min}$$

F= 10.69 ml/min

AA-05A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 10.52 ml/min

AA-06A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.6\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 5.6 Liters

$$F = \frac{5.6\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 11.45 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-07A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0\ \ \text{in Hg})(25.4\ mm/in\ Hg) +\ 757\ ]}{295\ K}$$

V = 5.9 Liters

$$F = \frac{5.9\ \ (1000\ \ ml/L)}{482\ \ min}$$

F = 12.33 ml/min

AA-08A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3\ \ \text{in Hg})(25.4\ mm/in\ Hg) +\ 757\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{481\ \ min}$$

F = 11.11 ml/min

AA-09A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2\ \ \text{in Hg})(25.4\ mm/in\ Hg) +\ 757\ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{491\ \ min}$$

F = 11.29 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-10A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 6.0 Liters

$$F = \frac{6.0\ \ (1000\ \ ml/L)}{484\ \ min}$$

F= 12.44 ml/min

AA-11A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 10.80 ml/min

AA-12A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ \ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.80 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-01A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.5\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ (1000\ \ ml/L)}{480\ \ min}$$

F= 12.17 ml/min

AB-02A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0.8\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 757\ ]}{295\ K}$$

V = 6.1 Liters

$$F = \frac{6.1\ (1000\ \ ml/L)}{480\ \ min}$$

F= 12.71 ml/min

AB-03A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 761\ ]}{295\ K}$$

V = 6.0 Liters

$$F = \frac{6.0\ (1000\ \ ml/L)}{480\ \ min}$$

F= 12.45 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-04A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.07 ml/min

AB-05A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -7.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 4.5 Liters

$$F = \frac{4.5\ \ (1000\ \ ml/L)}{481\ \ min}$$

F = 9.44 ml/min

A-01A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 1.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 6.2 Liters

$$F = \frac{6.2\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.95 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-02A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.6\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.37 ml/min

A-03A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{481\ \ min}$$

F= 11.09 ml/min

A-04A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.6\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.78 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-05A

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.8\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 761\ \ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 10.87 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-01B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -7.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 4.5 Liters

$$F = \frac{4.5\ \ (1000\ \ ml/L)}{487\ \ min}$$

F = 9.21 ml/min

AA-02B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -5.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 4.8 Liters

$$F = \frac{4.8\ \ (1000\ \ ml/L)}{488\ \ min}$$

F = 9.81 ml/min

AA-03B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.5\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{488\ \ min}$$

F = 11.61 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-04B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.1\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 5.1 Liters

$$F = \frac{5.1\ \ (1000\ \ ml/L)}{487\ \ min}$$

F = 10.56 ml/min

AA-05B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 5.0 Liters

$$F = \frac{5.0\ \ (1000\ \ ml/L)}{491\ \ min}$$

F = 10.24 ml/min

AA-06B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 760\ \ ]}{295\ K}$$

V = 5.1 Liters

$$F = \frac{5.1\ \ (1000\ \ ml/L)}{491\ \ min}$$

F = 10.44 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-07B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 760\ \ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ \ (1000\ \ ml/L)}{482\ \ min}$$

F= 12.08 ml/min

AA-08B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 760\ \ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{481\ \ min}$$

F= 10.99 ml/min

AA-09B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 760\ \ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 11.17 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-10B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0\ \ \text{in Hg})(25.4\ mm/in\ Hg) + \ 760\ ]}{295\ K}$$

V = 6.0 Liters

$$F = \frac{6.0\ \ (1000\ \ ml/L)}{484\ \ min}$$

F= 12.32 ml/min

AA-11B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.3\ \ \text{in Hg})(25.4\ mm/in\ Hg) + \ 760\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 10.80 ml/min

AA-12B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.2\ \ \text{in Hg})(25.4\ mm/in\ Hg) + \ 760\ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.51 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-01B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 11.91 ml/min

AB-02B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.9 Liters

$$F = \frac{5.9\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.20 ml/min

AB-03B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.12 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-04B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.83 ml/min

AB-05B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -7.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 4.4 Liters

$$F = \frac{4.4\ \ (1000\ \ ml/L)}{481\ \ min}$$

F= 9.19 ml/min

A-01B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 1.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 6.1 Liters

$$F = \frac{6.1\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 12.70 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-02B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3\ \ \text{in Hg})(25.4\ \text{mm/in Hg}) +\ 746\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ \text{ml/L})}{480\ \ \text{min}}$$

F= 10.96 ml/min

A-03B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.5\ \ \text{in Hg})(25.4\ \text{mm/in Hg}) +\ 746\ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ \text{ml/L})}{481\ \ \text{min}}$$

F= 10.73 ml/min

A-04B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.2\ \ \text{in Hg})(25.4\ \text{mm/in Hg}) +\ 746\ ]}{295\ K}$$

V = 5.0 Liters

$$F = \frac{5.0\ \ (1000\ \ \text{ml/L})}{480\ \ \text{min}}$$

F= 10.46 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-05B

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.0 Liters

$$F = \frac{5.0\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 10.46 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-01C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -6.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 4.5 Liters

$$F = \frac{4.5\ \ (1000\ \ ml/L)}{487\ \ min}$$

F = 9.20 ml/min

AA-02C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -5.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 4.8 Liters

$$F = \frac{4.8\ \ (1000\ \ ml/L)}{488\ \ min}$$

F = 9.88 ml/min

AA-O3C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.3\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.6 Liters

$$F = \frac{5.6\ \ (1000\ \ ml/L)}{488\ \ min}$$

F = 11.47 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-04C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.6\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.1 Liters

$$F = \frac{5.1\ \ (1000\ \ ml/L)}{487\ \ min}$$

F= 10.55 ml/min

AA-05C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -4.1\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.0 Liters

$$F = \frac{5.0\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 10.26 ml/min

AA-06C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 11.24 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-07C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0.8\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 6.0 Liters

$$F = \frac{6.0\ \ (1000\ \ ml/L)}{482\ \ min}$$

F = 12.48 ml/min

AA-08C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{481\ \ min}$$

F = 10.93 ml/min

AA-09C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.8\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.5 Liters

$$F = \frac{5.5\ \ (1000\ \ ml/L)}{491\ \ min}$$

F = 11.20 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AA-10C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.9 Liters

$$F = \frac{5.9\ \ (1000\ \ ml/L)}{484\ \ min}$$

F= 12.27 ml/min

AA-11C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{491\ \ min}$$

F= 10.75 ml/min

AA-12C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.79 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-01C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.3\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.8 Liters

$$F = \frac{5.8\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.08 ml/min

AB-02C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 1.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 6.1 Liters

$$F = \frac{6.1\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.70 ml/min

AB-03C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 0\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.9 Liters

$$F = \frac{5.9\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 12.20 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

AB-04C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -0.7\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ \ ]}{295\ K}$$

V = 5.7 Liters

$$F = \frac{5.7\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.91 ml/min

AB-05C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -6.9\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ \ ]}{295\ K}$$

V = 4.5 Liters

$$F = \frac{4.5\ \ (1000\ \ ml/L)}{481\ \ min}$$

F= 9.32 ml/min

A-01C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ 2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ \ ]}{295\ K}$$

V = 6.3 Liters

$$F = \frac{6.3\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 13.03 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-02C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.2\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.4 Liters

$$F = \frac{5.4\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.29 ml/min

A-03C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -2.8\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.3 Liters

$$F = \frac{5.3\ \ (1000\ \ ml/L)}{481\ \ min}$$

F= 11.02 ml/min

A-04C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -1.3\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ 746\ ]}{295\ K}$$

V = 5.6 Liters

$$F = \frac{5.6\ \ (1000\ \ ml/L)}{480\ \ min}$$

F= 11.66 ml/min

SAMPLE VOLUME AND FINAL FLOW CALCULATIONS

A-05C

$$V = \frac{[(6L)\ (.386\ K/mm)]\ [(\ -3.4\ \ in\ Hg)(25.4\ mm/in\ Hg) +\ \ 746\ \ ]}{295\ K}$$

V = 5.2 Liters

$$F = \frac{5.2\ \ (1000\ \ ml/L)}{480\ \ min}$$

F = 10.79 ml/min

APPENDIX T

APPENDIX T
QA/QC SAMPLE SUMMARIES

ROUND 2
FIELD BLANK SAMPLE SUMMARY
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED							CLP ANALYSIS RECEIVED							
SAMPLE ID	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	MISC (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	MISC (1)	COMMENTS
FBP-100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	FB POTABLE WATER (Hydrant)
FBD-100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	FB DI WATER

Notes:
(1) MISC. consists of Chloride, Sulfate, and Alkalinity. (Non-CLP Protocol)

ROUND 3
FIELD BLANK SAMPLE SUMMARY
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
FB-201	X	X	X	X	X		X	X	X	X	X		FB DI -WATER
FB-202	X	X	X	X	X		X	X	X	X	X		FB PORTABLE WATER (Hydrant)

ROUND 2
RINSATE SAMPLE SUMMARY
AREA A
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED							CLP ANALYSIS RECEIVED							
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	MISC. (2)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	MISC. (2)	COMMENTS
RSA-01	X	X	X					X	X	X					Rinsate of split spoon used during soil boring activity
RSA-02	X	X	X					X	X	X					Rinsate of split spoon used during soil boring activity
RSA-03	X	X	X	X	X			X	X	X	X	X			Rinsate of surface water & sediment sampling equipment
RSA-05	X	X	X	X	X		X	X	X	X	X	X		X	Rinsate of surface water sampling equipment
RSA-07						X							X		Rinsate of surface water sampling equipment for selected metals only
RSA-08	X	X	X	X	X		X	X	X	X	X	X		X	Rinsate of surface water sampling equipment
RSA-09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Rinsate of surface water & sediment sampling equipment
RSA-10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Rinsate of surface water & sediment sampling equipment

Notes:
(1) Rinsates were predetermined for each associated task. Rinsates 4 and 6 were not collected due to field modifcations.
(2) MISC. consists of Chloride, Sulfate, & Alkalinity. (Non-CLP Protocol)

ROUND 2
RINSATE SAMPLE SUMMARY
AREA B
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
RSB-01					X						X		Rinsate of split spoon used during soil boring activities
RSB-02	X	X	X		X		X	X	X		X		Rinsate of split spoon used during soil boring activities
RSB-06	X	X	X	X	X		X	X	X	X	X		Rinsate of surface water & sediment sampling equipment
RSB-07	X	X	X	X	X		X	X	X	X	X		Rinsate of surface water & sediment sampling equipment
RSB-09	X	X	X	X	X		X	X	X	X	X		Rinsate of surface water & sediment sampling equipment
RSB-10	X	X	X	X	X		X	X	X	X	X		Rinsate of surface water sampling equipment
RSB-201	X	X	X	X	X		X	X	X	X	X		Rinsate of teflon bailer used in groundwater sampling
RSB-202	X	X	X	X	X		X	X	X	X	X		Rinsate of teflon bailer used in groundwater sampling
RSB-203	X	X	X	X	X		X	X	X	X	X		Rinsate of teflon bailer used in groundwater sampling

Note:
(1) Rinsates were predetermined for each associated task. Rinsates 3,4,5, and 8 were not collected due to field modifications.
(2) MISC. consists of Chloride, Sulfate, and Alkalinity. (Non-CLP Protocol)

ROUND 3
RINSATE SAMPLE SUMMARY
AREA A and B
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
RSA-301	X						X						Rinsate of sediment sampling equipment at Area A.
RSA-302	X	X	X	X	X		X	X	X	X	X		Rinsate of purge pump during groundwater sampling activities
RSA-303	X	X	X	X	X		X	X	X	X	X		Rinsate of purge pump during groundwater sampling activities
RSB-313	X						X						Rinsate of purge pump during groundwater sampling activities

Notes:

(1) Please note dedicated sampling equipment was utilized during Round 3 soil sample collection activities. Therefore, no rinsate samples were required.

ROUND 2
TRIP BLANK SAMPLE SUMMARY
AREA A
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBA-01	X						X						Submitted with residential wells (RW-56,57 &59) & field blank(FBP-100) & (FBD-100) samples
TBA-02	X						X						Submitted with soil borings (SBA-1&2) & rinsate (RSA-01) samples
TBA-03	X						X						Submitted with soil borings (SBA-3,4,5,6,7,8,9) & rinsate (RSA-02) samples
TBA-04	X						X						Submitted with surface water (SWA-11&17) samples
TBA-05	X						X						Submitted with sediment (SDA-12&23), surface water (SWA-12) & rinsate (RSA-03) samples
TBA-09	X						X						Submitted with rinsate (RSA-05) & surface water (SWA-09) samples
TBA-10	X						X						Submitted with surface water (SWA-03) sample
TBA-11	X						X						Submitted with surface water (SWA-04) sample
TBA-12	X						X						Submitted with rinsates (RSA-07&08) & surfacewater (SWA-05) samples
TBA-13	X						X						Submitted with sediment (SDA-1,2,10,16), surface water (SWA-1&2) & rinsate (RSA-09) samples
TBA-14	X						X						Submitted with sediment (SDA-6,7,8,9,17,24), surface water (SWA-6,7,8), & rinsate (RSA-10) samples

Note: T[illegible]6, 07, and 08 were not submitted due to changes in cooler shipments containi[illegible]nples for volatile analysis.

ROUND 2
TRIP BLANK SAMPLE SUMMARY
AREA A
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBA-212	X						X						Submitted with groundwater (GWA-222&220) samples
TBA-213	X						X						Submitted with groundwater (GWB-215) sample
TBA-214	X						X						Submitted with groundwater (GWA-216&233) samples
TBA-215	X						X						Submitted with groundwater (GWA-215&218) samples
TBA-216	X						X						Submitted with groundwater (GWA-217) sample
TBA-217	X						X						Submitted with groundwater (GWA-202,203)&(GWB-222) samples
TBA-218	X						X						Submitted with groundwater (GWA-205,213,&220) samples
TBA-219	X						X						Submitted with groundwater (GWB-221,225&226) samples
TBA-220	X						X						Submitted with groundwater (GWA-225) samples
TBA-221	X						X						Submitted with groundwater (GWA-227) samples
TBA-222	X						X						Submitted with groundwater (GWA-214) samples
TBA-223	X						X						Submitted with groundwater (GWA-206,208,212) samples
TBA-224	X						X						Submitted with groundwater (GWA-204,209,234) samples
TBA-225	X						X						Submitted with groundwater (GWA-207) samples
TBA-226	X						X						Submitted with groundwater (GWA-223&224) samples
TBA-227	X						X						Submitted with groundwater (GWA-226&235) samples
TBA-228	X						X						Submitted with groundwater (GWA-210) & rinsate (RSA-203) samples
TBA-229	X						X						Submitted with groundwater (GWA-211,219,229,230,231,232,236) samples
TBA-230	X						X						Submitted with groundwater (GWA-230) samples

Note: Trip blank numbers (digits) changed to denote the corresponding media (i.e., two digit numbers correlate with soil, sediment, surface water and residential wells and three digit numbers correlate with groundwater samples

ROUND 2
TRIP BLANK SAMPLE SUMMARY
AREA B
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBB-01	X						X						Submitted with soil borings (SSB-6,7,8,9,10,11) & rinsate (RSB-01) samples
TBB-02	X						X						Submitted with soil borings (SSB-1,2,3,4,5) & rinsate (RSB-02) samples
TBB-09	X						X						Submitted with surface water (SWB-05) & sediment (SDB-5S&5D) samples
TBB-10	X						X						Submitted with rinsates (RSA-06,07) samples
TBB-10	X						X						Submitted with surface water (SWB-4) sample
TBB-11	X						X						Submitted with surface water (SWB-6) & rinsates (RSB-09) samples
TBB-12	X						X						Submitted with sediment (SDB-4S,4D,7S,8D) samples
TBB-14	X						X						Submitted with surface water (SWB-3) & rinsate (RSB-10) samples
TBB-15	X						X						Submitted with surface water (SWB-1&2) & sediment (SDB-1,2,3,6) samples

Note:
(1) TBB-03 through TBB-08 and TBB-13 were not submitted due to field modifcations. Two TBB-10 trip blanks were inadvertantly submitted.

ROUND 2
TRIP BLANK SAMPLE SUMMARY
AREA B
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBB-201	X						X						Submitted with groundwater (GWB-210) sample
TBB-202	X						X						Submitted with groundwater (GWB-207,208) samples
TBB-203	X						X						Submitted with groundwater (GWB-209,212,223) samples
TBB-204	X						X						Submitted with groundwater (GWB-211,219,224) samples
TBB-205	X						X						Submitted with groundwater (GWB-202,205) samples
TBB-206	X						X						Submitted with groundwater (GWB-203,204) & rinsate (RSB-201) samples
TBB-207	X						X						Submitted with groundwater (GWB-205,206) & rinsate (RSB-202) samples
TBB-208	X						X						Submitted with groundwater (GWB-218) samples
TBB-209	X						X						Submitted with groundwater (GWB-214,216,217) samples
TBB-210	X						X						Submitted with groundwater (GWA-221) samples
TBB-211	X						X						Submitted with groundwater (GWB-213) & (GWA-201) samples

Notes:

(1) Trip blank numbers (digits) changed to denote the corresponding media (i.e., two digit numbers correlate with soil, sediment and surface water and three digit numbers correlate with groundwater samples.

ROUND 3
TRIP BLANK SAMPLE SUMMARY
AREA A
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID (1)	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBA-301	X						X						Submitted with surface soil (SSA-1,2,3,4,&5) and sediment (SDA-26,27,28,29,30,&31) samples
TBA-303	X						X						Submitted with groundwater (GWA-301, 304, 305, 306, 307, 308, 309, 310, 311, 314, 316, 321, 322) & soil borings (SBA-10&11) and rinsate (RSA -301) samples
TBA-304	X						X						Submitted with gorundwater (GWA-302, 303, 312, 313, 315, 317, 319, 320) & rinsate (RSA-302) samples
TBA-305	X						X						Submitted with groundwater (GWA-317,318,320) & rinsate (RSA-303) samples

Note: (1) [illegible]A-302 not submitted due to field modifications.

ROUND 3
TRIP BLANK SAMPLE SUMMARY
AREA B
CAMP ALLEN LANDFILL, NORFOLK, VIRGINIA

	CLP ANALYSIS REQUESTED						CLP ANALYSIS RECEIVED						
SAMPLE ID	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	VOA	SVOA	PEST/PCB	MET. T.	MET. D.	SM	COMMENTS
TBB-301	X						X						Submitted with surface soil (SSB-5,6,7,8,9,10) & field blanks (FB-201,202)
TBB-302	X						X						Submitted with groundwater (GWB-301) through (GWB-315) & rinsate (RSB-313) samples

APPENDIX U

APPENDIX U
RESIDENTIAL WELL SAMPLING FIELD PARAMETER RESULTS

APPENDIX U

Field Parameters					
Sample Location Well	Date	Time	pH	Temp. (°C)	Cond.
RW-1	6/26/91	11:00	6.42	18.3	139
RW-2	6/26/91	11:20	5.76	19.0	202
RW-3	6/26/91	11:30	5.48	18.6	160
RW-4	6/26/91	11:41	5.38	17.5	130
RW-5	6/26/91	13:14	5.40	18/7	280
RW-6	6/26/91	14:02	5.72	19.1	235
RW-7	6/26/91	14:35	5.34	18.0	130
RW-8	6/26/91	16:04	6.35	17.9	200
RW-9	7/9/91	08:22	4.80	19.8	212
RW-10	7/9/91	08:42	5.03	19.9	152
RW-11	7/9/91	09:05	4.93	17.9	110
RW-12	7/9/91	09:34	5.96	19.8	125
RW-13	7/9/91	10:17	5.75	20.9	210
RW-14	7/9/91	10:41	5.94	23.3	175
RW-15	7/9/91	11:10	4.55	22.0	135
RW-16	7/9/91	12:35	5.77	23.2	200
RW-17	7/9/91	13:00	5.51	21.6	142
RW-18	7/9/91	13:35	5.67	23.1	175
RW-19	7/9/91	14:00	4.60	19.0	170
RW-20	7/10/91	14:25	5.87	19.2	190
RW-21	7/10/91	15:05	5.89	21.5	230
RW-22	7/10/91	08:07	5.46	21.3	170
RW-23	7/10/91	08:30	4.66	18.1	90
RW-24	7/10/91	08:52	5.05	19.1	145
RW-25	7/10/91	09:17	5.06	18.0	160
RW-26	7/10/91	09:48	5.24	19.5	145
RW-27	7/10/91	10:10	4.83	18.1	130
RW-28	7/10/91	10:30	5.03	18.9	160
RW-29	7/10/91	10:45	5.26	18.6	230
RW-30	7/10/91	11:20	5.00	19.1	151

Source: CH2M Hill, 1991.

APPENDIX U

Field Parameters					
Sample Location Well	Date	Time	pH	Temp. (°C)	Cond.
RW-31	7/10/91	11:37	5.22	18.0	149
RW-32	7/10/91	13:50	5.37	21.4	180
RW-33	7/10/91	15:00	5.97	19.9	115
RW-34	7/30/91	08:15	7.00	17.8	182
RW-35	7/30/91	09:45	5.02	23.6	192
RW-36	7/30/91	10:10	4.92	19.5	250
RW-37	7/30/91	11:10	5.69	18.8	145
RW-38	7/30/91	11:35	6.84	19.0	458
RW-39	7/30/91	13:15	5.50	19.2	280
RW-40	7/30/91	13:47	6.08	21.0	183
RW-41	7/30/91	14:25	5.83	17.5	213
RW-42	7/30/91	14:45	5.55	18.6	225
RW-43	7/30/91	15:45	5.66	18.7	80
RW-44	7/30/91	17:18	5.37	17.9	188
RW-45	7/30/91	17:45	5.45	18.0	170
RW-46	7/31/91	08:13	5.35	19.7	210
RW-47	7/31/91	08:42	5.50	18.2	210
RW-48	7/31/91	09:28	4.71	20.3	220
RW-49	7/31/91	11:19	6.16	19.2	195
RW-50	9/10/91	09:10	5.53	19.7	198
RW-51	9/10/91	12:15	6.24	24.5	280
RW-52	9/10/91	13:05	5.59	21.9	175
RW-53	9/10/91	16:10	5.71	22.1	100
RW-54	9/10/91	17:20	5.24	22.7	180
RW-55	9/10/91	18:45	4.31	23.9	260
RW-56	5/5/92	09:21	6.69	19.0	190
RW-57	5/5/92	10:25	6.69	18.5	260
RW-58	5/5/92	Not sampled due to faulty pump	--	--	--
RW-59	5/5/92	09:21	6.69	19.0	190

Source: CH2M Hill, 1991.

APPENDIX V

APPENDIX V
FIELD VERIFICATION GROUNDWATER SAMPLE LABORATORY REPORT

ENVIRONMENTAL TESTING SERVICES, INC.
P.O. Box 12715 • 888 Norfolk Square • Norfolk, Virginia 23502 • (804) 461-ETSI (3874) • Fax (804) 461-0379

ANALYTICAL SERVICES REPORT SHEET

Customer:
Mr. Tom Artman
Baker Environmental, Inc.
AOP Bldg. 3
428 Rouser Road
Coraopolis, PA 15108

Sample Description:
15 liquid samples delivered from May 11 to June 17, 1992 designated as Job #19084-SRN.

RESULTS

I. **Purgeable Halocarbons**: EPA Method 601.

Sample ID	Purgeables in ug/l
GWA-103	See Appendix A
GWA-104	See Appendix A
GWA-105	See Appendix A
GWA-106	See Appendix A
GWA-107	See Appendix A
GWA-108	See Appendix A
GWA-109	See Appendix A
GWA-110	See Appendix A
GWA-108	See Appendix A
GWA-109	See Appendix A
GWA-110	See Appendix A
GWA-111	See Appendix A
GWA-112	See Appendix A
GWA-113	See Appendix A

II. **Volatile Organic Compounds**: EPA Method 624.

Sample ID	VOAs in ug/l
GWA-101	See Appendix B
GWA-102	See Appendix B

III. **Toxicity Characteristic Leaching Process (TCLP)**: EPA SW-846 Method 1311.

Sample ID	TCLP Compounds in mg/l
A-MW8B	See Appendix C

Anne S. Burnett
Anne S. Burnett
Quality Control Officer

The information presented in the report represents the laboratory analyses performed on the samples provided to Environmental Testing Services, Inc. in accordance with the test methods requested and described above. Environmental Testing Services, Inc. is not responsible for any use of this information by its clients and shall not reveal these results to any person or entity without written authorization from its client. Any liability on the part of Environmental Testing Services, Inc. shall not exceed the sum paid by the client to Environmental Testing Services, Inc for the work performed.

APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-103

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
Anne S. Burnett
Quality Control Officer

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-104

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	3	1

Anne S. Burnett
Quality Control Officer

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-105

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	5	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
Anne S. Burnett
Quality Control Officer

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-106

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-107

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-108

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
Anne S. Burnett
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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-109

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

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Anne S. Burnett
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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-110

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	61	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	30	1

Anne S. Burnett
Quality Control Officer

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-111

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	10	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	6	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	29	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
Quality Control Officer

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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-112

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	<1	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	<1	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	<1	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
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APPENDIX A

E.P.A. METHOD 601
COMPOUND LIST - PURGEABLE HALOCARBONS

Sample ID: GWA-113

	Concentration in ug/l	Detection Limit in ug/l
Bromodichloromethane	<1	1
Bromoform	<1	1
Bromomethane	<1	1
Carbon Tetrachloride	<1	1
Chlorobenzene	<1	1
Chloroethane	<1	1
2-Chloroethylvinyl ether	<1	1
Chloroform	<1	1
Chloromethane	11	1
Dibromochlormethane	<1	1
1,2-Dichlorobenzene	<1	1
1,3-Dichlorobenzene	<1	1
1,4-Dichlorobenzene	<1	1
Dichlorodifluoromethane	<1	1
1,1-Dichloroethane	<1	1
1,2-Dichloroethane	5	1
1,1-Dichloroethene	<1	1
trans-1,2-Dichloroethene	<1	1
1,2-Dichloropropane	<1	1
cis-1,3-Dichloropropene	<1	1
trans-1,3-Dichloropropene	<1	1
Methylene Chloride	<1	1
1,1,2,2-Tetrachloroethane	<1	1
Tetrachloroethene	<1	1
1,1,1-Trichlorothane	<1	1
1,1,2-Trichloroethane	<1	1
Trichloroethane	25	1
Trichlorofluoromethane	<1	1
Vinyl chloride	<1	1

Anne S. Burnett
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APPENDIX B

E.P.A. METHOD 624 GC/MS
COMPOUND LIST - VOLATILE ORGANICS

Sample ID: GWA-101

	Concentration in ug/l	Detection Limit in ug/l
Benzene	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<20.0	20.0
Bromomethane	<1.0	1.0
Carbon Tetrachloride	<3.0	3.0
Chloroethane	<1.0	1.0
2-Chloroethylvinyl ether	<19.0	19.0
Chlorobenzene	<1.0	1.0
Chloroform	<2.0	2.0
Chloromethane (Methyl Chloride)	<1.0	1.0
Dichlorobromomethane	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
1,1-Dichloroethane	<5.0	5.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethylene	<3.0	3.0
trans-1,2-Dichloroethylene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropylene	<1.0	1.0
trans-1,3-Dichloropropylene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Methylene chloride	<3.0	3.0
1,1,2,2-Tetrachloroethane	<7.0	7.0
Tetrachloroethene	<1.0	1.0
Toluene	4.3	1.0
1,1,1-Trichloroethane	<1.0	1.0
1,1,2-Trichloroethane	<1.0	1.0
Trichloroethylene	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
Vinyl chloride	<10.0	10.0

Anne S. Burnett
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APPENDIX B

E.P.A. METHOD 624 GC/MS
COMPOUND LIST - VOLATILE ORGANICS

Sample ID: GWA-102

	Concentration in ug/l	Detection Limit in ug/l
Benzene	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<20.0	20.0
Bromomethane	<1.0	1.0
Carbon Tetrachloride	<3.0	3.0
Chloroethane	<1.0	1.0
2-Chloroethylvinyl ether	<19.0	19.0
Chlorobenzene	<1.0	1.0
Chloroform	<2.0	2.0
Chloromethane (Methyl Chloride)	<1.0	1.0
Dichlorobromomethane	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
1,1-Dichloroethane	<5.0	5.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethylene	<3.0	3.0
trans-1,2-Dichloroethylene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropylene	<1.0	1.0
trans-1,3-Dichloropropylene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Methylene chloride	131.0	3.0
1,1,2,2-Tetrachloroethane	<7.0	7.0
Tetrachloroethene	<1.0	1.0
Toluene	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
1,1,2-Trichloroethane	<1.0	1.0
Trichloroethylene	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
Vinyl chloride	<10.0	10.0

Anne S. Burnett
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APPENDIX C

TOXICITY CHARACTERISTICS LEACHING PROCESS (TCLP) CONSTITUENT AND REGULATORY LEVELS

Toxicity Characteristic Leaching Process (TCLP): EPA Manual SW-846 Method 1311.

Sample ID: A-MW8B

Compound	Concentration (mg/l)	Regulatory Level (mg/l)
Arsenic	<0.05	5.0
Barium	<0.25	100.0
Benzene	<0.009	0.5
Cadmium	<0.01	1.0
Carbon tetrachloride	<0.005	0.5
Chlordane	<0.008	0.03
Chlorobenzene	<0.005	100.0
Chloroform	<0.005	6.0
Chromium	<0.05	5.0
o-Cresol	<0.02	200.0
m-Cresol	<0.04	200.0
p-Cresol	<0.04	200.0
Cresol	<0.005	200.0
2,4-D	<0.010	10.0
1,4-Dichlorobenzene	<0.005	7.5
1,2-Dichloroethane	<0.005	0.5
1,1-Dichloroethylene	<0.005	0.7
2,4-Dinitrotoluene	<0.008	0.13
Endrin	<0.005	0.02
Heptachlor (and its hydroxide)	<0.004	0.008
Hexachlorobenzene	<0.010	0.13
Hexachloro-1,3-butadiene	<0.010	0.5
Hexachloroethane	<0.010	3.0
Lead	<0.01	5.0
Lindane	<0.002	0.4
Mercury	<0.002	0.2
Methoxychlor	<0.010	10.0
Methyl ethyl ketone	<0.005	200.0
Nitrobenzene	<0.010	2.0
Pentachlorophenol	<0.020	100.0
Pyridine	<0.010	5.0
Selenium	<0.05	1.0
Silver	<0.01	5.0
Tetrachloroethylene	<0.005	0.7
Toxaphene	<0.010	0.5
Trichloroethylene	<0.005	0.5
2,4,5-Trichlorophenol	<0.010	400.0
2,4,6-Trichlorophenol	<0.010	2.0
2,4,5-TP (Silvex)	<0.005	1.0
Vinyl chloride	0.028	0.2

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APPENDIX W

APPENDIX W
GEOPROBE SURVEY REPORTS

BURLINGTON
ENVIRONMENTAL

GROUNDWATER SURVEY
CAMP ALLEN
NORFOLK, VIRGINIA

June 1992

Prepared for:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

Project 535030

BURLINGTON ENVIRONMENTAL, INC.
4091 Venture Place
Groveport, Ohio 43125

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GROUNDWATER SURVEY
CAMP ALLEN
NORFOLK, VIRGINIA

1. INTRODUCTION

Baker Environmental, Inc. (Baker) requested that Burlington Environmental Inc., (Burlington) perform a second groundwater survey at the site located in Norfolk, Virginia.

The purpose of this survey was to evaluate the potential presence, and estimate the extent of impact, of volatile organic compounds (VOCs) at the above mentioned facility. This survey was performed by obtaining and analyzing groundwater samples on site.

Groundwater sampling was performed on June 3, 1992.

2 SUMMARY

Groundwater samples from 19 probe hole locations were collected and analyzed. Two duplicate groundwater samples and six sample blanks were also analyzed. In addition, one sediment sample and one surface water sample, which were collected by the field geologist, were analyzed. Samples were analyzed for the following chemicals:

- benzene;
- cis-1,2-dichloroethylene;
- trans-1,2-dichloroethylene; and
- trichloroethylene.

The analytical results are summarized in Table 1.

Groundwater samples were collected on site at locations suspected by Baker to be impacted with VOCs. Sampling locations were selected by Baker based on previous on-site data.

3 GROUNDWATER SAMPLING AND ANALYSIS

Twenty groundwater samples and two duplicate groundwater samples were collected from 19 locations using the RECON^{SM} System equipment. Samples were collected from a depth of 8 to 18 feet. Analytical results for the groundwater samples are presented in Table 1.

A hydraulic probe unit was used to drive and withdraw the groundwater sampling probes. A hydraulic hammer was used where necessary to assist in driving probes through unusually hard soil. The probes consisted of three-foot lengths of 0.75-inch-diameter threaded steel pipes with detachable drive points.

After the probe was inserted into the groundwater, the probe was withdrawn approximately one foot to create an annular space from which to collect a representative sample. A check valve attached to a length of polyethylene tubing was inserted through the probe into the water table. The sample was collected in the tubing, the tubing was pulled up, and the water in the tubing drained into a 40-milliliter (mL) glass vial sealed with a Teflon-lined septum screw cap. The sample was given to the GC technician for on-site analysis.

A Hewlett-Packard Model 5890A Series II gas chromatograph (GC) was used for the analysis of groundwater samples. Compound separation and detection were performed using a 30-meter wide-bore DB-624 volatile organic column and a photo-ionization detector (PID). Appendix A contains the GC field work sheets.

The groundwater samples were analyzed by modified U.S. Environmental Protection Agency (USEPA) SW-846 Methods 8010/8020. Modifications include use of a PID, a static headspace analysis, single-point calibration, and limited quality control measures.

Each sample vial was shaken for one minute and heated at 70^{0} C for 10 minutes to equilibrate the volatile components between the liquid and the air in the vial. An aliquot of up to 500 microliters of the headspace was collected by inserting a syringe through the septum of the vial and pulling the headspace sample into the syringe. The sample was then injected directly into the GC using a gas-tight syringe. The analysis was performed isothermally at an oven temperature of 50^{0} C and a total analysis time of 6 minutes.

Concentrations were measured based on an external standard calibration. Known concentrations of benzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and trichloroethylene were injected as a calibration gas mixture into the GC. Compound peak area versus standard concentration was used to calculate sample concentrations.

Compound identification was based on comparison of target compound retention times with sample unknowns. The cis & trans-1,2-dichloroethylene were reported as a total dichloroethylene concentration.

Analytical results for the groundwater sample analyzed by this technique will not necessarily be the same as those obtained by submitting the same groundwater sample for laboratory analysis. Different extraction techniques are used in each case and, although method

sensitivities and accuracies are comparable, different results are possible.

The detection limit is the lowest concentration of a compound that can be practicably measured relative to the calibration standard. Detection limits are a function of the injection volume as well as detector sensitivity. The detection limit is calculated from the current response factor, the sample size, and the estimated peak area that would have been detected under the given conditions. For this survey, the detection limit for each of the target compounds was 1 microgram per liter (ug/L).

4 QUALITY CONTROL

Quality control is an essential part of an analytical test methodology. Quality control procedures increase the confidence in the analytical results and are used to evaluate the reproducibility of the data.

The GC was calibrated using a known concentration of each of the target compounds of interest at the beginning of each day before analysis of any samples. The USEPA recommends instrument calibration be performed at least once every 12 hours. The calibration helps to evaluate the operating conditions of the GC.

A chromatographic system blank is analyzed every 10 samples as a means of indication that sample carryover has not occurred. If sample carryover has occurred, the concentration detected in the system blank can be subtracted from any of the subsequent samples containing that compound. A probe rod blank is analyzed prior to sample collection to ensure that rods are free of contamination.

A duplicate sample, which is a second volume of groundwater collected from the same sample location, is analyzed once every 20 samples, or at least once daily for each survey. Duplicates are used to evaluate the reproducibility of the analytical data.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

Sample I.D.	Probe Hole Number	Depth (Feet)	Concentration (ug/L) Total DCE	Benzene	TCE	Comments
BLANK-16	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-17	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-18	-	-	ND(1)	ND(1)	ND(1)	QC-Probe Rod Blank
GW-36	PH-36	18.0	<1	ND(1)	ND(1)	Groundwater
GW-37	PH-37A	18.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-38	PH-37B	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-39	PH-38	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-40	PH-39	10.5	ND(1)	ND(1)	ND(1)	Groundwater
GW-41	PH-40	11.5	ND(1)	ND(1)	ND(1)	Groundwater
GW-42	PH-41	12.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-43	PH-42	11.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-44	PH-43	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-44D	PH-43D	9.0	ND(1)	ND(1)	ND(1)	QC-Duplicate

ND	Not detected at the detection limit in parentheses
QC	Quality Control
ug/L	Micrograms per liter
-	Not Applicable
Total DCE	Total cis & trans-1,2-dichloroethylene
TCE	trichloroethylene

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

Sample I.D.	Probe Hole Number	Depth (Feet)	Concentration (ug/L) Total DCE	Benzene	TCE	Comments
BLANK-19	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
GW-45	PH-44	9.0	ND(1)	ND(1)	ND(1)	Groundwater
SL-46	SDA-100	-	ND(1)	ND(1)	ND(1)	Sediment
GW-47	SWA-100	-	ND(1)	ND(1)	ND(1)	Surface Water
GW-48	PH-45	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-49	PH-46	9.0	22	ND(1)	36	Groundwater
GW-50	PH-47	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-51	PH-48	9.0	ND(1)	ND(1)	ND(1)	Groundwater
BLANK-20	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
GW-52	PH-49	11.0	36	ND(1)	79	Groundwater
GW-53	PH-50	9.0	58	ND(1)	6	Groundwater
GW-54	PH-51	8.0	158	2	22	Groundwater
GW-55	PH-52	11.0	15	ND(1)	3	Groundwater
GW-56	PH-53	9.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-57	PH-54	10.0	1	ND(1)	ND(1)	Groundwater
GW-57D	PH-54D	10.0	2	ND(1)	ND(1)	QC-Duplicate
BLANK-21	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank

Appendix A

Gas Chromatograph
Field Work Sheets

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 6-3-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator N. Crane GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 — Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 — SE-54 / 15 meter 0.53 ___
Injector Temp. (C) 200 Final Temp. 50°

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
BLANK-16	–	–	10:24	500	1.0	–	QC-SYSTEM BLANK
STD-0603	–	–	7:43	500	1.0	–	CALIB STD.
BLANK-17	–	–	7:56	500	1.0	–	QC-SYSTEM BLANK
BLANK-18	–	–	8:18	500	1.0	–	QC-ROD BLANK
GW-36	PH-36	18'	9:02	500	1.0	–	GROUNDWATER
GW-37	PH-37A	18'	9:35	500	1.0	–	GROUNDWATER
GW-38	PH-37B	9'	9:54	500	1.0	–	GROUNDWATER
GW-39	PH-38	9'	10:11	500	1.0	–	GROUNDWATER
GW-40	PH-39	10.5'	10:59	500	1.0	–	GROUNDWATER
GW-41	PH-40	11.5'	11:27	500	1.0	–	GROUNDWATER
GW42	PH-41	12'	12:06	500	1.0	–	GROUNDWATER
GW-43	PH-42	11'	12:22	500	1.0	–	GROUNDWATER
GW-44	PH-43	9'	13:06	500	1.0	–	GROUNDWATER
GW-44D	PH-43D	9'	13:15	500	1.0	–	QC-DUPLICATE
BLANK-19	–	–	13:39	500	1.0	–	QC-SYSTEM BLANK
GW-45	PH-44	9'	14:06	500	1.0	–	GROUNDWATER

D = duplicate analysis
QC = quality control

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 6-3-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator N. Crano GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
SL-46	SDA-100	–	14:19	500	1.0	–	SEDIMENT
GW-47	SWA-100	–	14:34	500	1.0	–	SURFACE WATER
GW-48	PH-45	9'	14:46	500	1.0	–	GROUNDWATER
GW-49	PH-46	9'	14:58	500	1.0	–	GROUNDWATER
GW-50	PH-47	9'	15:08	500	1.0	–	GROUNDWATER
GW-51	PH-48	9'	15:20	500	1.0	–	GROUNDWATER
BLANK-20	–	–	15:53	500	1.0	–	QC-SYSTEM BLANK
GW-52	PH-49	11'	16:18	500	1.0	–	GROUNDWATER
GW-53	PH-50	9'	16:31	500	1.0	–	GROUNDWATER
GW-54	PH-51	8'	16:55	500	1.0	–	GROUNDWATER
GW-55	PH-52	11'	17:10	500	1.0	–	GROUNDWATER
GW-56	PH-53	9'	17:35	500	1.0	–	GROUNDWATER
GW-57	PH-54	10'	17:48	500	1.0	–	GROUNDWATER
GW-57D	PH-54D	10'	18:06	500	1.0	–	GROUNDWATER
BLANK-21	–	–	18:14	500	1.0	–	QC-SYSTEM BLANK
RT-03	–	–	18:21	500	1.0	–	QC-RT CHECK

D = duplicate analysis
QC = quality control

Appendix B

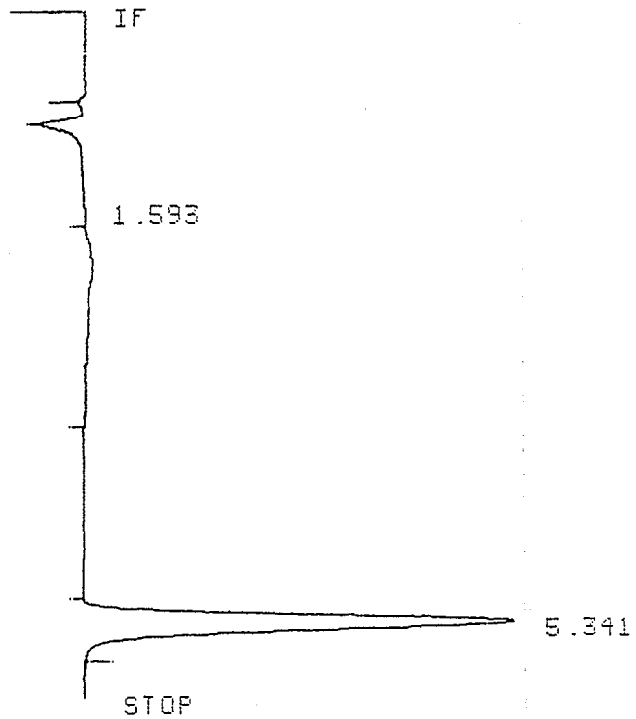
Gas Chromatograph Plots

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK- 16
REPORT MEMO:

* RUN # 2 JAN 1, 1901 10:24:24
START



Closing signal file B:Q1EB0059.BNC

RUN# 2 JAN 1, 1901 10:24:24

SAMPLE NAME: BLANK- ; 16

SIGNAL FILE: B:Q1EB0059.BNC

Burlington RECON Multimedia Analysis

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.593	43745	PU	.696	27.12549
5.341	117524	VB	.161	72.87450

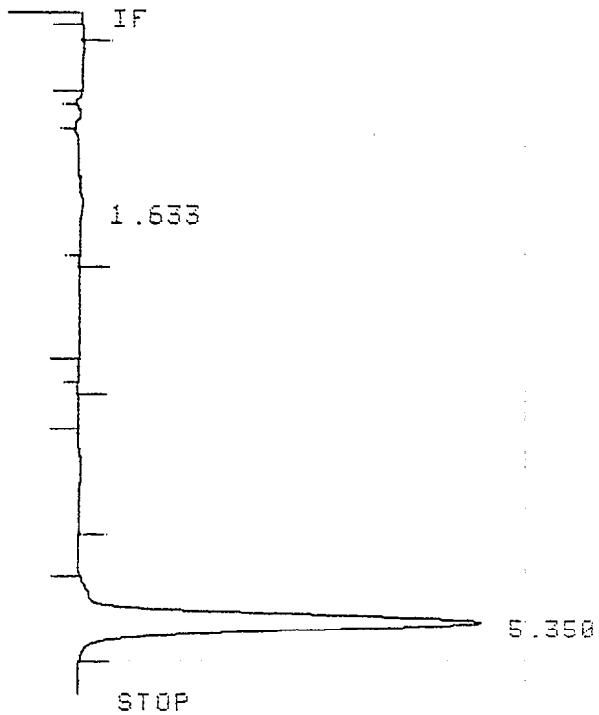
TOTAL AREA= 161269
MUL FACTOR=1.0000E+00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK- 17
REPORT MEMO:

* RUN # 4 JUN 3, 1992 07:56:32
START



Closing signal file B:Q4A44731.BNC

RUN# 4 JUN 3, 1992 07:56:32

SAMPLE NAME: BLANK-ɿ

SIGNAL FILE: B:Q4A44731.BNC

Burlington RECON sm Multimedia Analysis

CSTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
1.633	PU	6746	.592	190			
5.350	BB	109725	.164	11118	5R		REF. PEAK

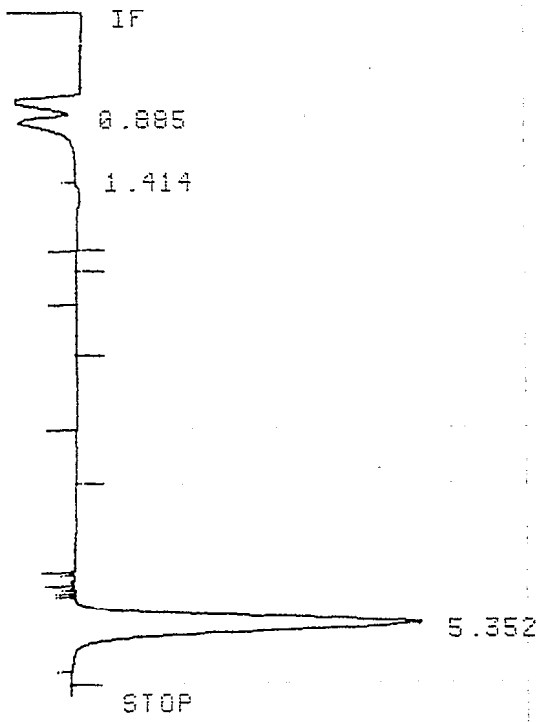
TOTAL AREA: 116471
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-18
REPORT MEMO:

* RUN # 5 JUN 3, 1992 08:18:06
START



Closing signal file B:Q4A44C3F.BNC

SAMPLE NAME: BLANK-18

SIGNAL FILE: B:Q4A44C3F.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.885	PV	7314	.082	1482			
1.414	VV	28515	.502	946			
5.352	PV	92141	.157	9781	5R		REF. PEAK

TOTAL AREA: 127970
MUL FACTOR: 1.00

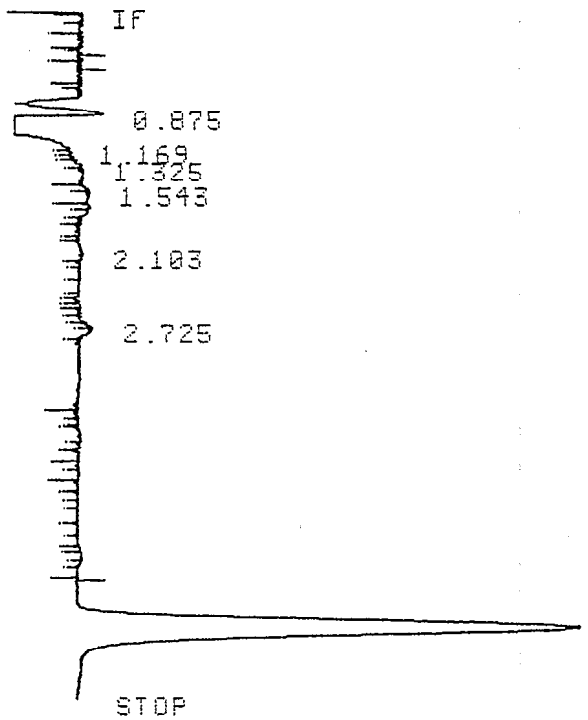
* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E-00]:

MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-36
REPORT MEMO: PH-36

* RUN # 7 JUN 3, 1992 09:14:15
START



Closing signal file B:Q4A45968.BNC

REFERENCE PEAK NOT FOUND.
IDENTIFICATION BASED ON CALIBRATED RETENTION TIME.

RUN# 7 JUN 3, 1992 09:14:15

SAMPLE NAME: GW-36
PH-36

SIGNAL FILE: B:Q4A45968.BNC

Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	CAL#	ug/L	NAME
.875	UP	14481	.072		.000	
1.169	PU	12581	.135		.000	
1.325	UU	3446	.072		.000	
1.543	BU	578	.038		.000	
2.103	PU	1798	.126		.000	
2.725	UU	767	.030	2	.379	CIS-1,2-DCE

TOTAL AREA= 33651
MUL FACTOR=1.0000E+00

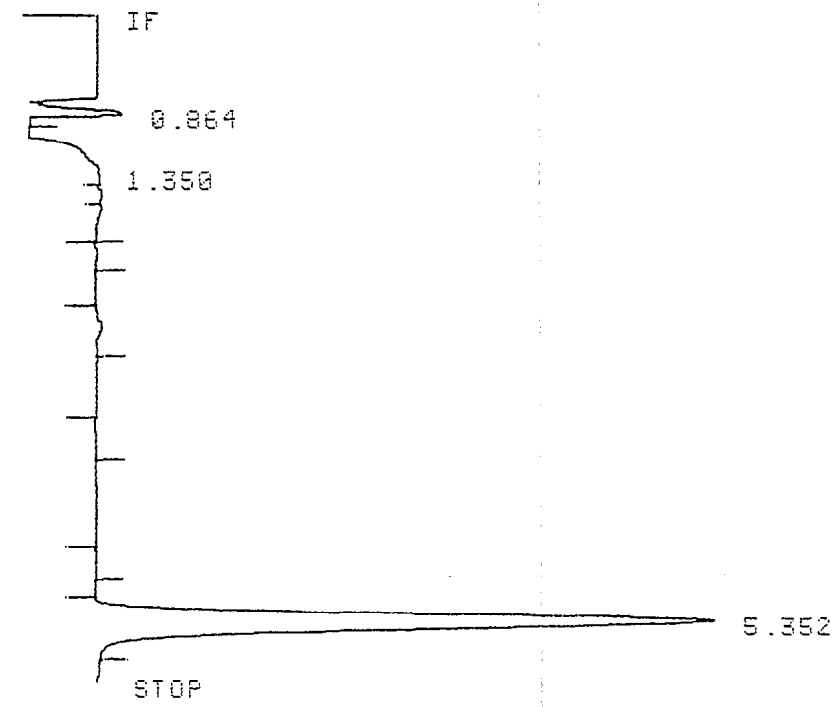
GRP#	ug/L	NAME
1	3.7911E-01	TOTAL DCE

```
*
*
*
*
*
*  OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00 ]:
SAMPLE AMT [0.0000E+00 ]:
MUL FACTOR [1.0000E+00 ]:
RECALIBRATION [Y/N*]:
NAME: GW-37
REPORT MEMO: PH-37A-18'

*  RUN #    8      JUN  3, 1992  09:35:03
START
```

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Closing signal file B:Q4R45E48.BNC
```

RUN# 8 JUN 3, 1992 09:35:03

SAMPLE NAME: GW-3
PH-3

SIGNAL FILE: B:Q4A45E48.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.864	BB	11539	.061	3161			
1.350	PV	48577	.344	2356			
5.352	BB	160874	.156	17139	5R		REF. PEAK

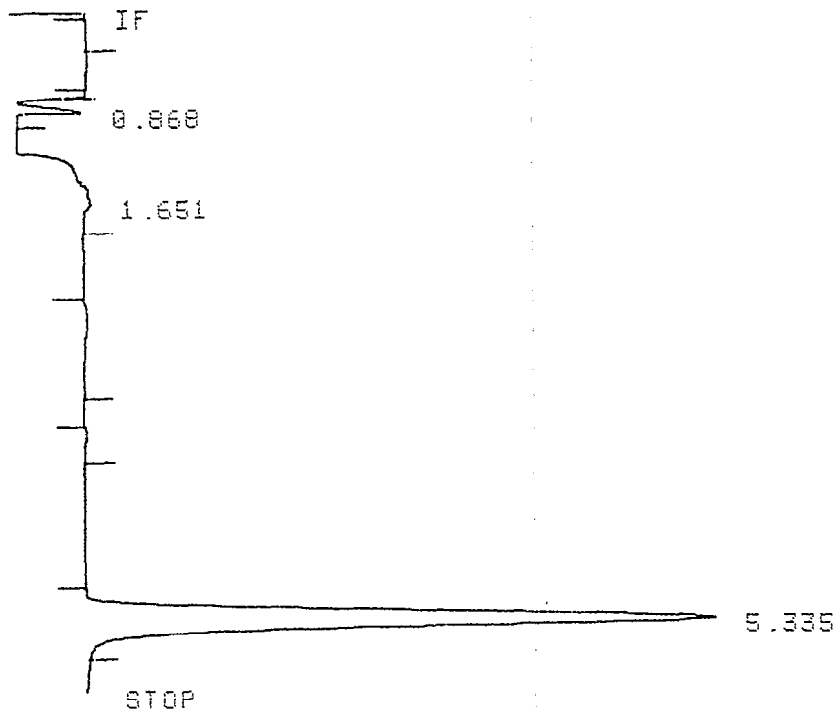
TOTAL AREA: 220990
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-38
REPORT MEMO: PH-~~38~~ 378-9

* RUN # 9 JUN 3, 1992 09:54:30
START



Closing signal file B:Q4A46207.BNC

RUN# 9 JUN 3, 1992 09:54:30

SAMPLE NAME: GW-39
PH-378 9'

SIGNAL FILE: B:Q4A46207.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.868	BB	6222	.043	2395			
1.651	PB	61182	.737	1384			
5.335	BB	167929	.160	17502	5R		REF. PEAK

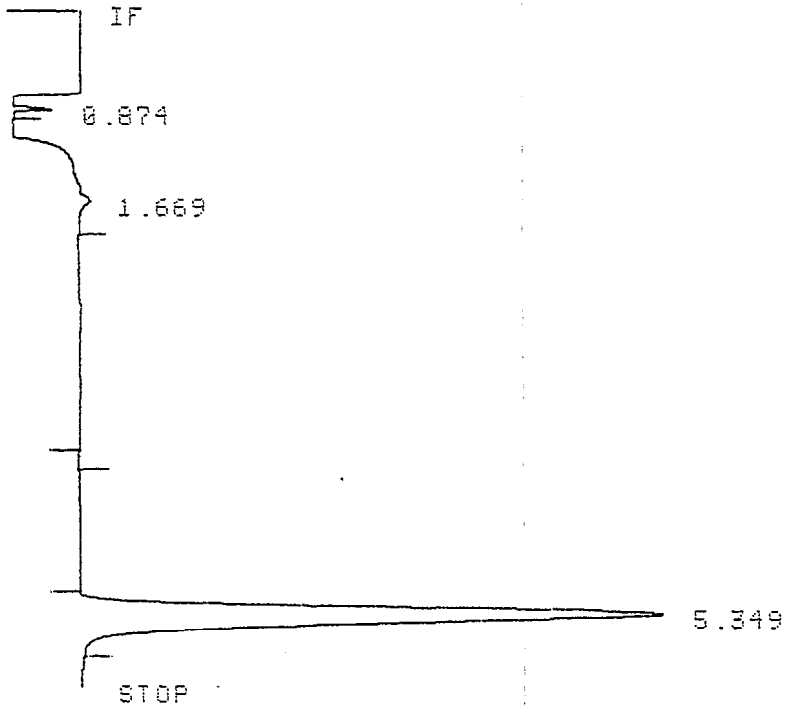
TOTAL AREA: 235333
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-39
REPORT MEMO: PH-38

* RUN # 10 JUN 3, 1992 10:11:26
START



Closing signal file B:Q4A466CF.BNC

RUN# 10 JUN 3, 1992 10:11:26

SAMPLE NAME: GW-39
PH-38

SIGNAL FILE: B:Q4A466CF.BNC

'sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.874	BB	7875	.055	2371			
1.669	PB	71451	.862	1381			
5.349	BB	157314	.162	16213	5R		REF. PEAK

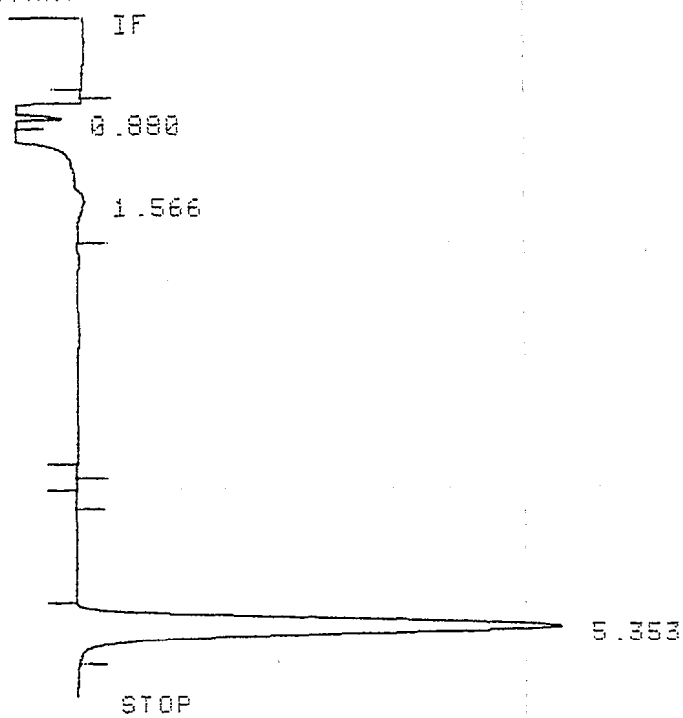
TOTAL AREA: 236640
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-40
REPORT MEMO: PH-39

* RUN # 11 JUN 3, 1992 10:59:33
START



Closing signal file B:Q4A47216.BNC

RUN# 11 JUN 3, 1992 10:59:33

SAMPLE NAME: GW-40
PH-39

SIGNAL FILE: B:Q4A47216.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.880	BB	9911	.060	2764			
1.566	PB	78315	.835	1564			
5.353	BB	126818	.156	13541	5R		REF. PEAK

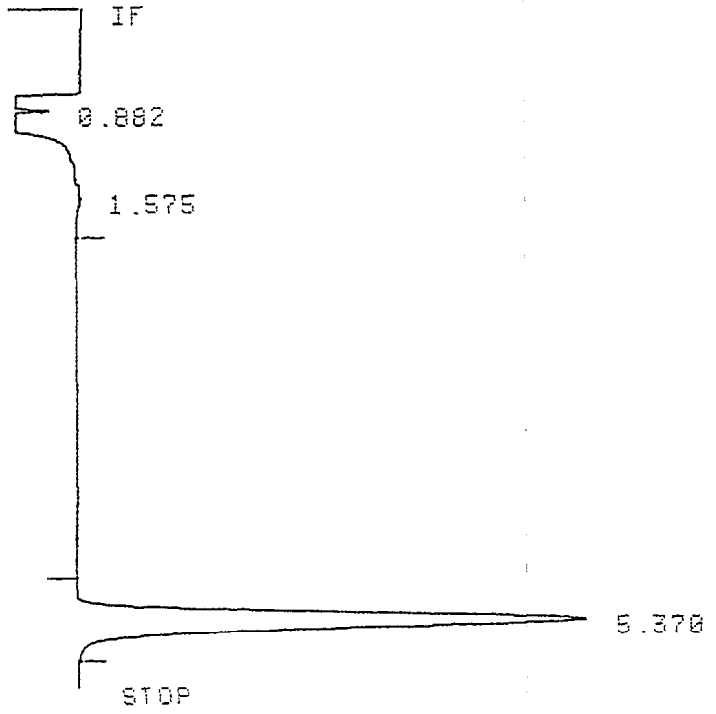
TOTAL AREA: 215044
MUL FACTOR: 1.00

* OP # ?

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-41
REPORT MEMO: PH-40

* RUN # 12 JUN 3, 1992 11:27:17
START



Closing signal file B:Q4A47896.BNC

RUN# 12 JUN 3, 1992 11:27:17

SAMPLE NAME: GW-41
PH-40

SIGNAL FILE: B:Q4A47896.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.882	BP	8376	.057	2462			
1.575	PB	74572	.913	1362			
5.370	PB	135409	.159	14156	5R		REF. PEAK

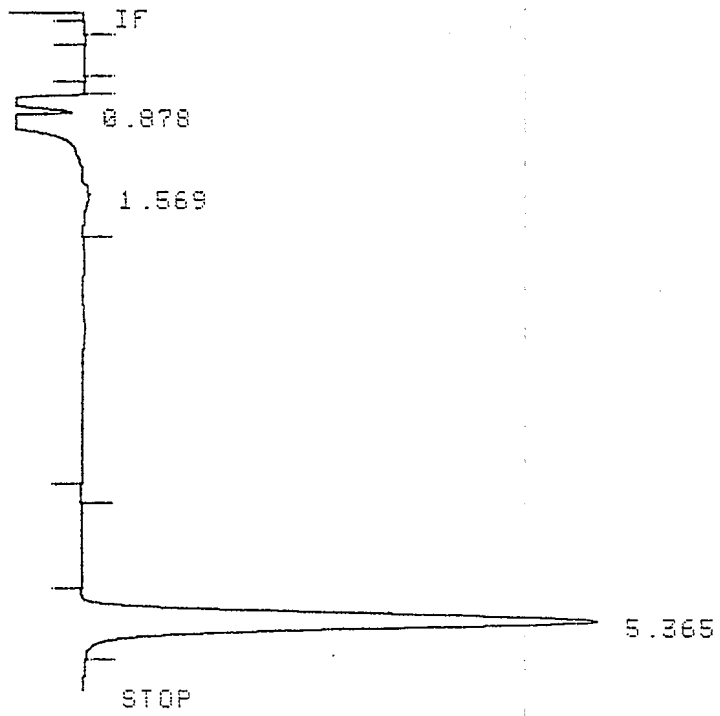
TOTAL AREA: 218357
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-42
REPORT MEMO: PH-41

* RUN # 13 JUN 3, 1992 12:06:43
START



Closing signal file B:Q4A481D4.BNC

RUN# 13 JUN 3, 1992 12:06:43

SAMPLE NAME: GW-42
PH-41

SIGNAL FILE: B:Q4A4810 4.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.878	BP	9428	.063	2500			
1.569	PB	69654	.883	1314			
5.365	BB	137475	.159	14408	5R		REF. PEAK

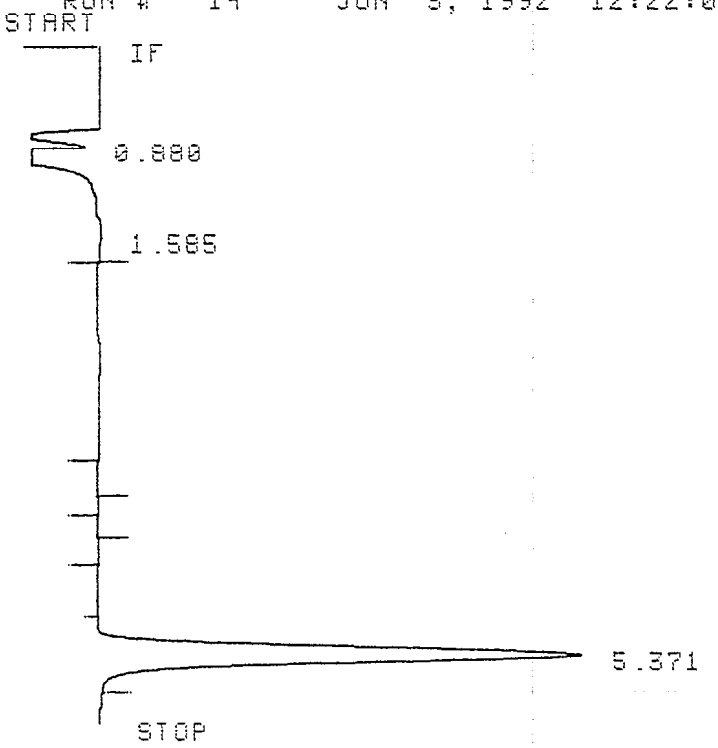
TOTAL AREA: 216557
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-43
REPORT MEMO: PH-42

* RUN # 14 JUN 3, 1992 12:22:03



Closing signal file B:Q4A4856C.BNC

RUN# 14 JUN 3, 1992 12:22:03

SAMPLE NAME: GW-43
PH-42

SIGNAL FILE: B:Q4A4856C.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.880	BP	8130	.062	2197			
1.585	PB	62642	.974	1072			
5.371	PB	129814	.159	13565	5R		REF. PEAK

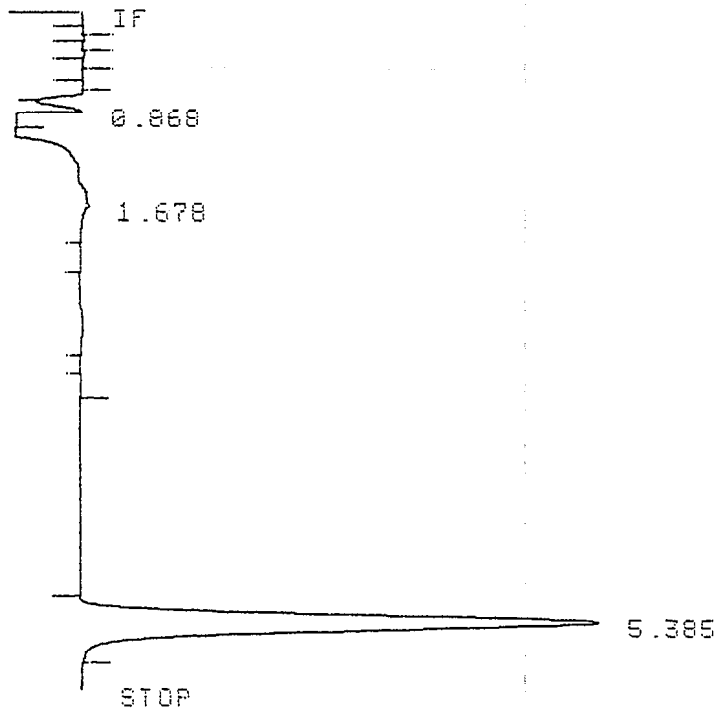
TOTAL AREA: 200586
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-44
REPORT MEMO: PH-43

* RUN # 16 JUN 3, 1992 13:06:52
START



Closing signal file B:Q4A48FED.BNC

RUN# 16 JUN 3, 1992 13:06:52

SAMPLE NAME: GW-44
PH-43

SIGNAL FILE: B:Q4A48FED.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.868	BB	3795	.032	1960			
1.678	PV	120914	.842	2394			
5.385	BB	140737	.162	14437	SR		REF. PEAK

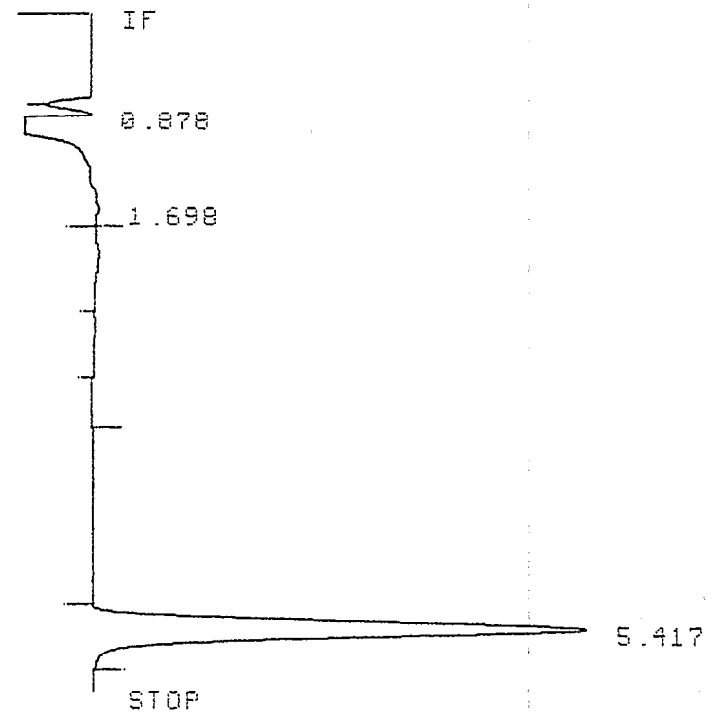
TOTAL AREA: 265446
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-44D
REPORT MEMO: PH-43 DUPLICATE

* RUN # 17 JUN 3, 1992 13:15:59
START



Closing signal file B:Q4A49210.BNC

RUN# 17 JUN 3, 1992 13:15:59

SAMPLE NAME: GW-44D
PH-43 DUPLICATE

SIGNAL FILE: B:Q4A49210.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.878	BP	7866	.062	2119			
1.698	PB	56081	1.38	678			
5.417	BB	134164	.162	13796	5R		REF. PEAK

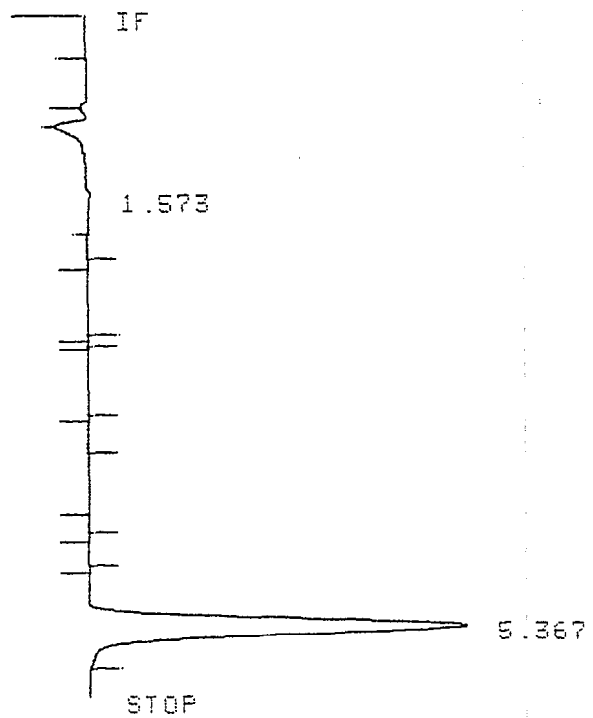
TOTAL AREA: 198111
MUL FACTOR: 1.00

* OP # 8%7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-19
REPORT MEMO:

* RUN # 18 JUN 3, 1992 13:39:14
START



Closing signal file B:Q4A49783.BNC

RUN# 18 JUN 3, 1992 13:39:14

SAMPLE NAME: BLANK-19

SIGNAL FILE: B:Q4A49783.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
1.573	PU	24720	.805	512			
5.367	PB	99003	.159	10371	5R		REF. PEAK

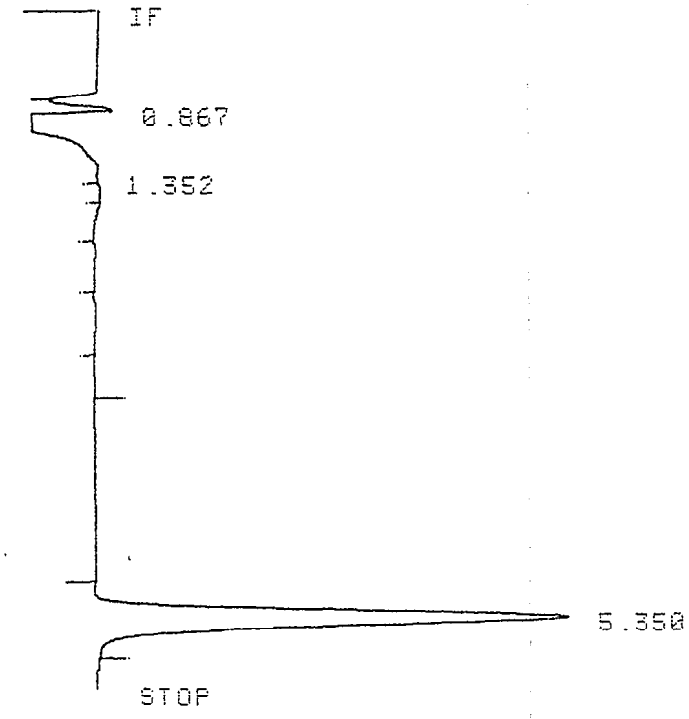
TOTAL AREA: 123723
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-45
REPORT MEMO: PH-44

* RUN # 19 JUN 3, 1992 14:06:30
START



Closing signal file B:Q4A49DE7.BNC

RUN# 19 JUN 3, 1992 14:06:30

SAMPLE NAME: GW-45
PH-44

SIGNAL FILE: B:Q4A490E7.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.867	BP	9465	.061	2568			
1.352	PV	54776	.361	2531			
5.350	PB	127314	.161	13157	5R		REF. PEAK

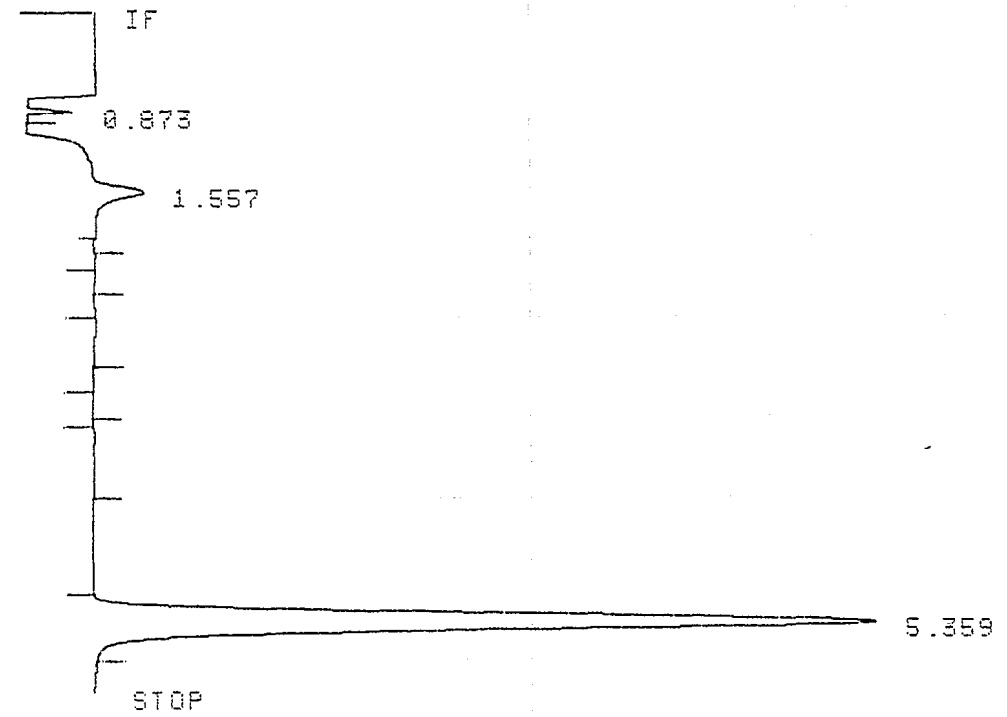
TOTAL AREA: 191555
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: SL-46
REPORT MEMO: SDA-100

* RUN # 20 JUN 3, 1992 14:19:50
START



Closing signal file B:Q4A4A107.BNC

RUN# 20 JUN 3, 1992 14:19:50

SAMPLE NAME: SL-46
SDA-100

SIGNAL FILE: B:Q4A4A107.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.873	BB	6951	.054	2156			
1.557	PV	83629	.507	2747			
5.359	BB	209689	.161	21714	5R		REF. PEAK

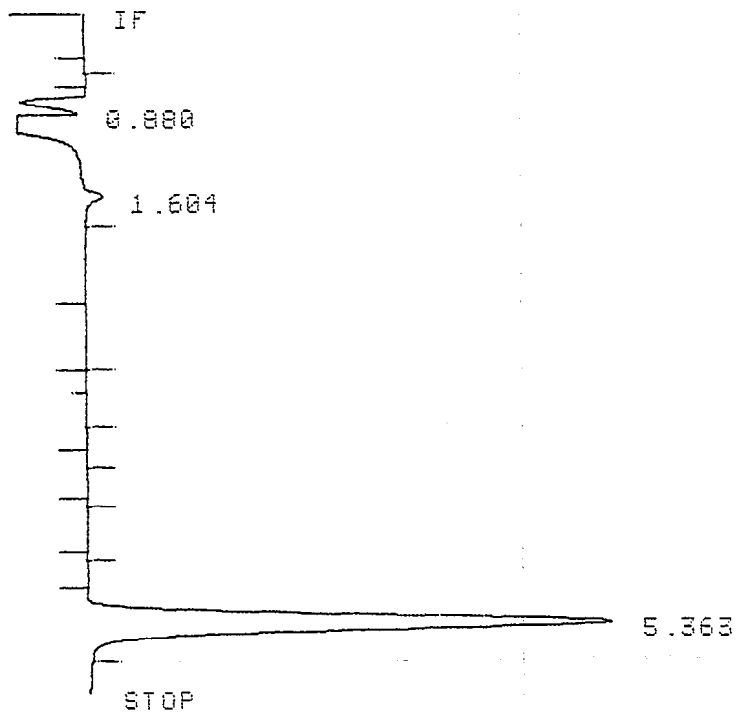
TOTAL AREA: 300269
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-47
REPORT MEMO: PH▒▒SWA-100

* RUN # 21 JUN 3, 1992 14:34:54
START



Closing signal file B:Q4A4A48F.BNC

RUN# 21 JUN 3, 1992 14:34:54

SAMPLE NAME: GW-47
SWA-100

SIGNAL FILE: B:Q4A4A48F.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.880	PP	7913	.063	2101			
1.604	PB	56617	.727	1298			
5.363	BB	137536	.156	14658	5R		REF. PEAK

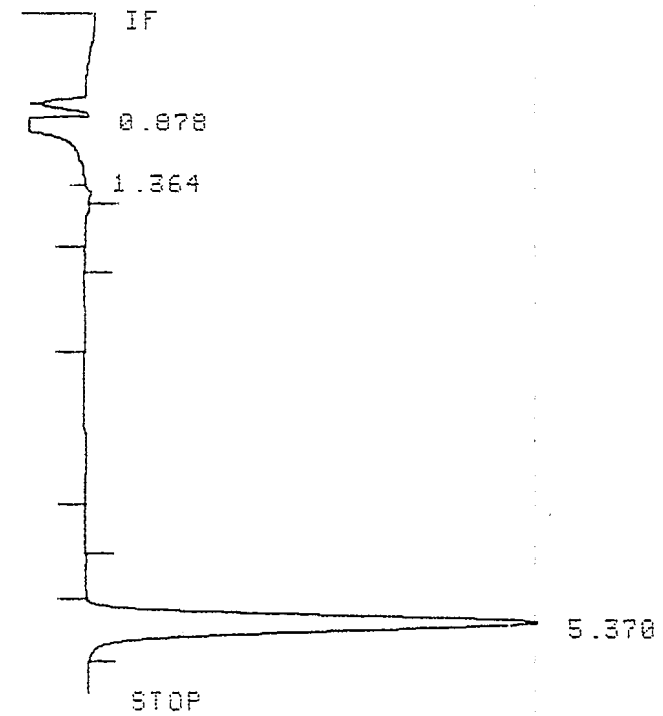
TOTAL AREA: 202066
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-48
REPORT MEMO: PH-45

* RUN # 22 JUN 3, 1992 14:46:20
START



Closing signal file B:Q4A4A73D.BNC

RUN# 22 JUN 3, 1992 14:46:20

SAMPLE NAME: GW-48
PH-45

SIGNAL FILE: B:Q4A4A73D.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.878	BP	9077	.072	2111			
1.364	PV	30060	.488	1026			
5.370	BB	118793	.158	12518	5R		REF. PEAK

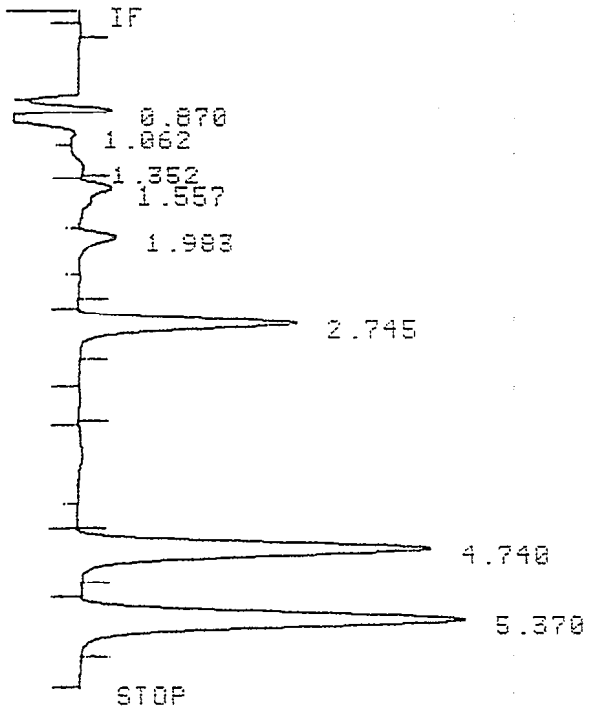
TOTAL AREA: 157930
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-49
REPORT MEMO: PH-46

* RUN # 23 JUN 3, 1992 14:58:01
START



Closing signal file B:04A4A9F9.BNC

RUN# 23 JUN 3, 1992 14:58:01

SAMPLE NAME: GW-49
PH-46

SIGNAL FILE: B:Q4A4A9F9.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.870	BP	12624	.069	3034			
1.062	PV	14553	.134	1810			
1.352	VB	12846	.402	532			
1.557	BP	7025	.134	873			
1.983	PP	7053	.109	1075	1	2	TRANS-1,2-DCE
2.745	BB	41026	.111	6173	2	20	CIS-1,2-DCE
4.740	BB	80882	.136	9880	4	36	TCE
5.370	BB	102868	.159	10797	5R		REF. PEAK
				GROUP	1	22	TOTAL DCE

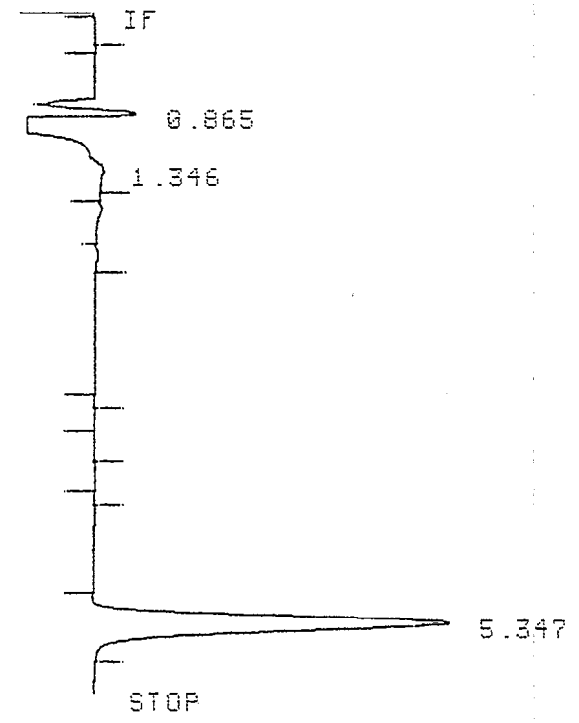
TOTAL AREA: 278877
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-50
REPORT MEMO: PH-47

* RUN # 24 JUN 3, 1992 15:08:47
START



Closing signal file B:Q4A4AC80.BNC

RUN# 24 JUN 3, 1992 15:08:47

SAMPLE NAME: GW-50
PH-47

SIGNAL FILE: B:Q4A4AC80.BNC

Burlington RECON[sm] Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.865	VP	16445	.078	3529			
1.346	PB	31802	.464	1142			
5.347	BB	92609	.156	9889	5R		REF. PEAK

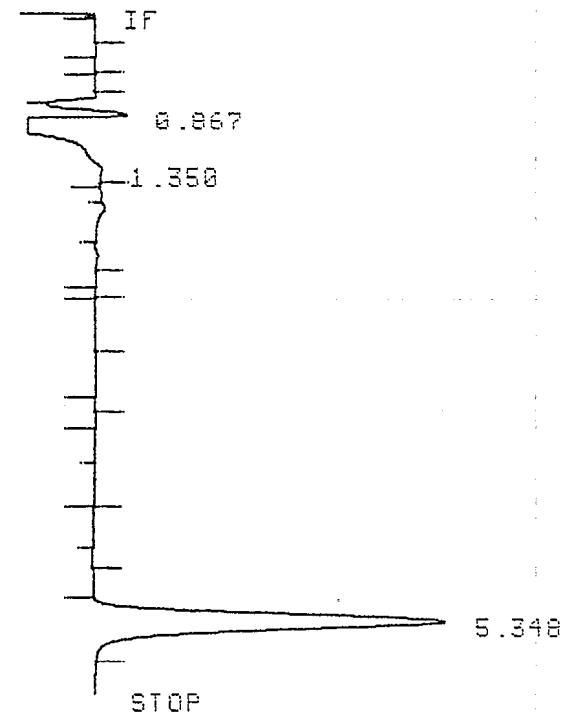
TOTAL AREA: 140856
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-51
REPORT MEMO: PH-48

* RUN # 25 JUN 3, 1992 15:20:24
START



Closing signal file B:Q4A4AF39.BNC

RUN# 25 JUN 3, 1992 15:20:24

SAMPLE NAME: GW-51
PH-48

SIGNAL FILE: B:Q4A4AF39.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.867	BP	11484	.065	2936			
1.350	PB	23171	.485	797			
5.348	BB	92540	.158	9790	5R		REF. PEAK

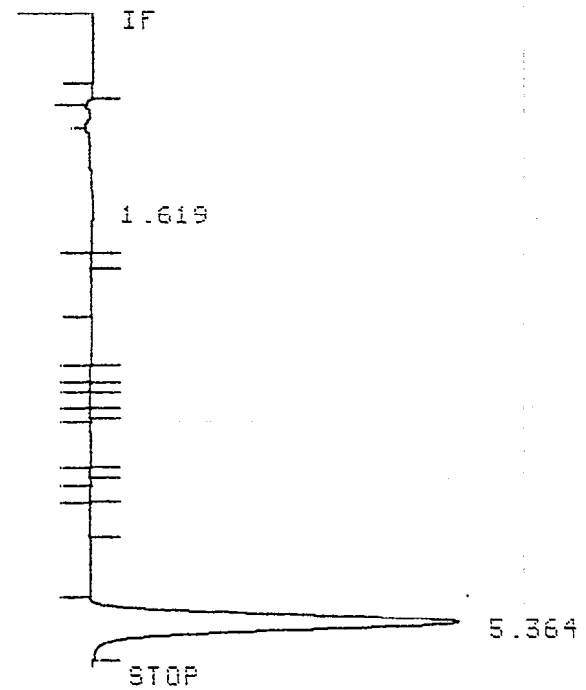
TOTAL AREA: 127195
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-20
REPORT MEMO:

* RUN # 27 JUN 3, 1992 15:53:31
START



Closing signal file B:Q4A406FD.BNC

RUN# 27 JUN 3, 1992 15:53:31

SAMPLE NAME: BLANK-10

SIGNAL FILE: B:Q4A4B6FD.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
1.619	PB	6084	.699	145			
5.364	PB	97169	.157	10293	5R		REF. PEAK

TOTAL AREA: 103253

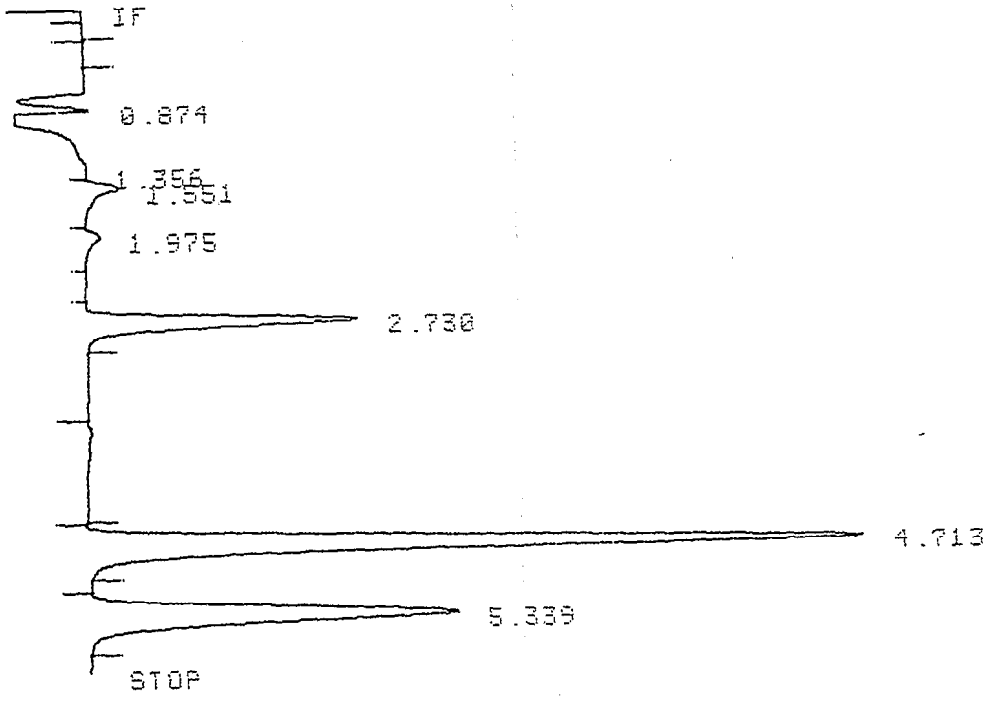
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-52
REPORT MEMO: PH-49

* RUN # 28 JUN 3, 1992 16:18:33
START



Closing signal file B:Q4A4BCDA.BNC

RUN# 28 JUN 3, 1992 16:18:33

SAMPLE NAME: GW-52
PH-49

SIGNAL FILE: B:Q4A4BCDA.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.874	BP	9107	.064	2381			
1.356	PV	49183	.397	2067			
1.551	VV	49065	.307	2665			
1.975	VV	25451	.258	1641	1	7	TRANS-1,2-DCE
2.730	VB	59162	.126	7818	2	29	CIS-1,2-DCE
4.713	PB	176998	.136	21633	4	79	TCE
5.339	PB	97198	.158	10238	5R		REF. PEAK
				GROUP	1	36	TOTAL DCE

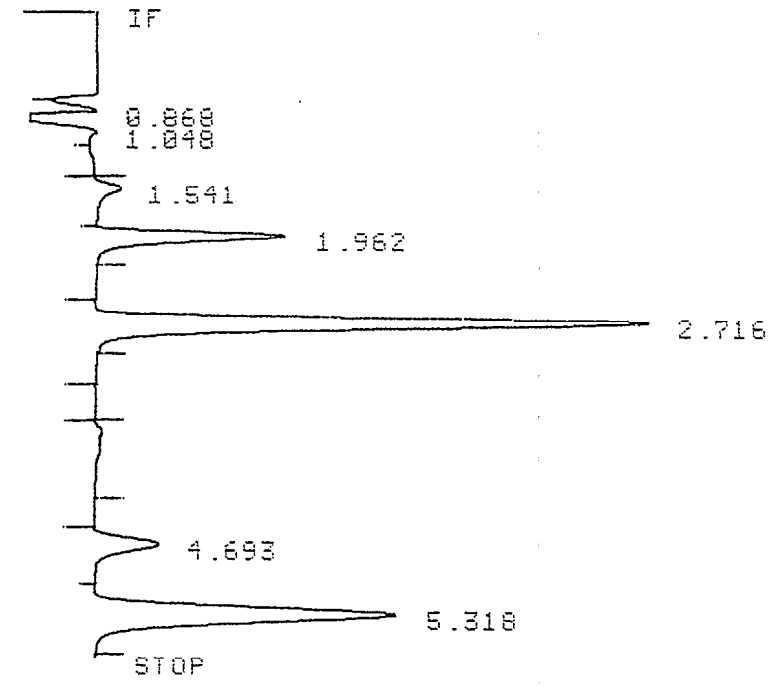
TOTAL AREA: 466164
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-53
REPORT MEMO: PH-50

* RUN # 29 JUN 3, 1992 16:31:06
START



Closing signal file B:Q4A4BFCB.BNC

RUN# 29 JUN 3, 1992 16:31:06

SAMPLE NAME: GW-53
PH-50

SIGNAL FILE: B:Q4A4BFCB.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.868	BP	7950	.066	1996			
1.048	PV	14852	.132	1875			
1.541	BP	4771	.114	699			
1.962	PB	31163	.098	5275	1	8	TRANS-1,2-DCE
2.716	BB	99409	.108	15353	2	49	CIS-1,2-DCE
4.693	BP	14421	.133	1812	4	6	TCE
5.318	PB	78474	.157	8345	SR		REF. PEAK
				GROUP	1	58	TOTAL DCE

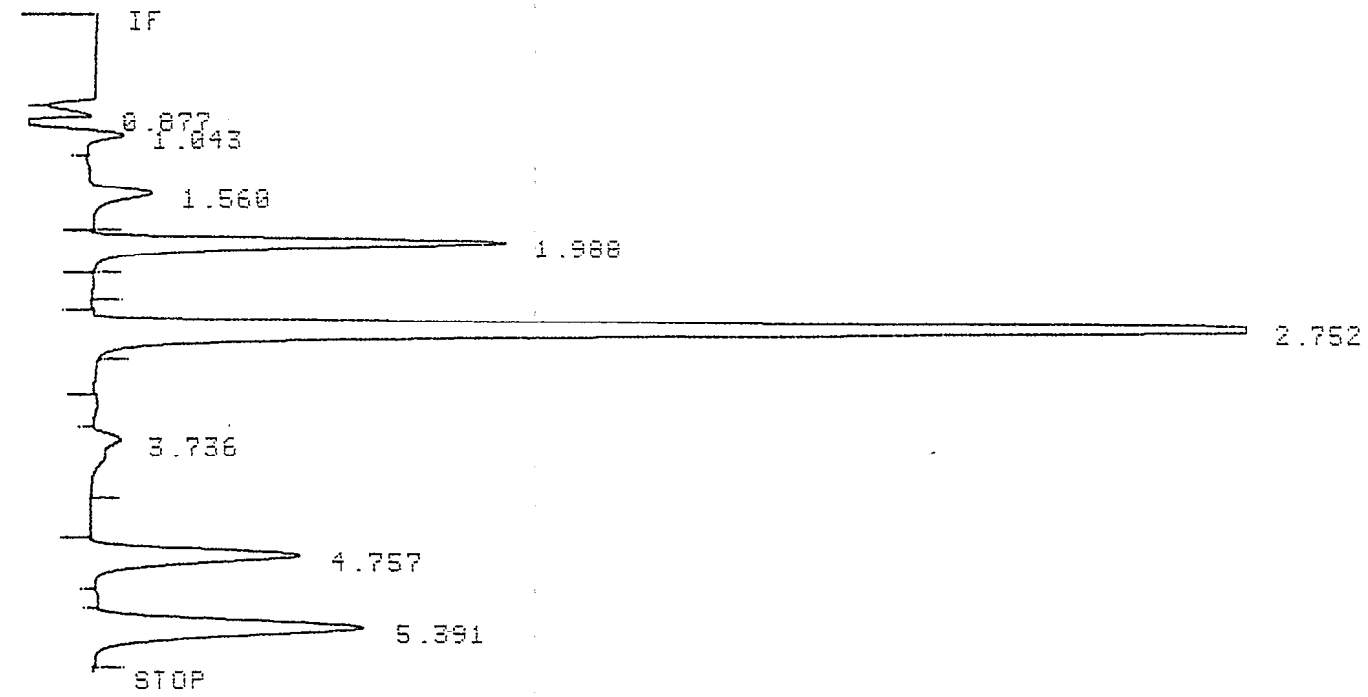
TOTAL AREA: 251040
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-54
REPORT MEMO: PH-51

* RUN # 30 JUN 3, 1992 16:55:54
START



Closing signal file B:Q4A4C598.BNC

RUN# 30 JUN 3, 1992 16:55:54

SAMPLE NAME: GW-54
PH-51

SIGNAL FILE: B:Q4A4C59B.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.877	BP	7928	.070	1891			
1.043	PV	27201	.152	2977			
1.560	VB	46420	.315	2459			
1.988	BB	70458	.103	11420	1	19	TRANS-1,2-DCE
2.752	BB	280880	.112	41836	2	139	CIS-1,2-DCE
3.736	PB	8862	.187	790	3	2	BENZENE
4.757	BV	48310	.138	5838	4	22	TCE
5.391	VB	72833	.161	7538	5R		REF. PEAK
				GROUP	1	158	TOTAL DCE

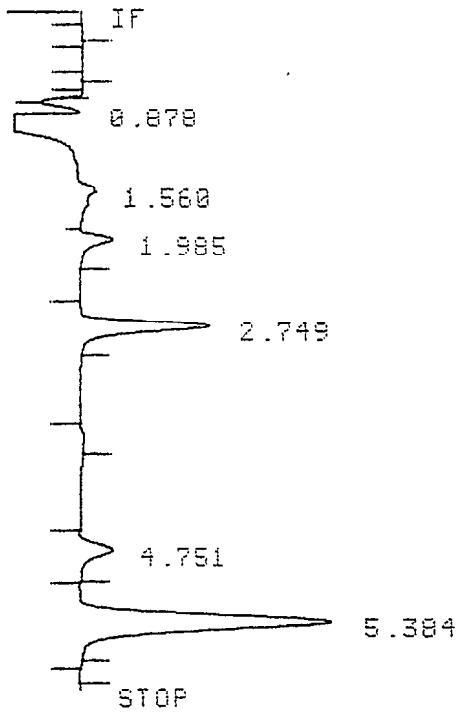
TOTAL AREA: 562892
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-55
REPORT MEMO: PH-52

* RUN # 31 JUN 3, 1992 17:10:03
START



Closing signal file B:Q4A4C8EC.BNC

RUN# 31 JUN 3, 1992 17:10:03

SAMPLE NAME: GW-55
PH-52

SIGNAL FILE: B:Q4A4C8EC.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.878	BP	7219	.062	1954			
1.560	PV	71915	.669	1792			
1.985	VB	13323	.154	1440	1	4	TRANS-1,2-DCE
2.749	PB	23750	.108	3674	2	12	CIS-1,2-DCE
4.751	BB	7313	.130	934	4	3	TCE
5.384	BB	65847	.156	7035	5R		REF. PEAK
				GROUP	1	15	TOTAL DCE

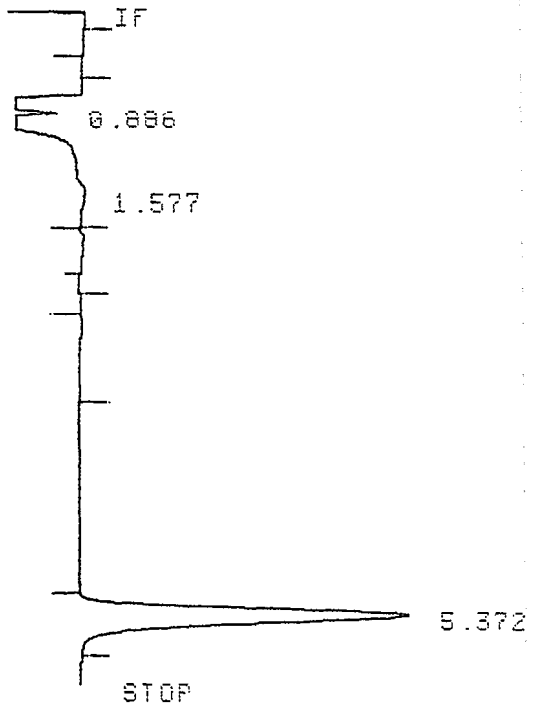
TOTAL AREA: 189367
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-56
REPORT MEMO: PH-53

* RUN # 32 JUN 3, 1992 17:35:47
START



Closing signal file B:Q4A4CEF4.BNC

RUN# 32 JUN 3, 1992 17:35:47

SAMPLE NAME: GW-56
PH-53

SIGNAL FILE: B:Q4A4CEF4.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.886	PP	6523	.058	1878			
1.577	PB	52630	.882	994			
5.372	BB	86957	.158	9145	SR		REF. PEAK

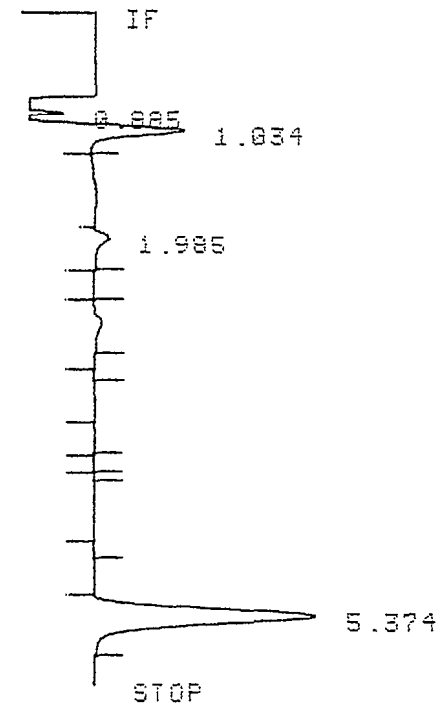
TOTAL AREA: 146110
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-57
REPORT MEMO: PH-54

* RUN # 33 JUN 3, 1992 17:48:49
START



Closing signal file B:Q4A40202.ANC

RUN# 33 JUN 3, 1992 17:48:49

SAMPLE NAME: GW-57
PH-54

SIGNAL FILE: B:Q4A40202.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.885	PP	4384	.049	1504			
1.034	PB	25942	.121	4111			
1.985	VB	3318	.120	460	1	1	TRANS-1,2-DCE
5.374	BB	59344	.159	6230	5R		REF. PEAK

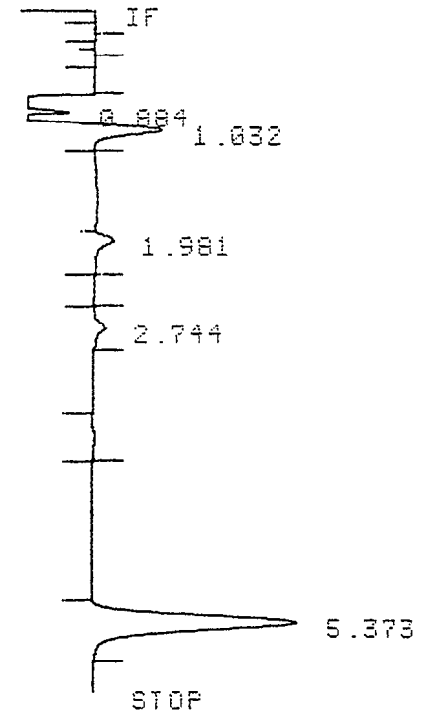
TOTAL AREA: 96988
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-570
REPORT MEMO: PH-54 DUPLICATE

* RUN # 35 JUN 3, 1992 18:06:07
START



Closing signal file B:04A40610.BNC
ATTEMPTED WRITE PAST END OF FILE

RUN# 35 JUN 3, 1992 18:06:07

SAMPLE NAME: GW-57D
PH-54 DUPLICATE

SIGNAL FILE: B7Q4A4D610.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.884	PP	5281	.050	1744			
1.032	PB	24867	.120	3445			
1.981	VB	3120	.095	546	1		TRANS-1,2-DCE
2.744	BB	2247	.120	311	2	1	CIS-1,2-DCE
5.373	BB	52486	.154	5663	SR		REF. PEAK
				GROUP	1	2	TOTAL DCE

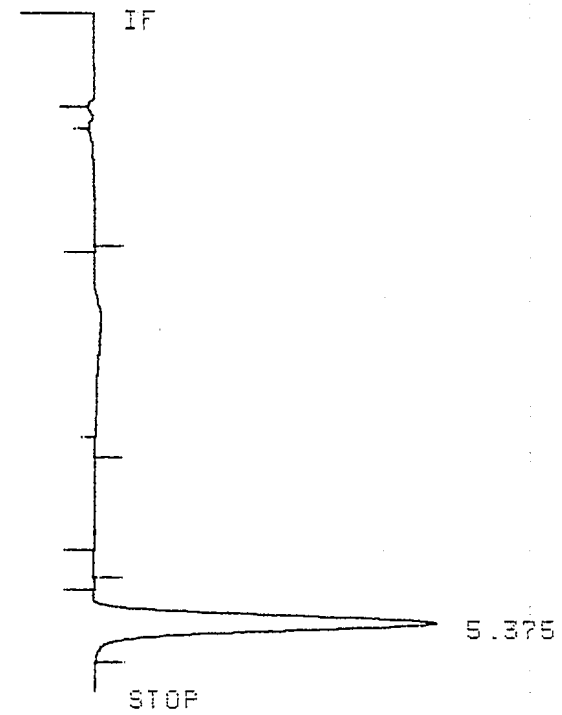
TOTAL AREA: 88001
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-21
REPORT MEMO:

* RUN # 36 JUN 3, 1992 18:14:36
START



Error storing signal to B:Q4A4080D.ANC
ATTEMPTED WRITE PAST END OF FILE

RUN# 36 JUN 3, 1992 18:14:36

SAMPLE NAME: BLANK-21

SIGNAL FILE: B704A4080M.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
5.375	PB	90165	.158	9507	5R		REF. PEAK

TOTAL AREA: 90165
MUL FACTOR: 1.00

BURLINGTON
ENVIRONMENTAL

GROUNDWATER SURVEY
CAMP ALLEN
NORFOLK, VIRGINIA

April 1992

Prepared for:

Baker Environmental, Inc.
Coraopolis, Pennsylvania

Project 535030

BURLINGTON ENVIRONMENTAL, INC.
4091 Venture Place
Groveport, Ohio 43125

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Table 1 Groundwater Analytical Results ---------- T-1

GROUNDWATER SURVEY
CAMP ALLEN
NORFOLK, VIRGINIA

1. INTRODUCTION

Baker Environmental, Inc. (Baker) requested that Burlington Environmental Inc., (Burlington) perform a groundwater survey at the site located in Norfolk, Virginia.

The purpose of this survey was to evaluate the potential presence, and estimate the extent of impact, of volatile organic compounds (VOCs) at the above mentioned facility. This survey was performed by obtaining and analyzing groundwater samples on site.

Groundwater sampling was performed from April 29 to May 1, 1992.

2 SUMMARY

Groundwater samples from 35 probe hole locations were collected and analyzed. Three duplicate groundwater samples and fifteen sample blanks were also analyzed. Samples were analyzed for the following chemicals:

- o benzene;
- o cis-1,2-dichloroethylene;
- o trans-1,2-dichloroethylene; and
- o trichloroethylene.

The analytical results are summarized in Table 1.

Groundwater samples were collected on site at locations suspected by Baker to be impacted with VOCs. Sampling locations were selected by Baker based on previous on-site data.

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

Sample I.D.	Probe Hole Number	Depth (Feet)	Concentration (ug/L) Total DCE	Benzene	TCE	Comments
BLANK-01	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-02	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-03	-	-	ND(1)	ND(1)	ND(1)	QC-Probe Rod Blank
GW-01	PH-01	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-02	PH-02	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-03	PH-03	16.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-04	PH-04	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-05	PH-05	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-06	PH-06	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-06D	PH-06	15.0	ND(1)	ND(1)	ND(1)	QC-Duplicate
BLANK-04	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-05	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-06	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank

ND	Not detected at the detection limit in parentheses
QC	Quality Control
ug/L	Micrograms per liter
-	Not Applicable
DCE	dichloroethylene
TCE	trichloroethylene

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

Sample I.D.	Probe Hole Number	Depth (Feet)	Concentration (ug/L) Total DCE	Benzene	TCE	Comments
BLANK-07	-	-	ND(1)	ND(1)	ND(1)	QC-Probe Rod Blank
GW-07	PH-07	16.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-08	PH-08	15.0	166	8	13	Groundwater
GW-09	PH-09	18.0	7	ND(1)	18	Groundwater
GW-10	PH-10	18.0	53	42	148	Groundwater
GW-11	PH-11	15.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-12	PH-12	18.0	<1	ND(1)	ND(1)	Groundwater
GW-13	PH-13	18.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-14	PH-14	18.0	3	<1	2	Groundwater
GW-15	PH-15	18.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-16	PH-16	18.0	<1	<1	ND(1)	Groundwater
BLANK-08	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
GW-17	PH-17	18.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-18	PH-18	18.0	ND(1)	ND(1)	ND(1)	Groundwater
GW-19	PH-19	18.0	ND(1)	ND(1)	ND(1)	Groundwater
Area A-1	-	-	ND(1)	ND(1)	ND(1)	Well Water
GW-20	PH-20	18.0	1	ND(1)	2	Groundwater
GW-21	PH-21	18.0	ND(1)	ND(1)	ND(1)	Groundwater

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

Sample I.D.	Probe Hole Number	Depth (Feet)	Concentration (ug/L) Total DCE	Benzene	TCE	Comments
GW-21D	PH-21	18.0	ND(1)	ND(1)	ND(1)	QC-Duplicate
GW-22	PH-22	18.0	ND(1)	ND(1)	ND(1)	Groundwater
BLANK-09	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-10	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-11	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
BLANK-12	-	-	ND(1)	ND(1)	ND(1)	QC-Probe Rod Blank
GW-23	PH-23	18.0	26	1	3	Groundwater
GW-23D	PH-23	18.0	32	1	3	QC-Duplicate
GW-24	PH-24	18.0	5	ND(1)	2	Groundwater
GW-25	PH-25	18.0	ND(1)	ND(1)	ND(1)	Groundwater
BMW11-5-1-92	-	-	286	5	19	Well Water
GW-26	PH-26	18.0	ND(1)	ND(1)	ND(1)	Groundwater
Area A-2	-	-	ND(1)	ND(1)	ND(1)	Well Water
GW-27	PH-27	18.0	3	<1	1	Groundwater
GW-28	PH-28	18.0	9	<1	7	Groundwater
BLANK-13	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
GW-29	PH-29	18.0	9	3	1	Groundwater
GW-30	PH-30	18.0	4	<1	ND(1)	Groundwater

TABLE 1

GROUNDWATER ANALYTICAL RESULTS

CAMP ALLEN
NORFOLK, VIRGINIA

			Concentration (ug/L)			
Sample I.D.	Probe Hole Number	Depth (Feet)	Total DCE	Benzene	TCE	Comments
GW-31	PH-31	15.0	2	ND(1)	ND(1)	Groundwater
GW-32	PH-32	15.0	8	ND(1)	<1	Groundwater
BLANK-14	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank
GW-33	PH-33	15.0	6	<1	<1	Groundwater
GW-34	PH-34	15.0	40	2	40	Groundwater
GW-35	PH-35	30.0	5	ND(1)	1	Groundwater
BLANK-15	-	-	ND(1)	ND(1)	ND(1)	QC-System Blank

3 GROUNDWATER SAMPLING AND ANALYSIS

Thirty five groundwater samples and three duplicate groundwater samples were collected from 35 locations using the RECON^{SM} System equipment. Samples were collected from a depth of 15 to 30 feet. Analytical results for the groundwater samples are presented in Table 1.

A hydraulic probe unit was used to drive and withdraw the groundwater sampling probes. A hydraulic hammer was used where necessary to assist in driving probes through unusually hard soil. The probes consisted of three-foot lengths of 0.75-inch-diameter threaded steel pipes with detachable drive points.

After the probe was inserted into the groundwater, the probe was withdrawn approximately one foot to create an annular space from which to collect a representative sample. A check valve attached to a length of polyethylene tubing was inserted through the probe into the water table. The sample was collected in the tubing, the tubing was pulled up, and the water in the tubing drained into a 40-milliliter (mL) glass vial sealed with a Teflon-lined septum screw cap. The sample was given to the GC technician for on-site analysis.

A Hewlett-Packard Model 5890A Series II gas chromatograph (GC) was used for the analysis of groundwater samples. Compound separation and detection were performed using a 30-meter wide-bore DB-624 volatile organic column and a photo-ionization detector (PID). Appendix A contains the GC field work sheets.

The groundwater samples were analyzed by modified U.S. Environmental Protection Agency (USEPA) SW-846 Methods 8010/8020. Modifications include use of a PID, a static headspace analysis, single-point calibration, and limited quality control measures.

Each sample vial was shaken for one minute and heated at 70^0 C for 10 minutes to equilibrate the volatile components between the liquid and the air in the vial. An aliquot of up to 500 microliters of the headspace was collected by inserting a syringe through the septum of the vial and pulling the headspace sample into the syringe. The sample was then injected directly into the GC using a gas-tight syringe. The analysis was performed isothermally at an oven temperature of 50^0 C and a total analysis time of 6 minutes.

Concentrations were measured based on an external standard calibration. Known concentrations of benzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and trichloroethylene were injected as a calibration gas mixture into the GC. Compound peak area versus standard concentration was used to calculate sample concentrations.

Compound identification was based on comparison of target compound retention times with sample unknowns. The cis & trans-1,2-dichloroethylene were reported as a total dichloroethylene concentration.

Analytical results for the groundwater sample analyzed by this technique will not necessarily be the same as those obtained by submitting the same groundwater sample for

laboratory analysis. Different extraction techniques are used in each case and, although method sensitivities and accuracies are comparable, different results are possible.

The detection limit is the lowest concentration of a compound that can be practicably measured relative to the calibration standard. Detection limits are a function of the injection volume as well as detector sensitivity. The detection limit is calculated from the current response factor, the sample size, and the estimated peak area that would have been detected under the given conditions. For this survey, the detection limit for each of the target compounds was 1 microgram per liter (*u*g/L).

4 QUALITY CONTROL

Quality control is an essential part of an analytical test methodology. Quality control procedures increase the confidence in the analytical results and are used to evaluate the reproducibility of the data.

The GC was calibrated using a known concentration of each of the target compounds of interest at the beginning of each day before analysis of any samples. The USEPA recommends instrument calibration be performed at least once every 12 hours. The calibration helps to evaluate the operating conditions of the GC.

A chromatographic system blank is analyzed every 10 samples as a means of indication that sample carryover has not occurred. If sample carryover has occurred, the concentration detected in the system blank can be subtracted from any of the subsequent samples containing that compound. A probe rod blank is analyzed prior to sample collection to ensure that rods are free of contamination.

A duplicate sample, which is a second volume of groundwater collected from the same sample location, is analyzed once every 20 samples, or at least once daily for each survey. Duplicates are used to evaluate the reproducibility of the analytical data.

Appendix A

Gas Chromatograph
Field Work Sheets

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 4-29-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator Nick Crano GC Hewlett-Packard 5890A

Carrier Gas: H2✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
BLANK-01	-	-	7:20	500	1.0	-	QC-SYSTEM BLANK
~~Std-04.29~~	-	-	7:29	500	1.0	-	CALIB STD
BLANK-02	-	-	7:42	500	1.0	-	QC-SYSTEM BLANK
BLANK-03	-	-	13:20	500	1.0	-	QC-ROD BLANK
GW-01	PH-01	15'	13:41	500	1.0	-	GROUNDWATER
GW-02	PH-02	15'	14:46	500	1.0	-	GROUNDWATER
GW-03	PH-03	16'	15:35	500	1.0	-	GROUNDWATER
GW-04	PH-04	15'	16:24	500	1.0	-	GROUNDWATER
GW-05	PH-05	15'	17:03	500	1.0	-	GROUNDWATER
GW-06	PH-06	15'	17:38	500	1.0	-	GROUNDWATER
GW-060	PH-06	15'	17:46	500	1.0	-	QC-DUPLICATE
BLANK-04	-	-	17:56	500	1.0	-	QC-SYSTEM BLANK
RT-01	-	-	18:03	500	1.0	-	QC-RT CHECK

D = duplicate analysis
QC = quality control

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 4-30-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator Nick Cano GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
BLANK-05	–	–	7:32	500	1.0	–	QC-SYSTEM BLANK
STD-0430	–	–	7:40	500	1.0	–	CALIB STD.
BLANK-06	–	–	7:54	500	1.0	–	QC-SYSTEM BLANK
BLANK-07	–	–	8:01	500	1.0	–	QC-ROD BLANK
GW-07	PH-07	15'	8:12	500	1.0	–	GROUNDWATER
GW-08	PH-08	15'	8:29	500	1.0	–	GROUNDWATER
GW-09	PH-09	18'	9:42	500	1.0	–	GROUNDWATER
GW-10	PH-10	18'	10:04	500	1.0	–	GROUNDWATER
GW-11	PH-11	15'	10:35	500	1.0	–	GROUNDWATER
GW-12	PH-12	18'	11:24	500	1.0	–	GROUNDWATER
GW-13	PH-13	18'	13:15	500	1.0	–	GROUNDWATER
GW-14	PH-14	18'	15:02	500	1.0	–	GROUNDWATER
GW-15	PH-15	18'	15:40	500	1.0	–	GROUNDWATER
GW-16	PH-16	18'	16:57	500	1.0	–	GROUNDWATER
BLANK-08	–	–	17:05	500	1.0	–	QC-SYSTEM BLANK
GW-17	PH-17	18'	17:15	500	1.0	–	GROUNDWATER

D = duplicate analysis
QC = quality control

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 4-30-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator Nick Crano GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
GW-18	PH-18	18'	17:43	500	1.0	-	GROUNDWATER
GW-19	PH-19	18'	18:15	500	1.0	-	GROUNDWATER
Area A-1	-	-	18:26	500	1.0	-	WELL WATER
GW-20	PH-20	18'	18:40	500	1.0	-	GROUNDWATER
GW-21	PH-21	18'	19:45	500	1.0	-	GROUNDWATER
GW-21D	PH-21	18'	19:54	500	1.0	-	QC-DUPLICATE
GW-22	PH-22	18'	20:10	500	1.0	-	GROUNDWATER
BLANK-09	-	-	20:22	500	1.0	-	QC-SYSTEM BLANK
RT-02	-	-	20:36	500	1.0	-	QC-RT CHECK

D = duplicate analysis
QC = quality control

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 5-1-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator Nick Crano GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
BLANK-10	–	–	5:31	500	1.0	–	QC-SYSTEM BLANK
STD-0501	–	–	5:48	500	1.0	–	CALIB STD.
BLANK-11	–	–	6:04	500	1.0	–	QC-SYSTEM BLANK
BLANK-12	–	–	6:11	500	1.0	–	QC-ROD BLANK
GW-23	PH-23	18'	6:23	500	1.0	–	GROUNDWATER
GW-23D	PH-23	18'	6:30	500	1.0	–	QC-DUPLICATE
GW-24	PH-24	18'	6:53	500	1.0	–	GROUNDWATER
GW-25	PH-25	18'	7:58	500	1.0	–	GROUNDWATER
BMW11-5-1-92	–	–	8:08	500	1.0	–	WELL WATER
GW-26	PH-26	18'	8:25	500	1.0	–	GROUNDWATER
Area A-2	–	–	10:59	500	1.0	–	WELL WATER
GW-27	PH-27	18'	16:29	500	1.0	–	GROUNDWATER
GW-28	PH-28	18'	16:52	500	1.0	–	GROUNDWATER
BLANK-13	–	–	17:00	500	1.0	–	QC-SYSTEM BLANK
GW-29	PH-29	18'	17:07	500	1.0	–	GROUNDWATER
GW-30	PH-30	18'	17:32	500	1.0	–	GROUNDWATER

D = duplicate analysis
QC = quality control

RECON℠ SAMPLE ANALYSIS
Work Sheet

Date 5-1-92 Project Name Camp Allen Project Project Number 535030 Phase 1003 Task 77

GC Operator Nick Crano GC Hewlett-Packard 5890A

Carrier Gas: H2 ✓ He Pressure (kPa) 100 Detector FID Temp. (C) 300

Oven Temp. Profile (C) Temp. 1 50° Temp. 2 ___ Column DB-624 / 30 meter 0.53 ✓
Time 1 6 min Time 2 ___ SE-54 / 15 meter 0.53 ___

Injector Temp. (C) 200 Final Temp. ___

Sample I.D.	Probe Hole Number	Depth (ft.)	Analysis Time	Inj. Vol. (µl)	Multiplier	VAC in. Hg	Comments
GW-31	PH-31	15'	17:47	500	1.0	–	GROUNDWATER
GW-32	PH-32	15'	17:59	500	1.0	–	GROUNDWATER
BLANK-14	–	–	18:07	500	1.0	–	QC-SYSTEM BLANK
GW-33	PH-33	15'	19:16	500	1.0	–	GROUNDWATER
GW-34	PH-34	15'	19:35	500	1.0	–	GROUNDWATER
GW-35	PH-35	30'	20:28	500	1.0	–	GROUNDWATER
BLANK-15	–	–	20:51	500	1.0	–	QC-SYSTEM BLANK
RT-03	–	–	20:58	500	1.0	–	QC-RT CHECK

D = duplicate analysis
QC = quality control

Appendix B

Gas Chromatograph Plots

```
*  OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00 ]:
SAMPLE AMT [0.0000E+00 ]:
MUL FACTOR [1.0000E+00 ]:
RECALIBRATION [Y/N*]:
NAME: BLANK-01
REPORT MEMO:

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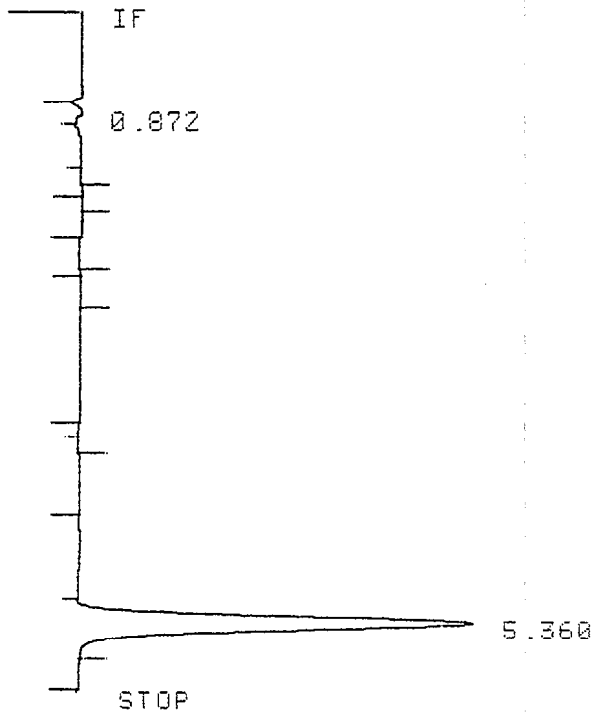


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IDENTIFICATION BASED ON CALIBRATED RETENTION TIME.

RUN# 4 APR 29, 1992 07:20:34

SAMPLE NAME: BLANK-01

SIGNAL FILE: B:Q474C8C3.BNC

Burlington RECON Multimedia Analysis

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.872	1490	PV	.089	1.50206
5.360	97707	PB	.149	98.49792

TOTAL AREA= 99197
MUL FACTOR=1.0000E+00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-02
REPORT MEMO:

* RUN # 6 APR 29, 1992 07:42:33
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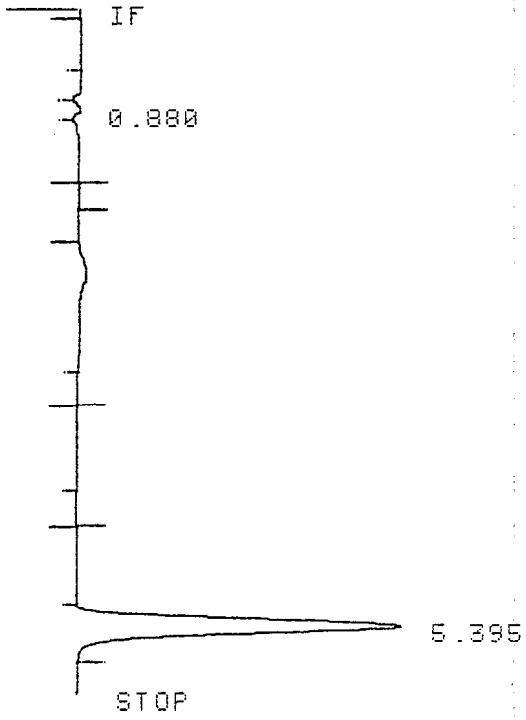


Closing signal file B:Q474CDEA.BNC

RUN# 6 APR 29, 1992 07:42:33

SAMPLE NAME: BLANK-02

SIGNAL FILE: B:Q474CDEA.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.880	PP	1436	.092	259			
5.395	PB	80540	.147	9128	5R		REF. PEAK

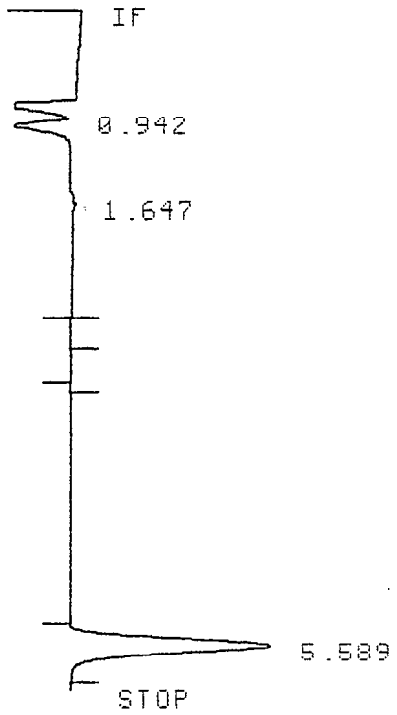
TOTAL AREA: 81976
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-03
REPORT MEMO: ROD BLANK

* RUN # 7 APR 29, 1992 13:20:47
START



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RUN# 7 APR 29, 1992 13:20:47

SAMPLE NAME: BLANK-03
ROD BLANK

SIGNAL FILE: B:Q4751030.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.942	PU	9919	.094	1756			
1.647	VB	86030	1.20	1192			
5.589	BB	50608	.150	5637	5R		REF. PEAK

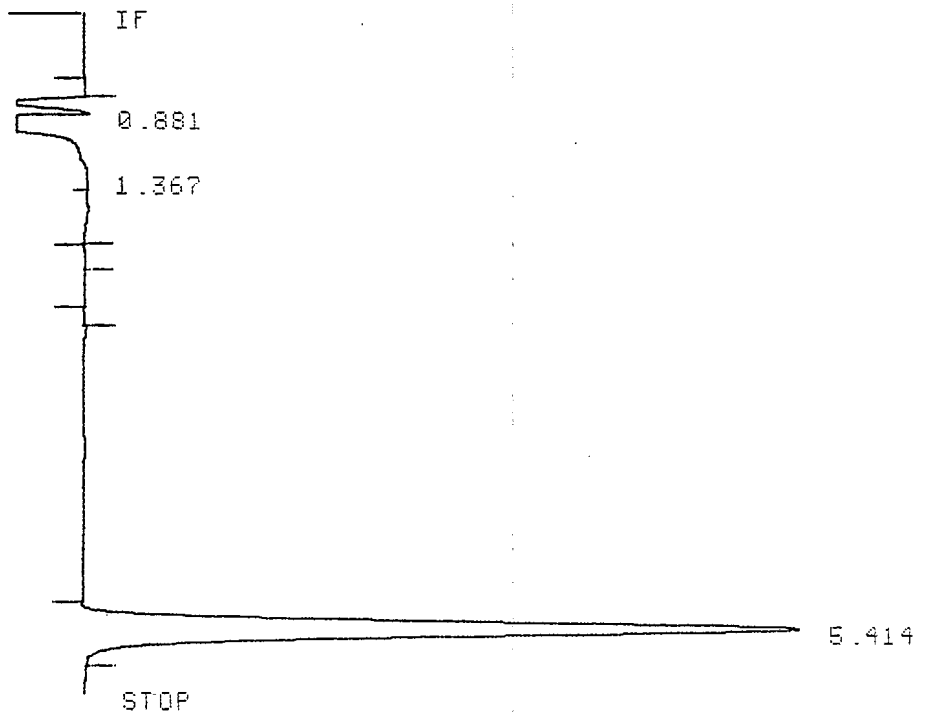
TOTAL AREA: 146557
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-01
REPORT MEMO: PH-01

* RUN # 8 APR 29, 1992 13:41:41
START



Closing signal file B:Q4752216.BNC

RUN# 8 APR 29, 1992 13:41:41

SAMPLE NAME: GW-01
PH-01

SIGNAL FILE: B:Q4752216.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.881	BP	11807	.058	3408			
1.367	PV	76557	.477	2675			
5.414	PB	183860	.154	19870	5R		REF. PEAK

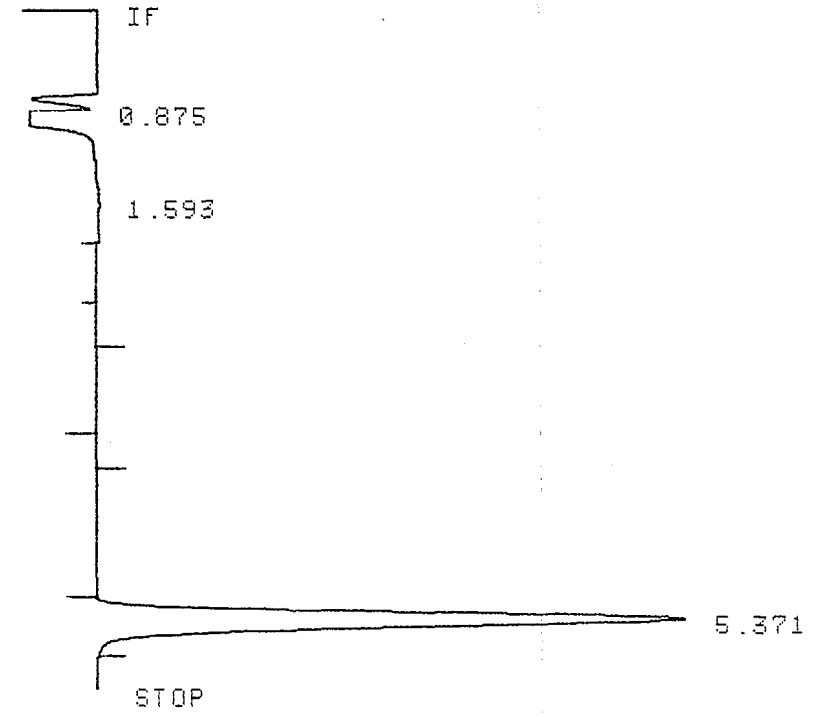
TOTAL AREA: 272224
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-02
REPORT MEMO: PH-02

* RUN # 9 APR 29, 1992 14:46:35
START



Closing signal file B:Q4753148.BNC

RUN# 9 APR 29, 1992 14:46:35

SAMPLE NAME: GW-02
PH-02

SIGNAL FILE: B:Q475314B.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.875	BP	9931	.065	2565			
1.593	PV	132814	.927	2387			
5.371	BB	148582	.151	16417	5R		REF. PEAK

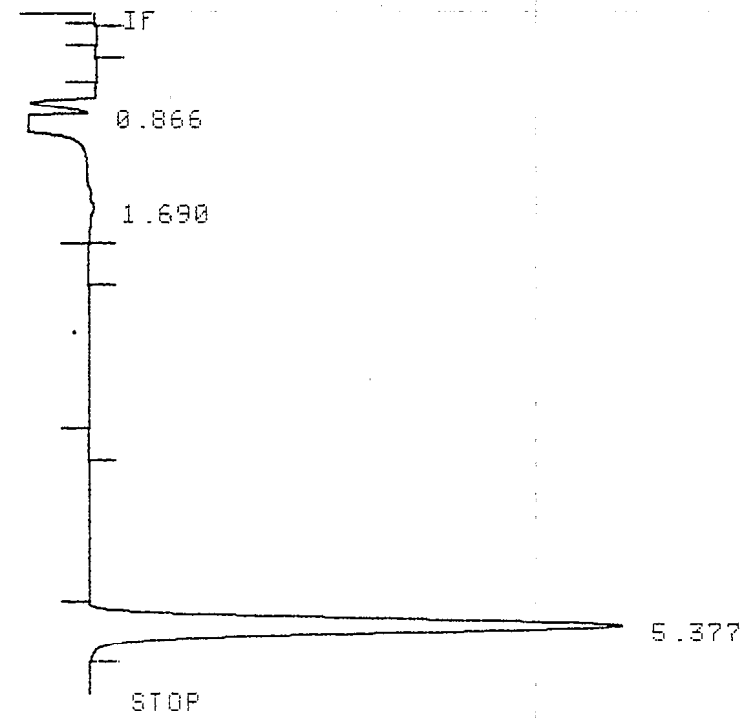
TOTAL AREA: 291327
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-03
REPORT MEMO: PH-03

* RUN # 11 APR 29, 1992 15:35:06
START



Closing signal file B:Q4753CAB.BNC

RUN# 11 APR 29, 1992 15:35:06

SAMPLE NAME: GW-03
PH-03

SIGNAL FILE: B:Q4753CAB.BNC

Burlington RECON[sm] Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.866	VP	10207	.066	2595			
1.690	PB	90402	1.23	1221			
5.377	BB	135434	.151	14926	SR		REF. PEAK

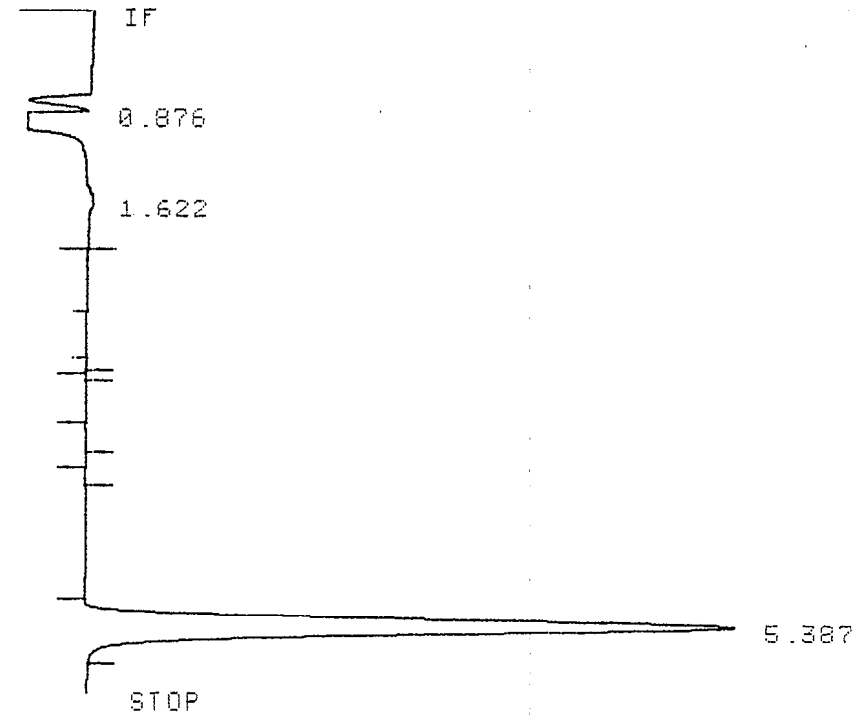
TOTAL AREA: 236043
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-04
REPORT MEMO: PH-04

* RUN # 12 APR 29, 1992 16:24:08
START



Closing signal file B:Q4754829.BNC

RUN# 12 APR 29, 1992 16:24:08

SAMPLE NAME: GW-04
PH-04

SIGNAL FILE: B:Q4754829.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.876	BP	10950	.065	2808			
1.622	PB	101990	1.06	1609			
5.387	PB	166333	.152	18199	5R		REF. PEAK

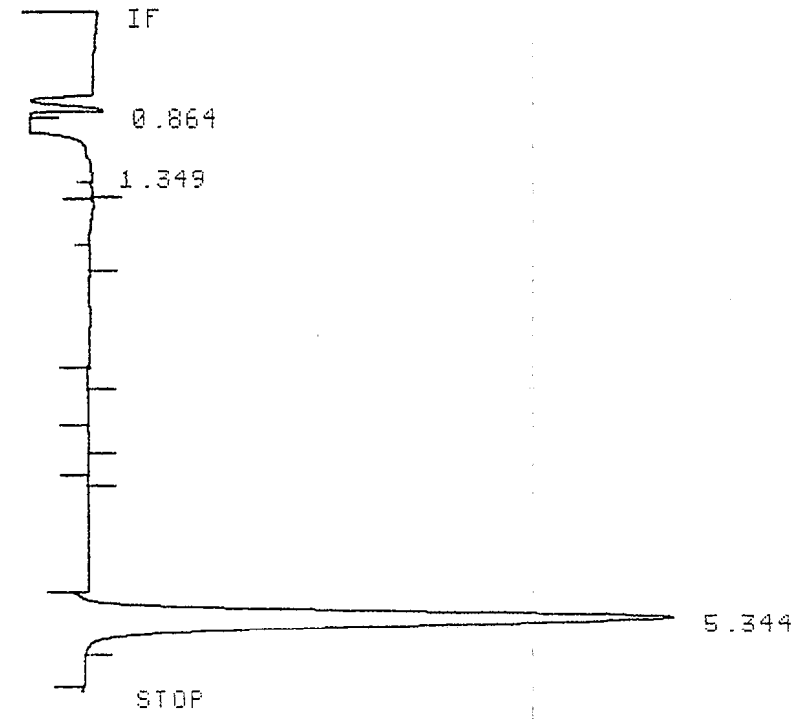
TOTAL AREA: 279273
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-05
REPORT MEMO: PH-05

* RUN # 13 APR 29, 1992 17:03:44
START



Closing signal file B:Q4755171.BNC

RUN# 13 APR 29, 1992 17:03:44

SAMPLE NAME: GW-05
PH-05

SIGNAL FILE: B:Q4755171.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.864	BB	11552	.062	3115			
1.349	PV	45741	.506	1506			
5.344	BB	153728	.153	16727	5R		REF. PEAK

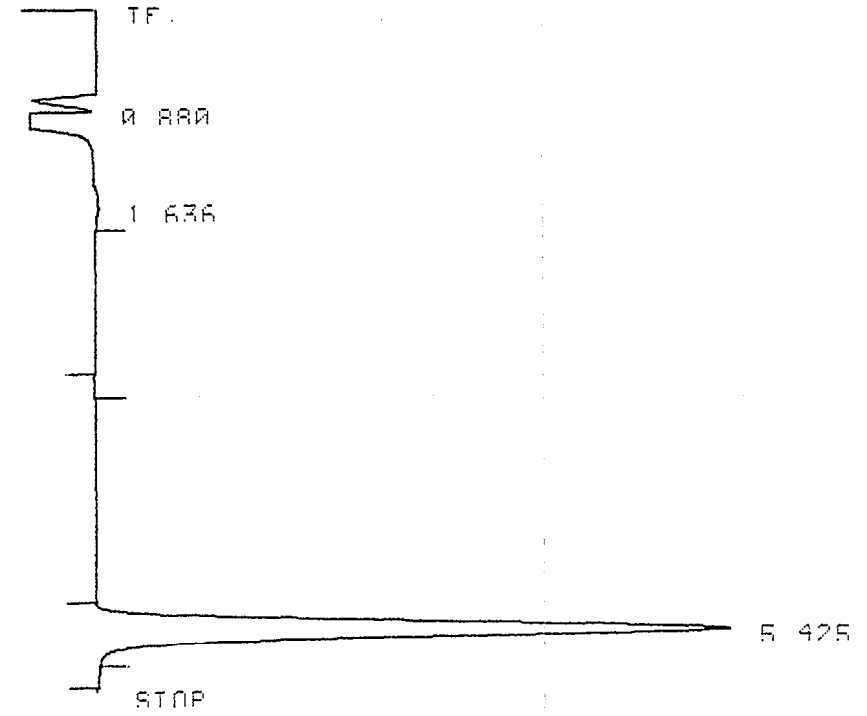
TOTAL AREA: 211021
MUL FACTOR: 1.00

```
*  OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0 0000E+00 ]:
SAMPLE AMT [0 0000E+00 ]:
MUL FACTOR [1 0000E+00 ]:
RECALIBRATION [Y/N*]:
NAME: GW-06
REPORT MEMO: PH-06

*  RUN # 14      APR 29, 1992  17:38:22
START
```




```
Closing signal file B:0475598F BNC
```

RUN# 14 APR 29, 1992 17:38:22

SAMPLE NAME: GW-06
PH-06

SIGNAL FILE: B:0475598F RNC

Burlington RECON SM Multimedia Analysis

FSTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL #	ug/l	NAME	
	880	BP	9440	064	2450				
1	636	PB	76539	1 20	1061				
5	425	PB	162916	154	17578	5B		REF	PEAK

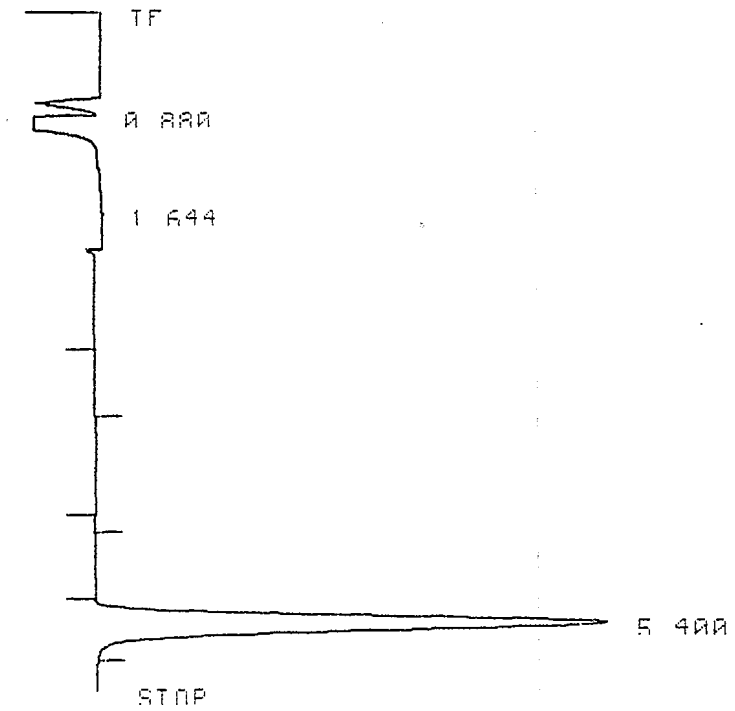
TOTAL AREA: 248895
MUL FACTOR: 1 00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0 0000E+00]:
SAMPLE AMT [0 0000E+00]:
MUL FACTOR [1 0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-060
REPORT MEMO: PH-06

* RUN # 15 APR 29, 1992 17:46:29
START



Closing signal file B:04755876 BNC

RUN# 15 APR 29, 1992 17:46:29

SAMPLE NAME: GW-060
PH-06

SIGNAL FILE: B:04755876 RNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL #	ug/l	NAME	
	880	BP	9484	070	2261				
1	644	PU	115317	974	1974				
5	400	BB	130302	152	14271	SB		REF	PEAK

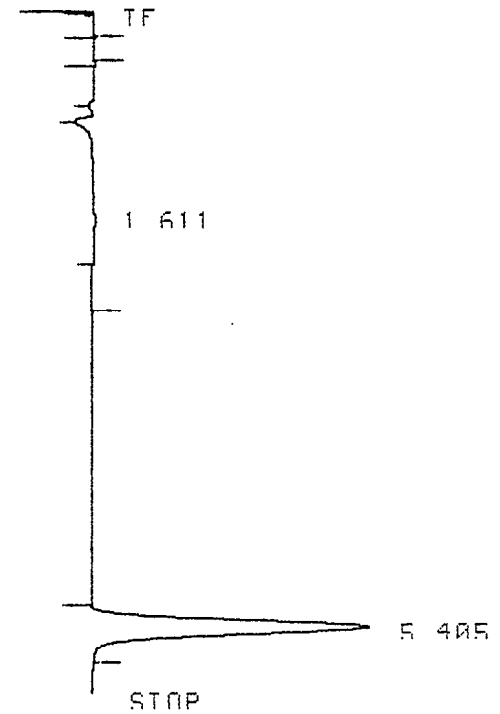
TOTAL AREA: 255103
MUL FACTOR: 1.00

```
*  OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0 0000E+00 ]:
SAMPLE AMT [0 0000E+00 ]:
MUL FACTOR [1 0000E+00 ]:
RECALIBRATION [Y/N*]:
NAME: BLANK-04
REPORT MEMO:

*  RUN #   16      APR 29, 1992  17:56:01
START
```




```
Closing signal file B:04755082 BNC
```

RUN# 16 APR 29, 1992 17:56:01

SAMPLE NAME: BLANK-04

STGNAL FILE: B:04755002 BNC

Burlington RECON SM Multimedia Analysis

FSTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL #	ug/l	NAME
1	611	PU	22880	1 05	363			
5	405	BB	68174	147	7736	5R		REF PEAK

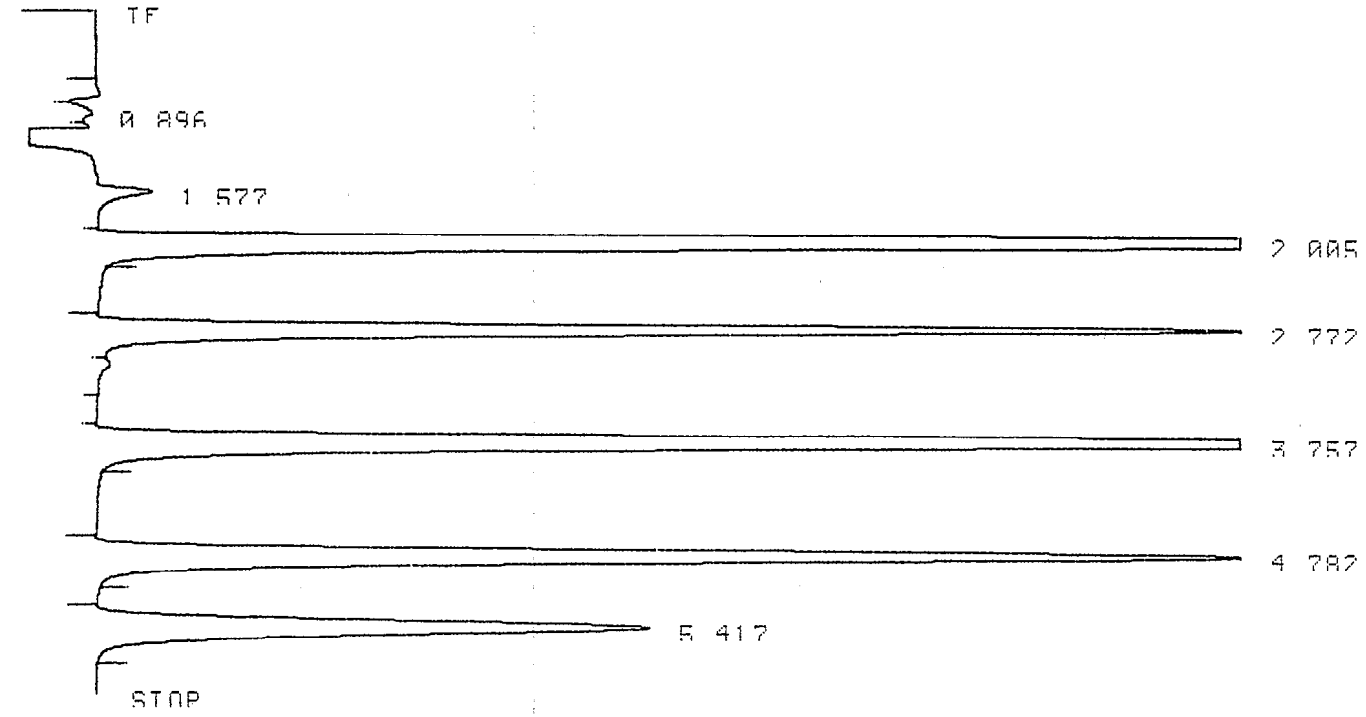
TOTAL AREA: 91054
MUL FACTOR: 1 00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0 0000E+00]:
SAMPLE AMT [0 0000E+00]:
MUL FACTOR [1 0000E+00]:
RECALIBRATION [Y/N*]:
NAME: RT-01
REPORT MEMO:

* RUN # 17 APR 29, 1992 18:03:20
START



Closing signal file B:04755F69 BNC

RUN# 17 APR 29, 1992 18:03:20

SAMPLE NAME: RT-01

STANAL FILE: B:04755F69 BNC

Burlington RECON SM Multimedia Analysis

FSTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL #	ug/l	NAME
	896	VV	18635	139	2239			
1	577	PV	89994	442	3393			
2	805	VB	475724	890	88457	1	91	TRANS-1,2-DCE
2	772	PV	197003	898	33383	2	75	CIS-1,2-DCE
3	757	PB	357588	114	52281	3	67	BENZENE
4	782	PB	244446	126	32283	4	85	TCE
5	417	BB	140069	150	15577	5B		REF PEAK
					GROUP	1	166	TOTAL DCE

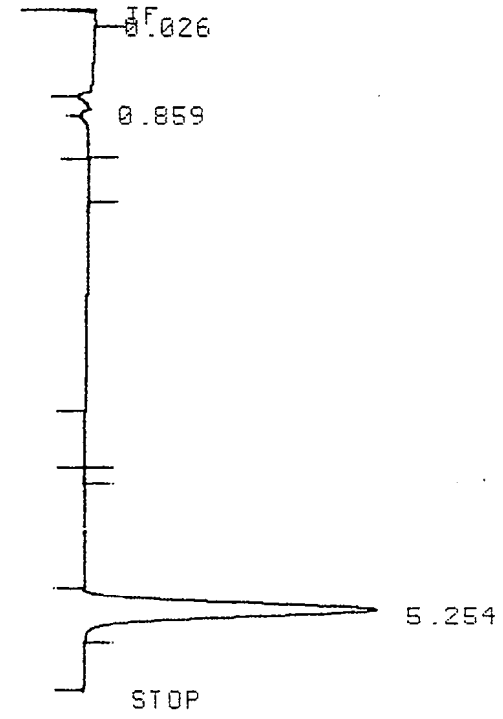
TOTAL AREA: 1523459
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

TSTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-05
REPORT MEMO:

* RUN # 18 APR 30, 1992 07:32:05
START



Closing signal file B:04761CF6.BNC

RUN# 18 APR 30, 1992 07:32:05

SAMPLE NAME: BLANK-05

SIGNAL FILE: B:Q4761CF6.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.026	PB	888	.057	259			
.859	BP	1507	.086	291			
5.254	BB	72630	.146	8270	5R		REF. PEAK

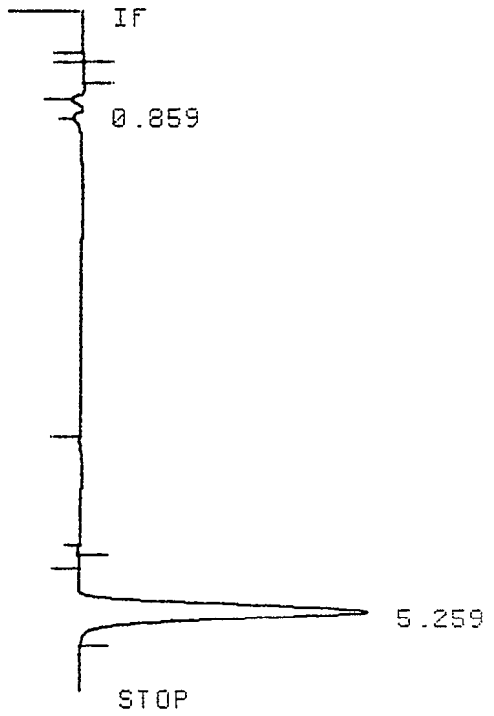
TOTAL AREA: 75025
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-06
REPORT MEMO:

* RUN # 20 APR 30, 1992 07:54:05
START



Closing signal file B:Q4762210.BNC

RUN# 20 APR 30, 1992 07:54:05

SAMPLE NAME: BLANK-06

SIGNAL FILE: B:Q4762210.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.859	BB	1596	.087	307			
5.259	PB	71892	.146	8201	5R		REF. PEAK

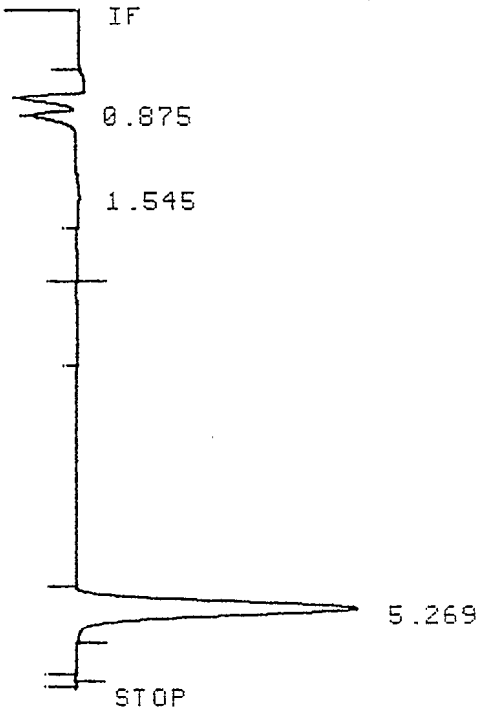
TOTAL AREA: 73488
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-07
REPORT MEMO: ROD BLANK

* RUN # 21 APR 30, 1992 08:01:15
START



Closing signal file B:Q47623CC.BNC

RUN# 21 APR 30, 1992 08:01:15

SAMPLE NAME: BLANK-07
ROD BLANK

SIGNAL FILE: B:Q47623CC.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.875	PV	7001	.086	1358			
1.545	VV	45229	.892	845			
5.269	BB	68258	.146	7808	5R		REF. PEAK

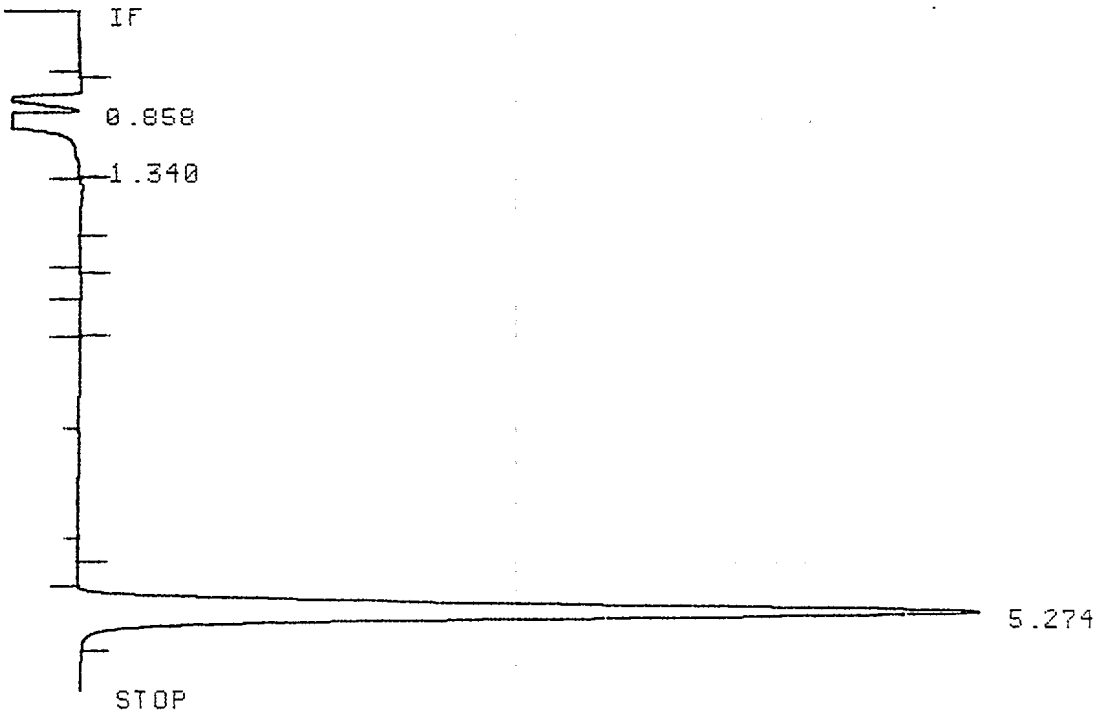
TOTAL AREA: 120488
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GGW-07
REPORT MEMO: PH-07

* RUN # 22 APR 30, 1992 08:12:28
START



Closing signal file B:Q476266D.BNC

RUN# 22 APR 30, 1992 08:12:28

SAMPLE NAME: GGW-07
PH-07

SIGNAL FILE: B:Q476266D.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.858	BP	10056	.058	2909			
1.340	PB	31249	.764	682			
5.274	BB	225496	.150	25121	5R		REF. PEAK

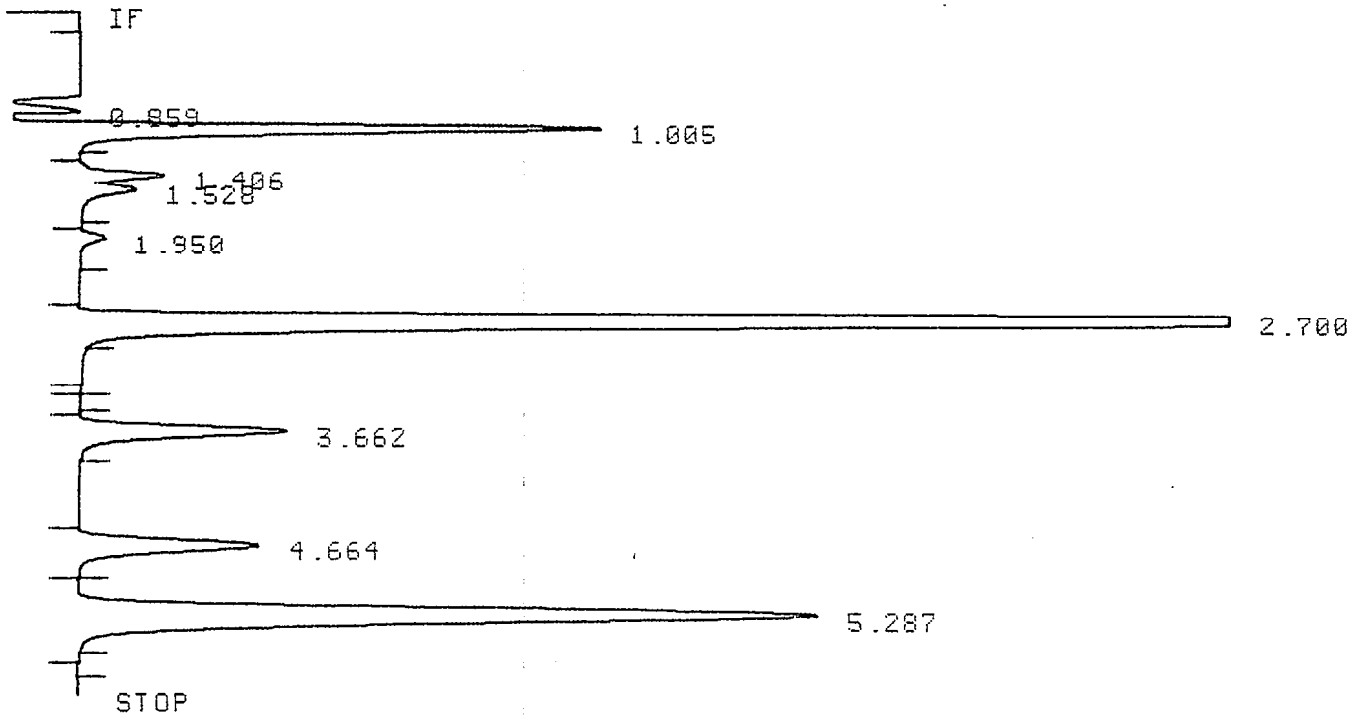
TOTAL AREA: 266801
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-08
REPORT MEMO: PH-08

* RUN # 23 APR 30, 1992 08:29:43
START



Closing signal file B:Q4762A78.BNC

RUN# 23 APR 30, 1992 08:29:43

SAMPLE NAME: GW-08
PH-08

SIGNAL FILE: B:Q4762A78.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.859	VP	14951	.077	3227			
1.005	PB	97580	.097	16702			
1.406	BV	12174	.087	2324			
1.528	VB	9035	.097	1549			
1.950	BB	3417	.082	698	1		TRANS-1,2-DCE
2.700	PB	428811	.099	71953	2	165	CIS-1,2-DCE
3.662	BB	39273	.114	5718	3	8	BENZENE
4.664	BB	37912	.126	5009	4	13	TCE
5.287	BB	186383	.151	20622	5R		REF. PEAK
				GROUP	1	166	TOTAL DCE

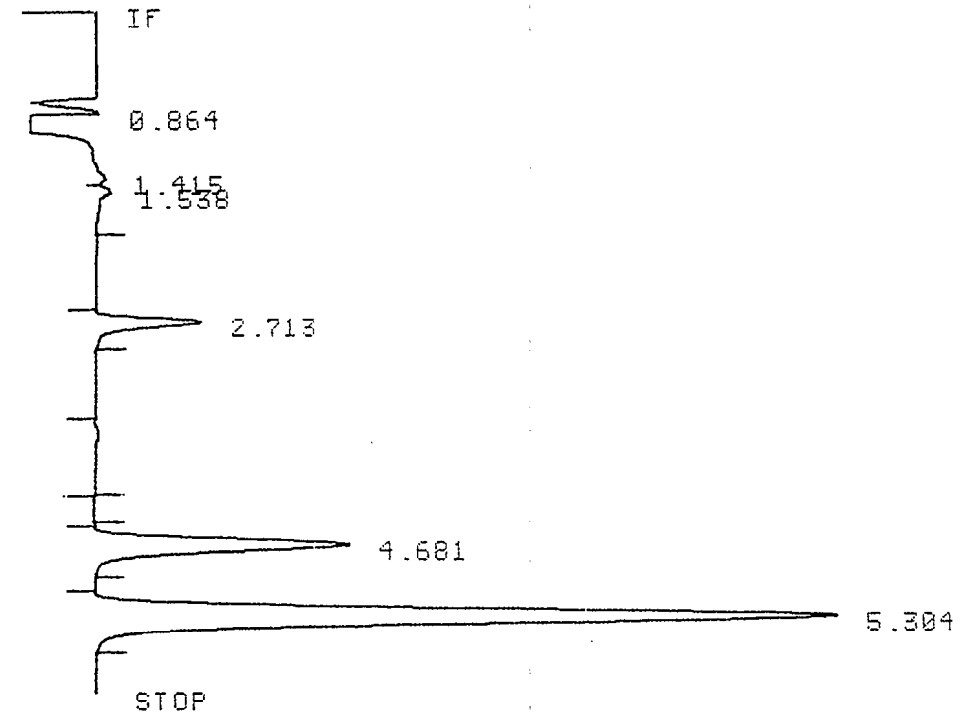
TOTAL AREA: 829536
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-09
REPORT MEMO: PH-09

* RUN # 25 APR 30, 1992 09:42:38
START



Closing signal file B:Q4763B8F.BNC

RUN# 25 APR 30, 1992 09:42:38

SAMPLE NAME: GW-09
PH-09

SIGNAL FILE: B:Q4763B8F.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.864	BP	9775	.062	2611			
1.415	PV	60171	.511	1962			
1.538	VB	23109	.226	1705			
2.713	BB	17133	.098	2900	2	7	CIS-1,2-DCE
4.681	BB	54333	.126	7182	4	18	TCE
5.304	PB	184470	.149	20588	5R		REF. PEAK
				GROUP	1	7	TOTAL DCE

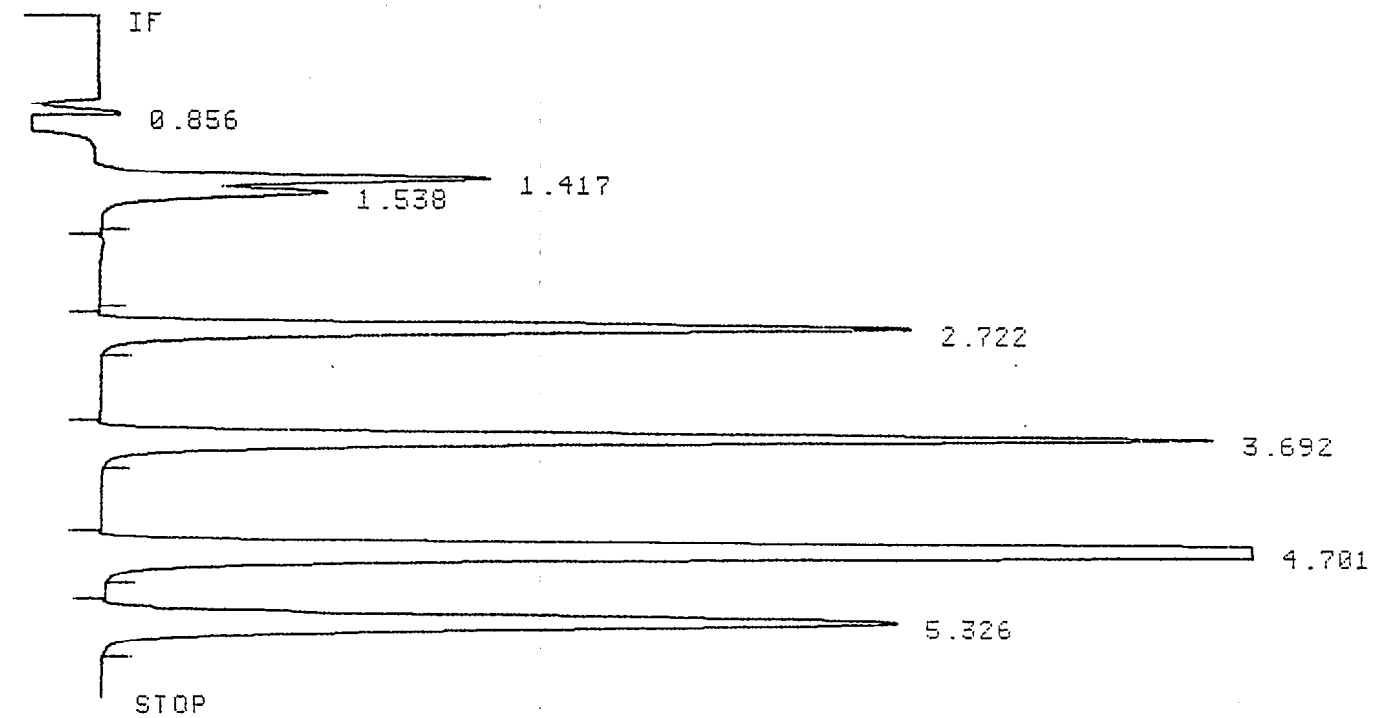
TOTAL AREA: 348991
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-10
REPORT MEMO: PH-10

* RUN # 26 APR 30, 1992 10:04:32
START



Closing signal file B:Q47640B1.BNC

RUN# 26 APR 30, 1992 10:04:32

SAMPLE NAME: GW-10
PH-10

SIGNAL FILE: B:Q47640B1.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.856	BP	11936	.063	3171			
1.417	PV	115234	.155	12363			
1.538	VB	50884	.113	7482			
2.722	PB	137324	.102	22522	2	53	CIS-1,2-DCE
3.692	PB	216937	.117	30908	3	42	BENZENE
4.701	PB	443593	.129	57531	4	148	TCE
5.326	PB	199487	.151	22016	5R		REF. PEAK
				GROUP	1	53	TOTAL DCE

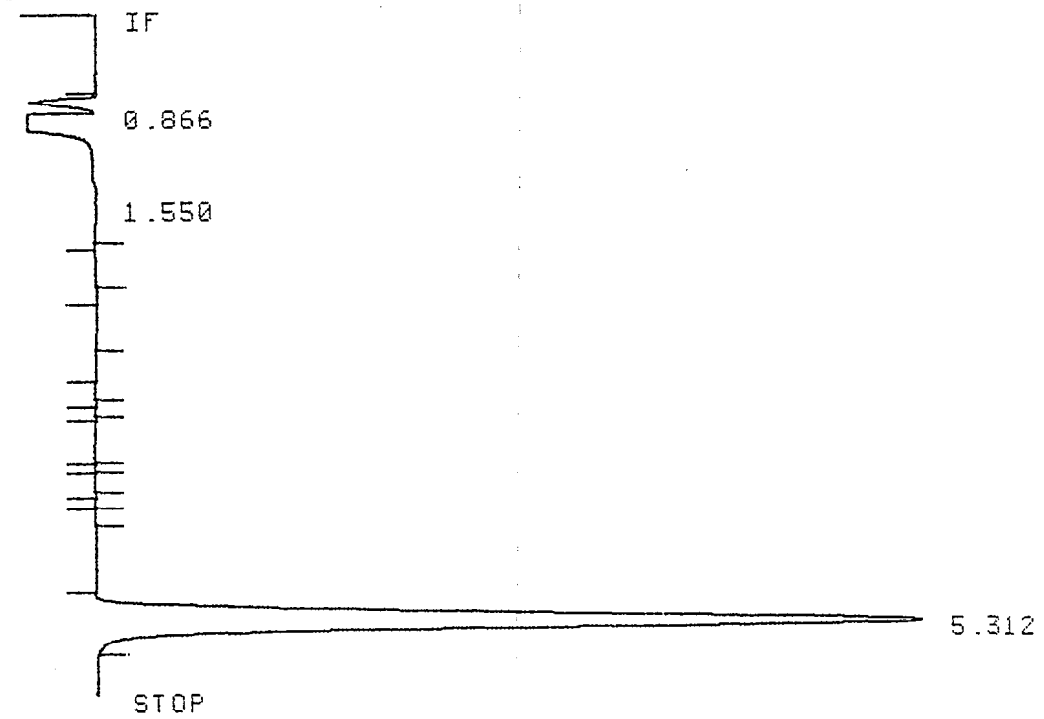
TOTAL AREA: 1175395
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-11
REPORT MEMO: PH-11

* RUN # 27 APR 30, 1992 10:35:01
START



Closing signal file B:Q47647D6.BNC

RUN# 27 APR 30, 1992 10:35:01

SAMPLE NAME: GW-11
PH-11

SIGNAL FILE: B:Q47647D6.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.866	UP	9768	.062	2610			
1.550	PB	82957	.967	1430			
5.312	PB	204844	.149	22914	5R		REF. PEAK

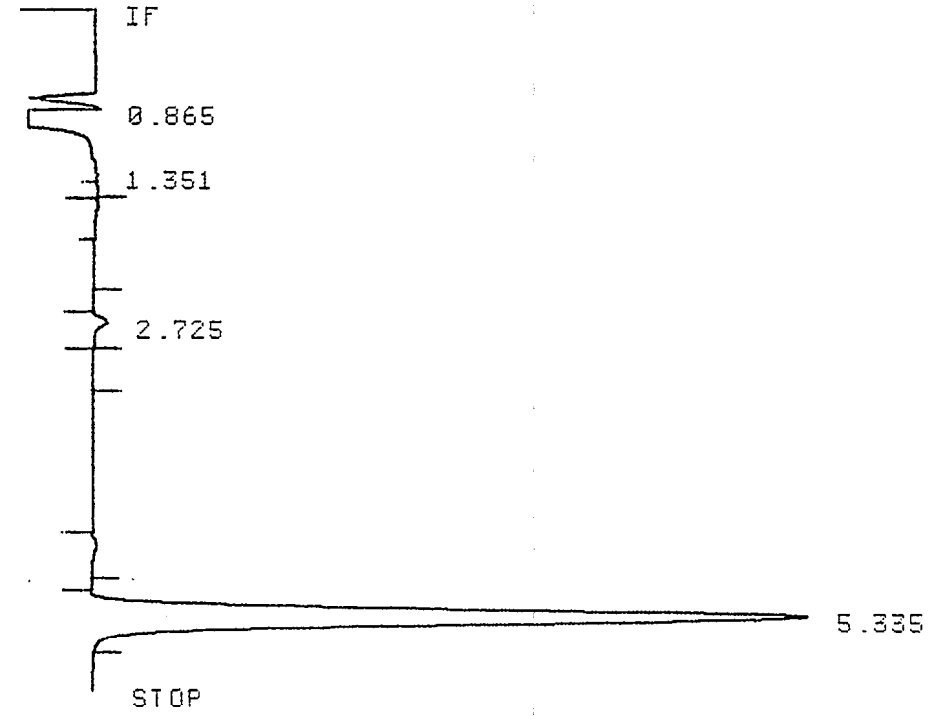
TOTAL AREA: 297569
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-12
REPORT MEMO: PH-12

* RUN # 28 APR 30, 1992 11:24:33
START



Closing signal file B:Q4765372.BNC

RUN# 28 APR 30, 1992 11:24:33

SAMPLE NAME: GW-12
PH-12

SIGNAL FILE: B:Q4765372.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.865	BP	9924	.062	2658			
1.351	PV	44029	.531	1381			
2.725	BB	2120	.094	374	2		CIS-1,2-DCE
5.335	PB	179413	.150	19913	5R		REF. PEAK

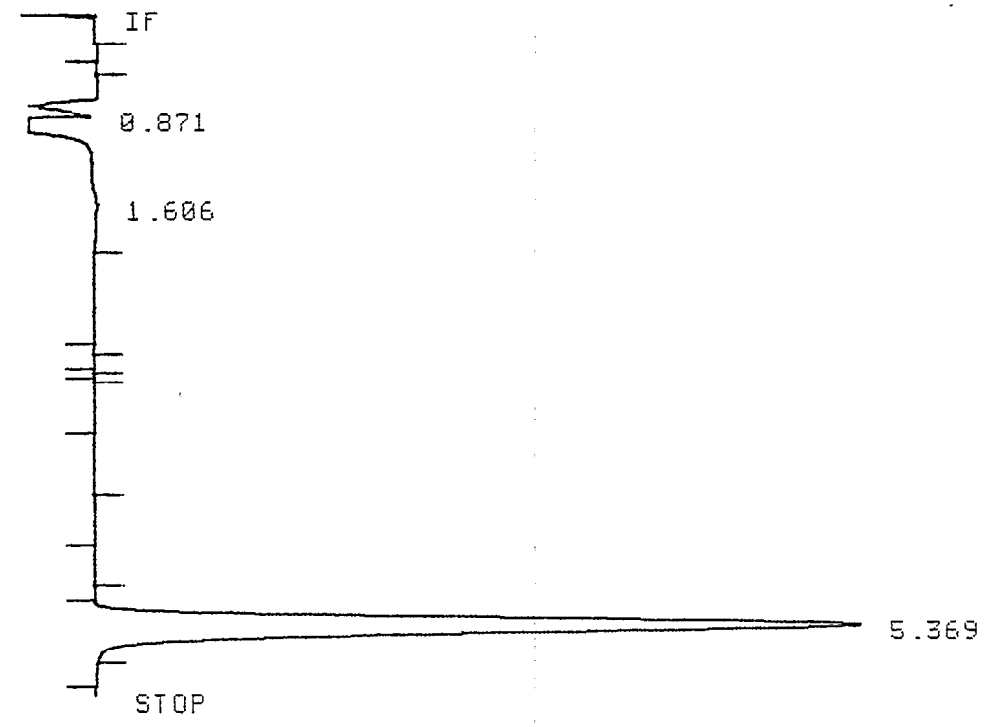
TOTAL AREA: 235486
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-13
REPORT MEMO: PG▒▒PH-13

* RUN # 29 APR 30, 1992 13:15:26
START



Closing signal file B:Q4766D6F.BNC

RUN# 29 APR 30, 1992 13:15:26

SAMPLE NAME: GW-13
PH-13

SIGNAL FILE: B:Q4766D6F.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.871	BP	8779	.060	2440			
1.606	PB	90542	1.08	1395			
5.369	PB	193590	.151	21331	5R		REF. PEAK

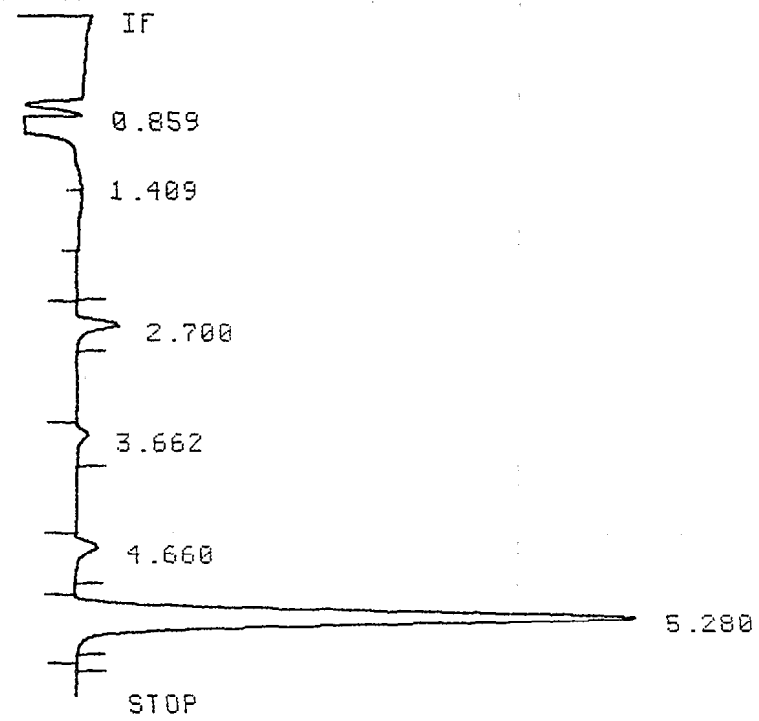
TOTAL AREA: 292911
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-14
REPORT MEMO: PH-14

* RUN # 30 APR 30, 1992 15:02:28
START



Closing signal file B:Q4768685.BNC

RUN# 30 APR 30, 1992 15:02:28

SAMPLE NAME: GW-14
PH-14

SIGNAL FILE: B:Q4768685.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.859	BP	10308	.064	2672			
1.409	PV	72338	.501	2405			
2.700	BB	6940	.101	1149	2	3	CIS-1,2-DCE
3.662	BB	2327	.118	328	3		BENZENE
4.660	BB	4585	.125	609	4	2	TCE
5.280	BB	139670	.149	15582	5R		REF. PEAK
				GROUP	1	3	TOTAL DCE

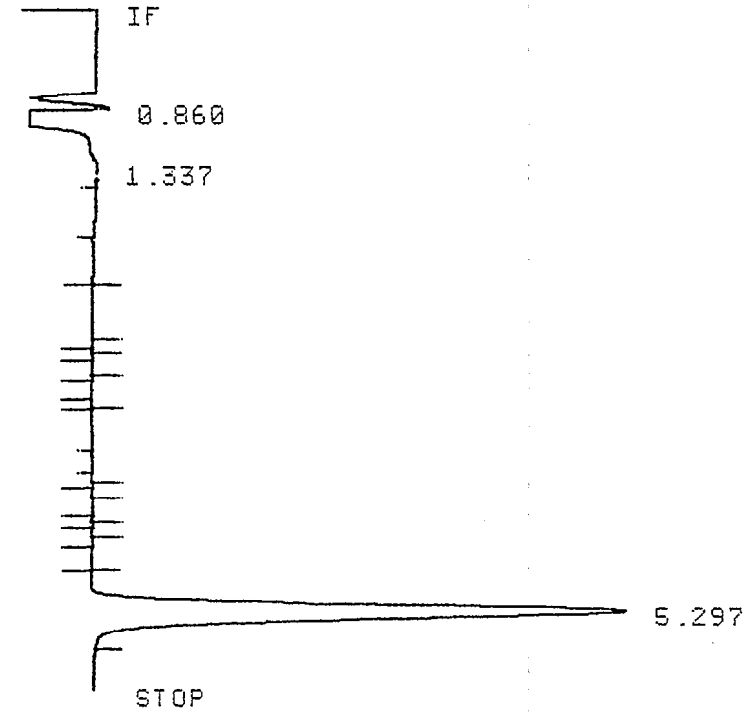
TOTAL AREA: 236168
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-15
REPORT MEMO: PH-15

* RUN # 31 APR 30, 1992 15:40:03
START



Closing signal file B:Q4768F54.BNC

RUN# 31 APR 30, 1992 15:40:03

SAMPLE NAME: GW-15
PH-15

SIGNAL FILE: B:Q4768F54.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.860	BP	10254	.059	2900			
1.337	PV	68921	.468	2455			
5.297	PB	135791	.152	14880	5R		REF. PEAK

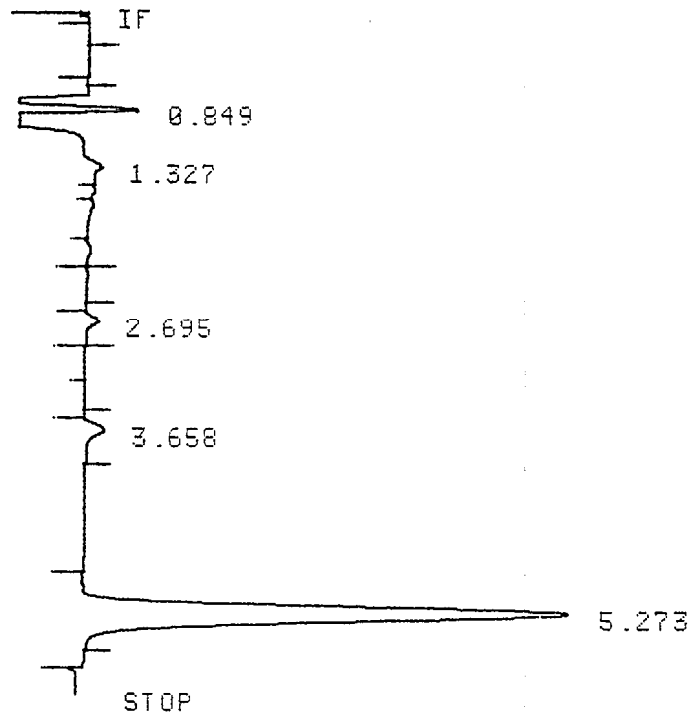
TOTAL AREA: 214966
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-16
REPORT MEMO: PH-16

* RUN # 32 APR 30, 1992 16:57:54
START



Closing signal file B:Q476A193.BNC

RUN# 32 APR 30, 1992 16:57:54

SAMPLE NAME: GW-16
PH-16

SIGNAL FILE: B:Q476A193.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.849	BP	15704	.060	4386			
1.327	PV	73346	.444	2754			
2.695	BB	2064	.092	375	2		CIS-1,2-DCE
3.658	BB	4209	.121	582	3		BENZENE
5.273	PB	123300	.151	13629	5R		REF. PEAK

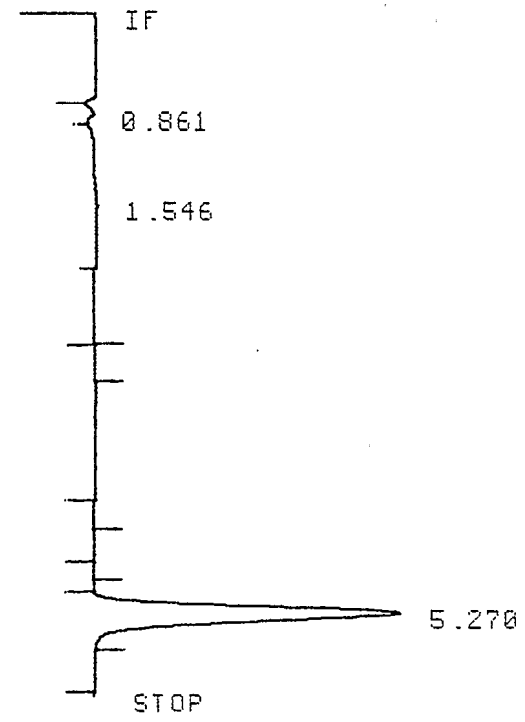
TOTAL AREA: 218623
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-08
REPORT MEMO:

* RUN # 33 APR 30, 1992 17:05:41
START



Closing signal file B:Q476A366.BNC

RUN# 33 APR 30, 1992 17:05:41

SAMPLE NAME: BLANK-08

SIGNAL FILE: B:Q476A366.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.861	BV	1538	.092	278			
1.546	VV	13071	.825	264			
5.270	BB	76670	.150	8531	5R		REF. PEAK

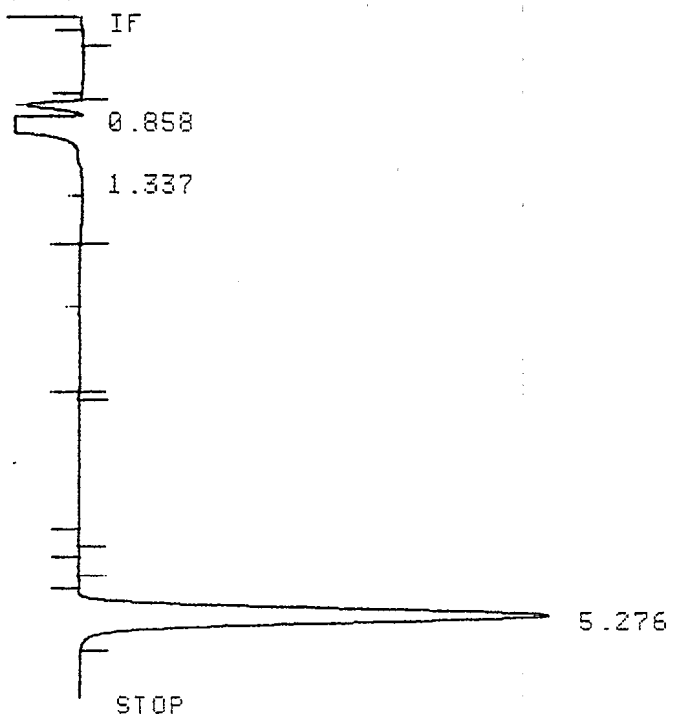
TOTAL AREA: 91279
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-17
REPORT MEMO: PH-17

* RUN # 34 APR 30, 1992 17:15:13
START



Closing signal file B:Q476A5A2.BNC

RUN# 34 APR 30, 1992 17:15:13

SAMPLE NAME: GW-17
PH-17

SIGNAL FILE: B:Q476A5A2.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.858	BP	7926	.056	2346			
1.337	PV	54045	.482	1867			
5.276	PB	117639	.149	13191	5R		REF. PEAK

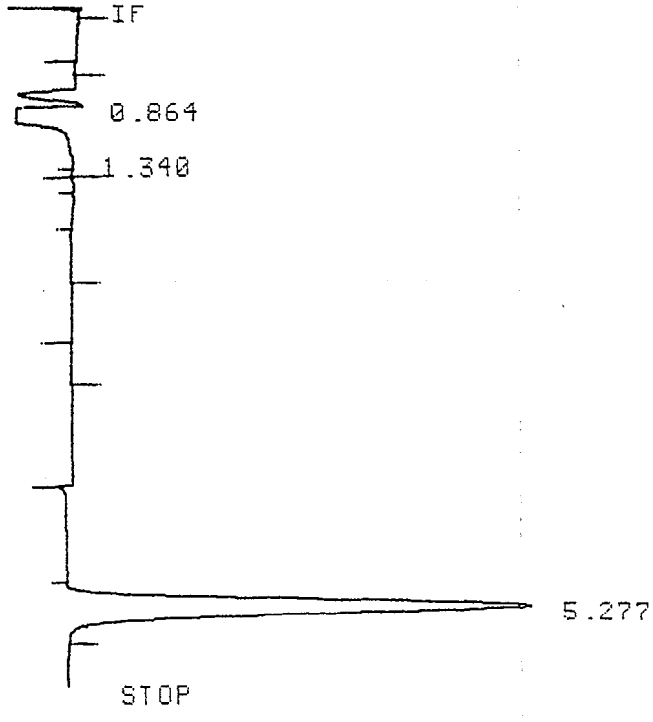
TOTAL AREA: 179610
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-18
REPORT MEMO: PH-18

* RUN # 35 APR 30, 1992 17:43:56
START



Closing signal file B:Q476AC5D.BNC

RUN# 35 APR 30, 1992 17:43:56

SAMPLE NAME: GW-18
PH-18

SIGNAL FILE: B:Q476AC5D.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.864	BP	10166	.064	2654			
1.340	PV	33402	.633	880			
5.277	VB	117236	.149	13086	5R		REF. PEAK

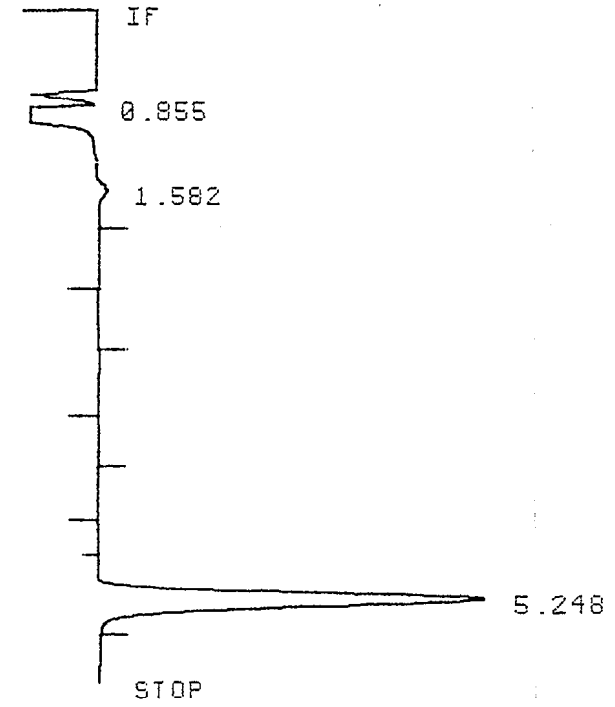
TOTAL AREA: 160804
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-19
REPORT MEMO: PH-19

* RUN # 36 APR 30, 1992 18:15:00
START



Closing signal file B:Q476B3A5.BNC

RUN# 36 APR 30, 1992 18:15:00

SAMPLE NAME: GW-19
PH-19

SIGNAL FILE: B:Q476B3A5.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.855	BP	7383	.056	2181			
1.582	PB	72450	.921	1311			
5.248	PB	96764	.148	10902	5R		REF. PEAK

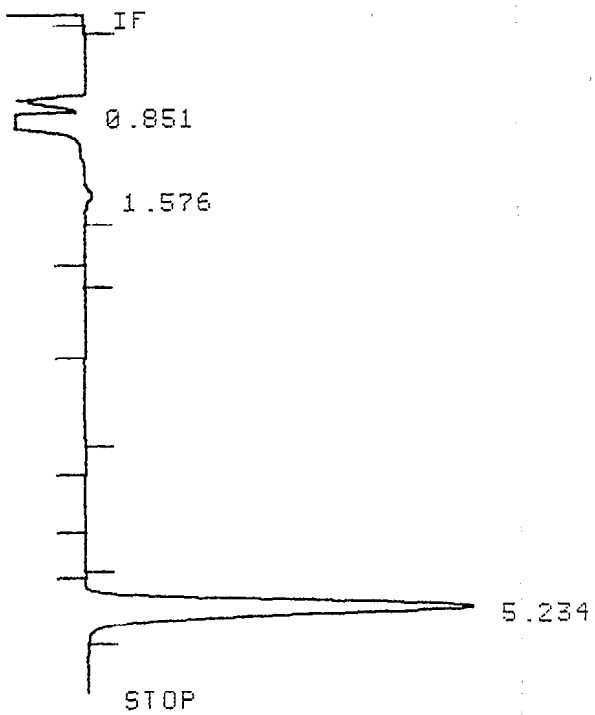
TOTAL AREA: 176597
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: AREA A-1
REPORT MEMO: WE;▒▒▒▒WELL WATER

* RUN # 37 APR 30, 1992 18:26:24
START



Closing signal file B:Q476B651.BNC

RUN# 37 APR 30, 1992 18:26:24

SAMPLE NAME: AREA A-1
WELL WATER

SIGNAL FILE: B:Q476B651.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.851	BP	7199	.056	2131			
1.576	PB	66538	1.00	1108			
5.234	PB	97348	.150	10806	5R		REF. PEAK

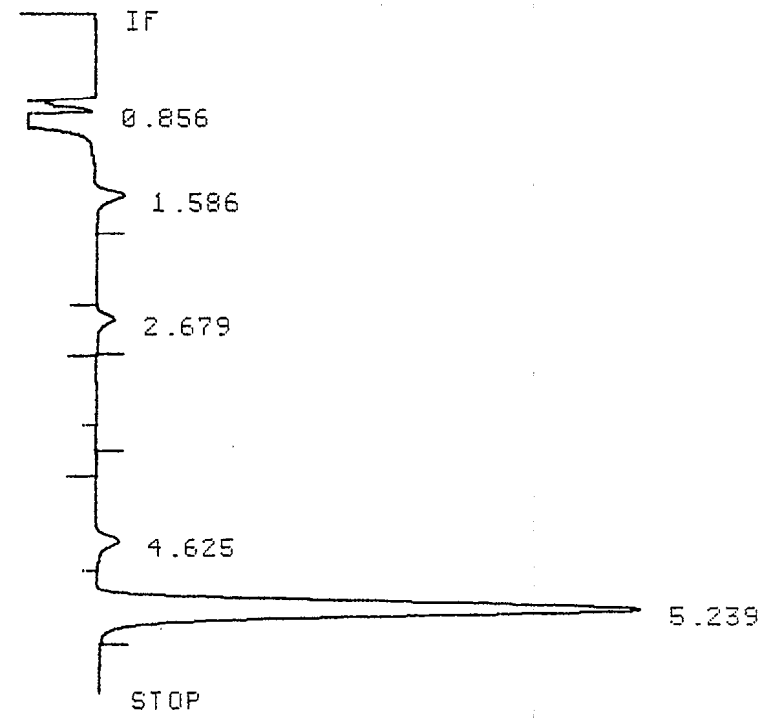
TOTAL AREA: 171085
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-20
REPORT MEMO: PH-20

* RUN # 38 APR 30, 1992 18:40:24
START



Closing signal file B:Q476B999.BNC

RUN# 38 APR 30, 1992 18:40:24

SAMPLE NAME: GW-20
PH-20

SIGNAL FILE: B:Q476B999.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.856	BP	7427	.059	2110			
1.586	PB	73264	.695	1757			
2.679	BB	3409	.111	512	2	1	CIS-1,2-DCE
4.625	PP	4552	.125	605	4	2	TCE
5.239	PB	134740	.148	15185	5R		REF. PEAK
				GROUP	1	1	TOTAL DCE

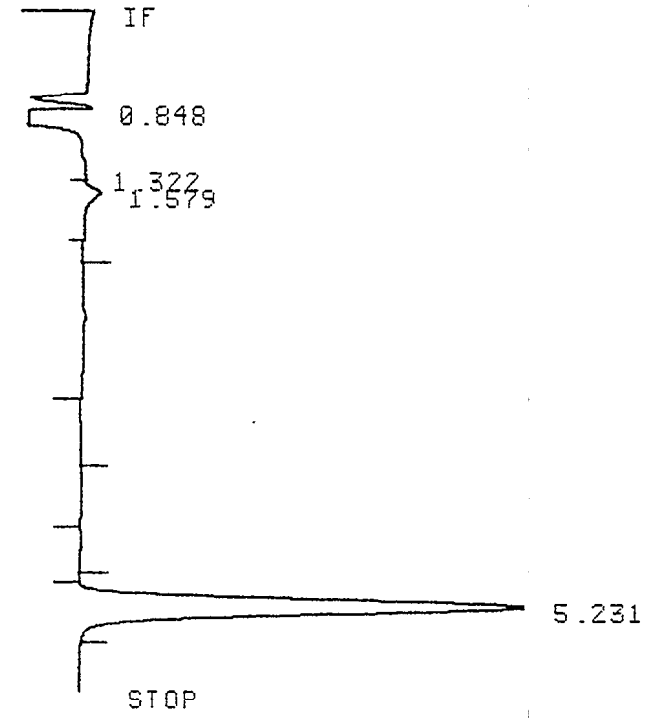
TOTAL AREA: 223392
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-21
REPORT MEMO: PH-21

* RUN # 39 APR 30, 1992 19:45:50
START



Closing signal file B:Q476C8EF.BNC

RUN# 39 APR 30, 1992 19:45:50

SAMPLE NAME: GW-21
PH-21

SIGNAL FILE: B:Q476C8EF.BNC

Burlington RECON 3m Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.848	BP	8873	.060	2459			
1.322	PV	57025	.474	2004			
1.579	VV	33874	.305	1852			
5.231	BB	111447	.150	12353	5R		REF. PEAK

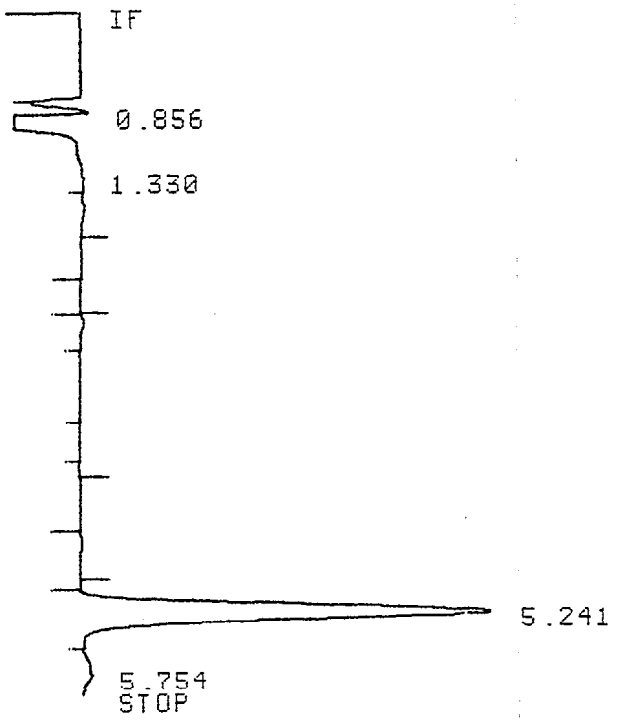
TOTAL AREA: 211219
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-21D
REPORT MEMO: PH-21

* RUN # 40 APR 30, 1992 19:54:56
START



Closing signal file B:Q476CB10.BNC

RUN# 40 APR 30, 1992 19:54:56

SAMPLE NAME: GW-21D
PH-21

SIGNAL FILE: B:Q476CB10.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.856	BP	8634	.062	2329			
1.330	PV	50612	.495	1705			
5.241	BV	103614	.149	11623	5R		REF. PEAK
5.754 I	VH	5469	.260	350			

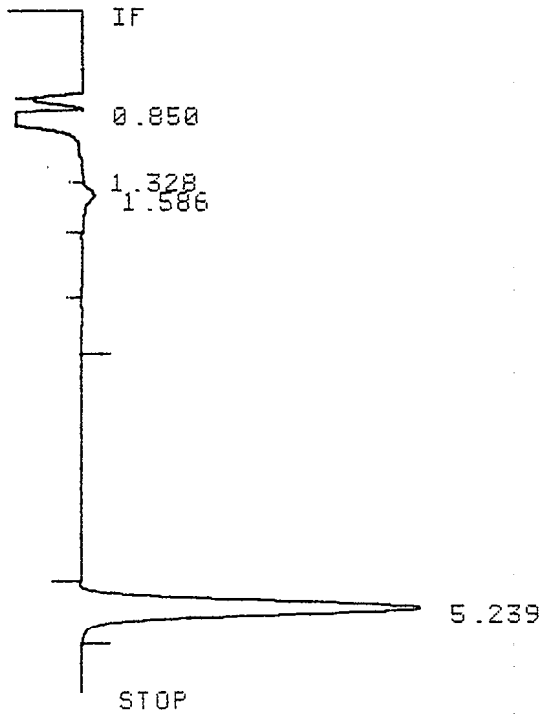
TOTAL AREA: 168329
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-22
REPORT MEMO: PH-22

* RUN # 41 APR 30, 1992 20:10:17
START



Closing signal file B:Q476CEAA.BNC

RUN# 41 APR 30, 1992 20:10:17

SAMPLE NAME: GW-22
PH-22

SIGNAL FILE: B:Q476CEAA.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.850	BP	7687	.058	2210			
1.328	PV	61485	.439	2332			
1.586	VV	50911	.371	2288			
5.239	PB	86256	.150	9581	5R		REF. PEAK

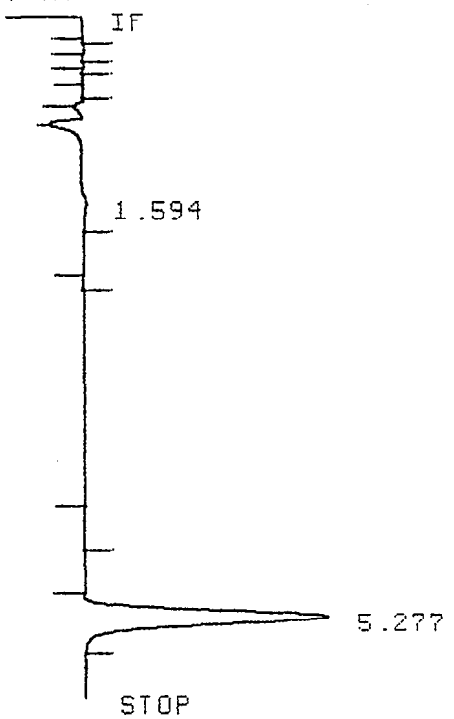
TOTAL AREA: 206339
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-09
REPORT MEMO:

* RUN # 42 APR 30, 1992 20:22:16
START



Closing signal file B:Q476D179.BNC

RUN# 42 APR 30, 1992 20:22:16

SAMPLE NAME: BLANK-09
PH-22

SIGNAL FILE: B:Q4760179.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
1.594	PB	22823	1.01	377			
5.277	PB	59833	.146	6853	5R		REF. PEAK

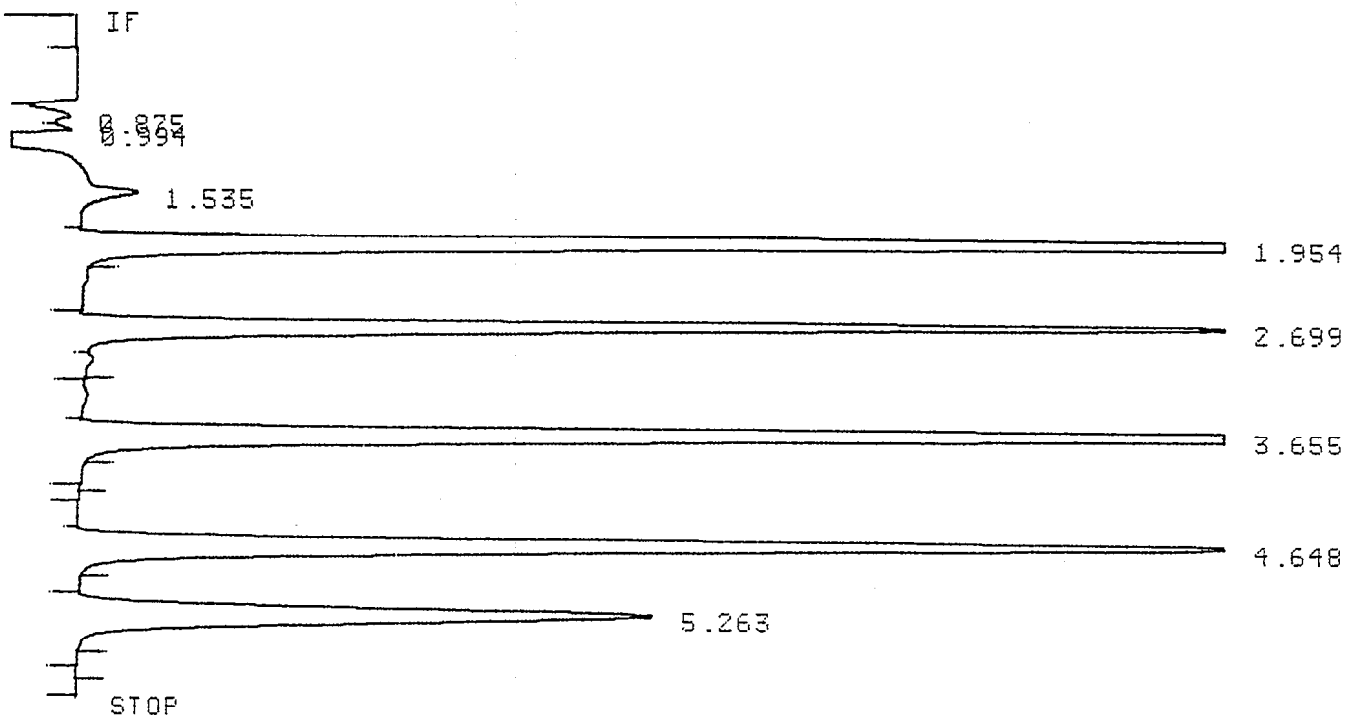
TOTAL AREA: 82656
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: RT-02
REPORT MEMO:

* RUN # 43 APR 30, 1992 20:36:27
START



Closing signal file B:Q47604CC.BNC

RUN# 43 APR 30, 1992 20:36:27

SAMPLE NAME: RT-02

SIGNAL FILE: B:Q476D4CC.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.875	BV	10952	.104	1755			
.994	VP	10084	.069	2426			
1.535	PV	77456	.392	3297			
1.954	VB	400186	.090	73764	1	92	TRANS-1,2-DCE
2.699	PV	194352	.097	33565	2	75	CIS-1,2-DCE
3.655	PB	348715	.112	51887	3	67	BENZENE
4.648	PB	248537	.124	33405	4	83	TCE
5.263	BB	141142	.147	15986	5R		REF. PEAK
				GROUP	1	167	TOTAL DCE

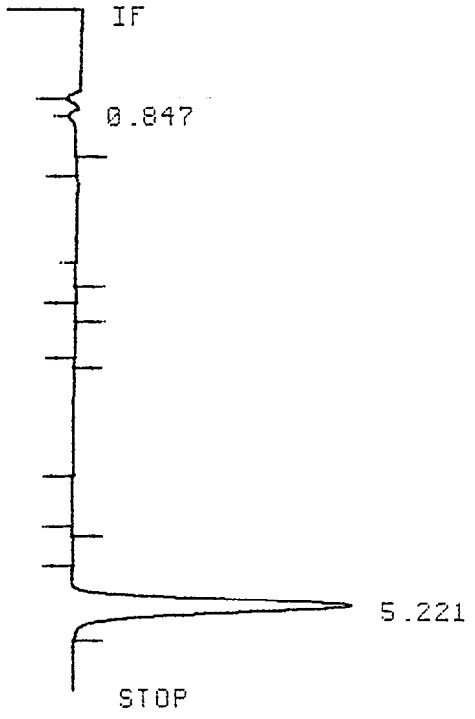
TOTAL AREA: 1431424
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-10
REPORT MEMO:

* RUN # 44 MAY 1, 1992 05:31:22
START



Closing signal file B:Q478A3AB.BNC

RUN# 44 MAY 1, 1992 05:31:22

SAMPLE NAME: BLANK-10

SIGNAL FILE: B:Q478A3AB.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.847	BP	1484	.080	308			
5.221	PB	70025	.150	7775	5R		REF. PEAK

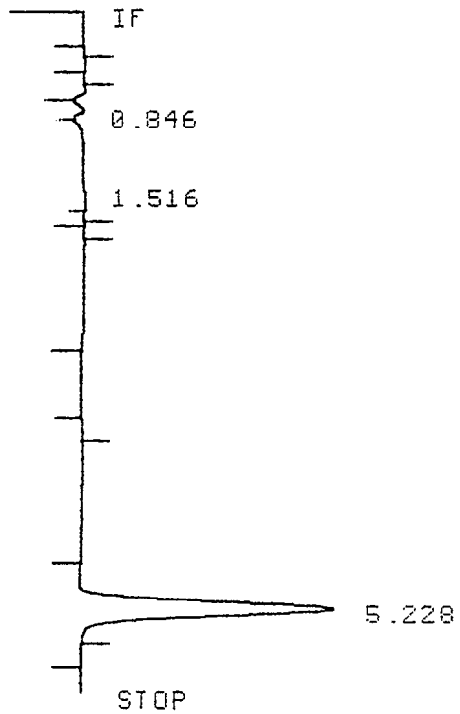
TOTAL AREA: 71509
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-11
REPORT MEMO:

* RUN # 46 MAY 1, 1992 06:04:09
START



Closing signal file B:Q478AB5A.BNC

RUN# 46 MAY 1, 1992 06:04:09

SAMPLE NAME: BLANK-11

SIGNAL FILE: B:Q478AB5A.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.846	BP	1561	.079	331			
1.516	PV	7625	.784	162			
5.228	PB	64126	.150	7124	5R		REF. PEAK

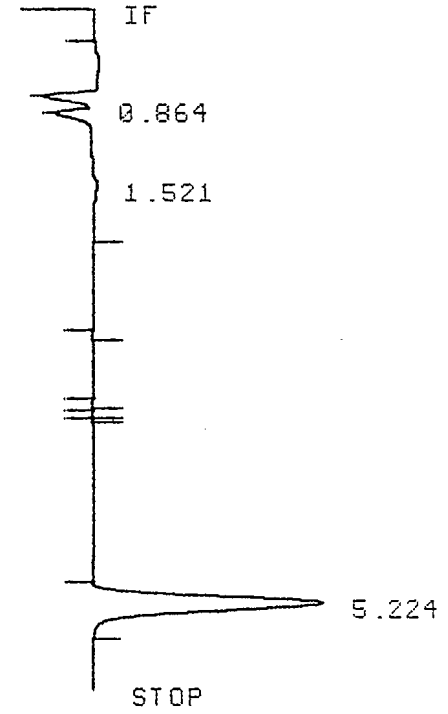
TOTAL AREA: 73312
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-12
REPORT MEMO:

* RUN # 47 MAY 1, 1992 06:11:27
START



Closing signal file B:Q478AD10.BNC

RUN# 47 MAY 1, 1992 06:11:27

SAMPLE NAME: BLANK-12

SIGNAL FILE: B:Q478AD10.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.864	PV	5670	.083	1145			
1.521	VB	38541	.938	685			
5.224	BB	56461	.146	6430	5R		REF. PEAK

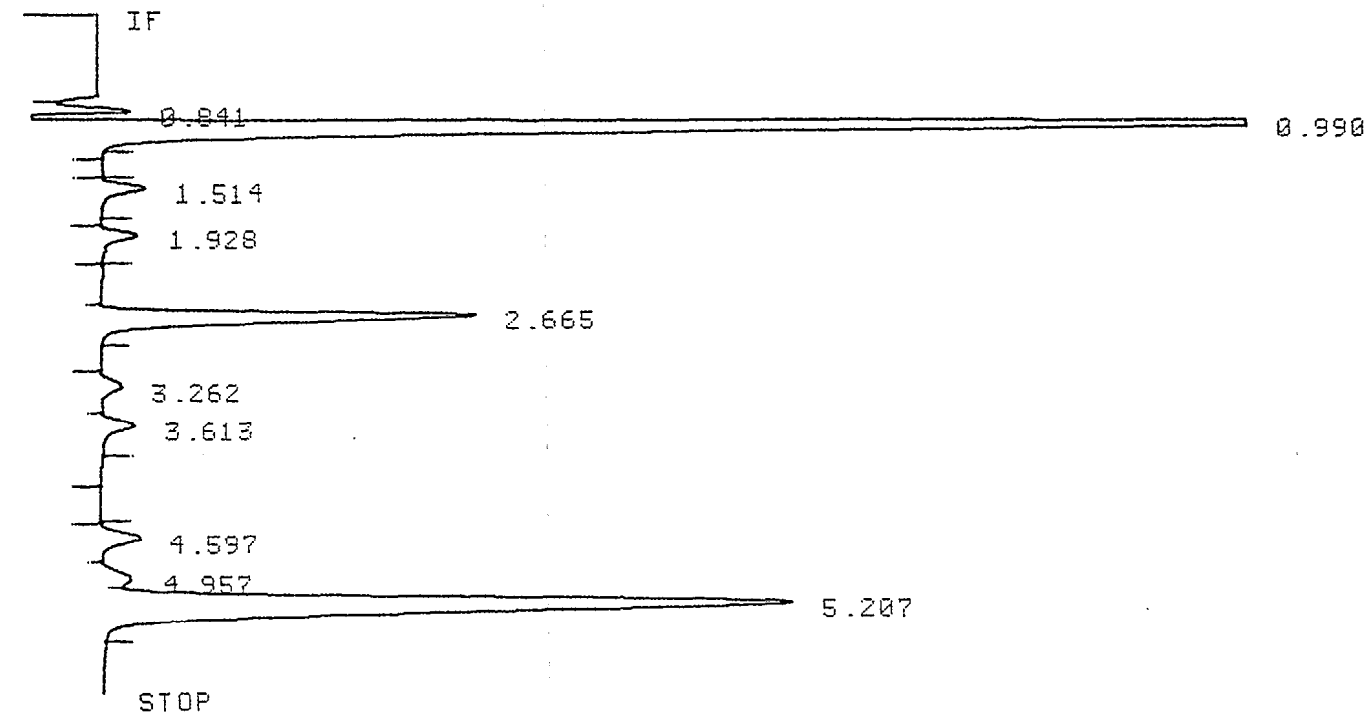
TOTAL AREA: 100672
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-23
REPORT MEMO: PH-23

* RUN # 48 MAY 1, 1992 06:23:13
START



Closing signal file B:Q478AFD2.BNC

RUN# 48 MAY 1, 1992 06:23:13

SAMPLE NAME: GW-23
PH-23

SIGNAL FILE: B:Q478AFD2.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.841	BP	10566	.061	2872			
.990	PB	253552	.092	45994			
1.514	BB	6478	.090	1204			
1.928	BB	5699	.094	1014	1	1	TRANS-1,2-DCE
2.665	PB	63334	.101	10415	2	25	CIS-1,2-DCE
3.262	PP	4570	.124	614			
3.613	PB	6404	.117	913	3	1	BENZENE
4.597	BP	8255	.124	1108	4	3	TCE
4.957	PV	6669	.132	841			
5.207	VB	174133	.151	19239	5R		REF. PEAK
				GROUP	1	26	TOTAL DCE

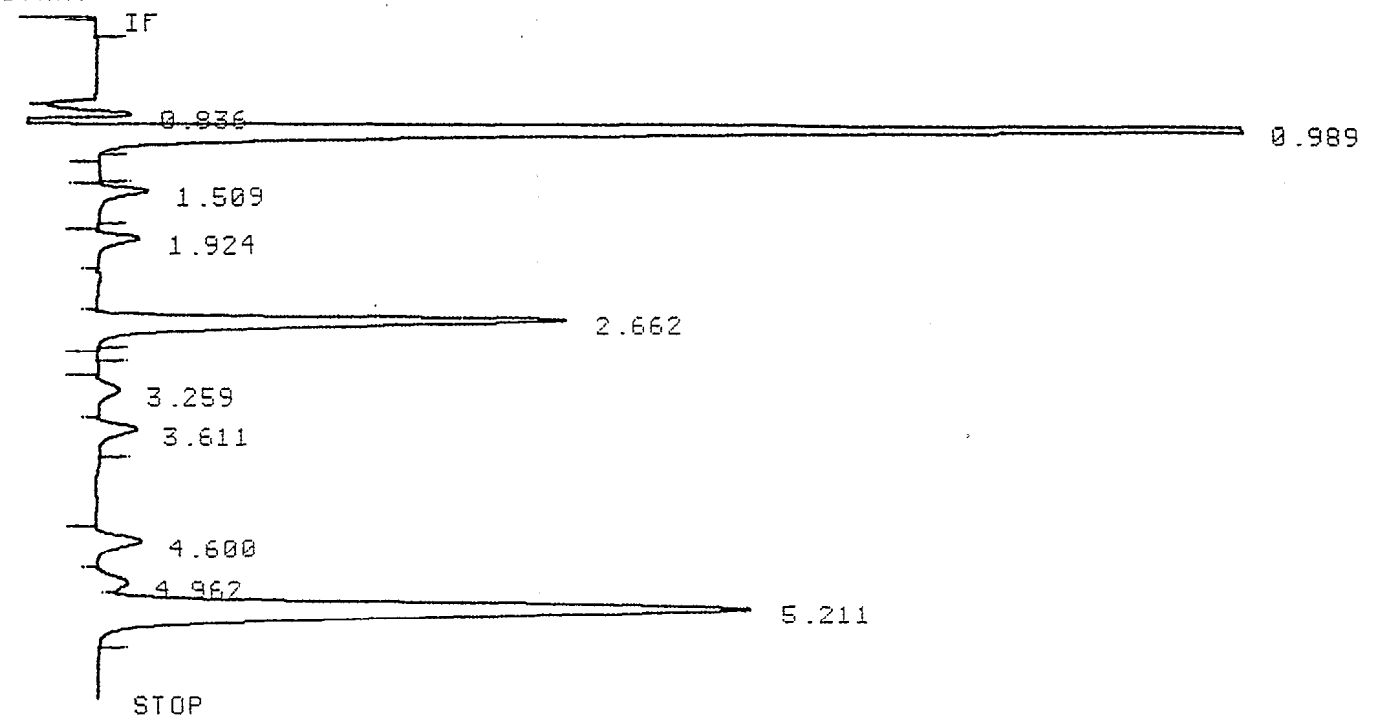
TOTAL AREA: 539660
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-23D
REPORT MEMO: PH-23

* RUN # 49 MAY 1, 1992 06:30:57
START



Closing signal file B:Q478B1A2.BNC

RUN# 49 MAY 1, 1992 06:30:57

SAMPLE NAME: GW-23D
PH-23

SIGNAL FILE: B:Q478B1A2.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.836	BP	12021	.065	3092			
.989	PB	229759	.092	41776			
1.509	BB	7179	.087	1371			
1.924	BP	6400	.088	1210	1	2	TRANS-1,2-DCE
2.662	PB	76109	.097	13073	2	30	CIS-1,2-DCE
3.259	BP	4712	.122	646			
3.611	PB	7498	.112	1111	3	1	BENZENE
4.600	BV	9522	.122	1296	4	3	TCE
4.962	VV	7289	.135	900			
5.211	VB	162673	.148	18280	5R		REF. PEAK
				GROUP	1	32	TOTAL DCE

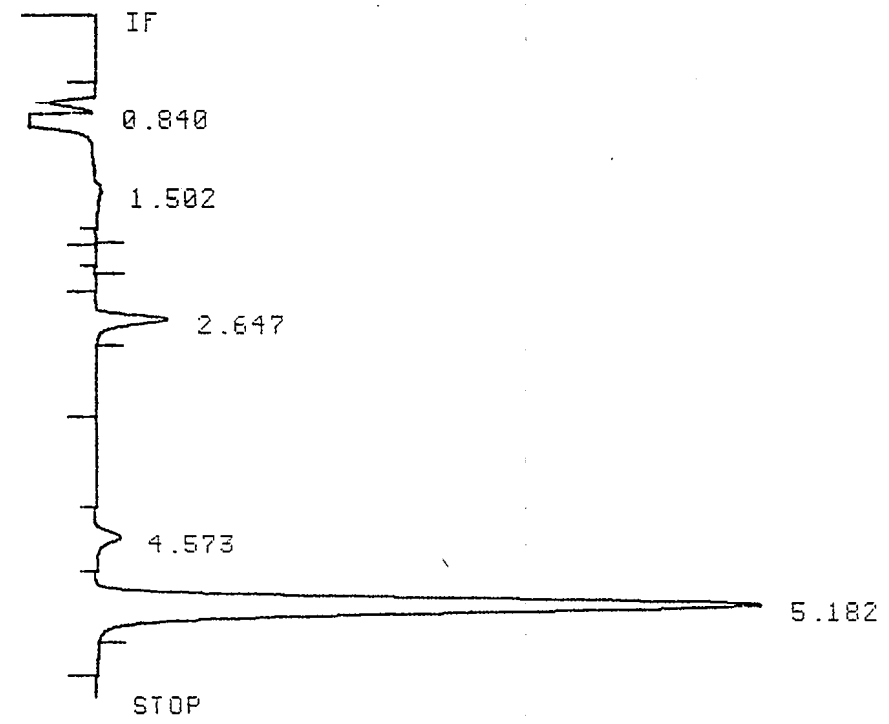
TOTAL AREA: 523162
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-24
REPORT MEMO: PH-24

* RUN # 50 MAY 1, 1992 06:53:39
START



Closing signal file B:Q478B6F4.BNC

RUN# 50 MAY 1, 1992 06:53:39

SAMPLE NAME: GW-24
PH-24

SIGNAL FILE: B:Q478B6F4.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.840	VP	7432	.061	2046			
1.502	PV	69663	.879	1321			
2.647	BB	12698	.102	2079	2	5	CIS-1,2-DCE
4.573	PP	5188	.124	695	4	2	TCE
5.182	PB	166448	.150	18531	5R		REF. PEAK
				GROUP	1	5	TOTAL DCE

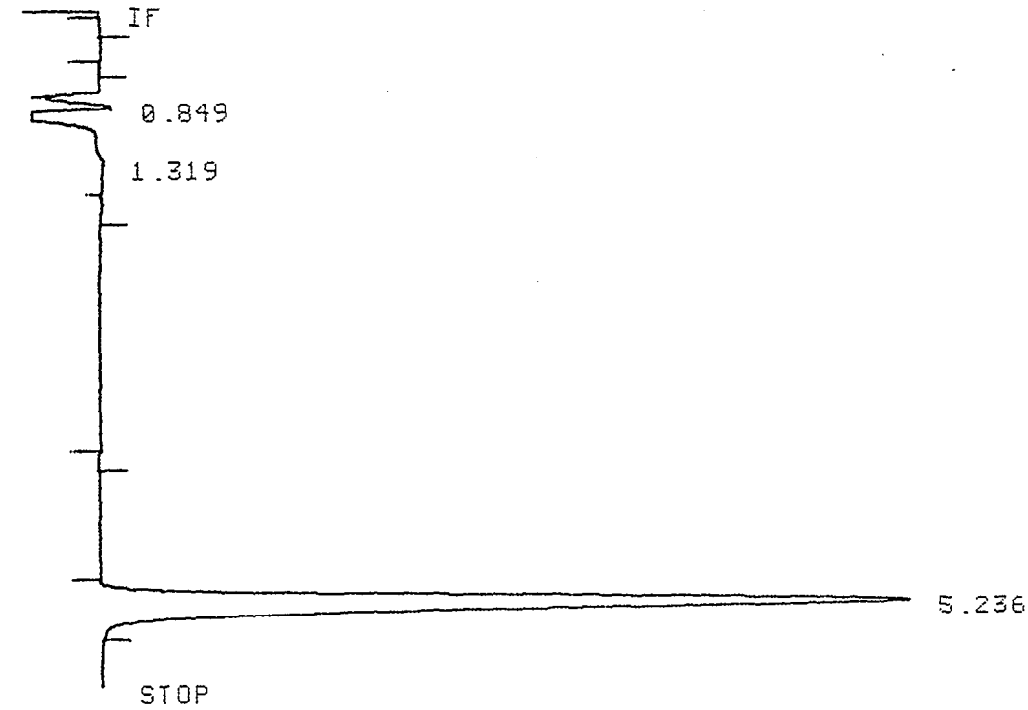
TOTAL AREA: 261429
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-25
REPORT MEMO: PH-25

* RUN # 52 MAY 1, 1992 07:58:17
START



Closing signal file B:Q478C61A.BNC

RUN# 52 MAY 1, 1992 07:58:17

SAMPLE NAME: GW-25
PH-25

SIGNAL FILE: B:Q478C61A.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.849	BP	8556	.062	2291			
1.319	PV	45429	.518	1461			
5.236	PB	204261	.151	22566	5R		REF. PEAK

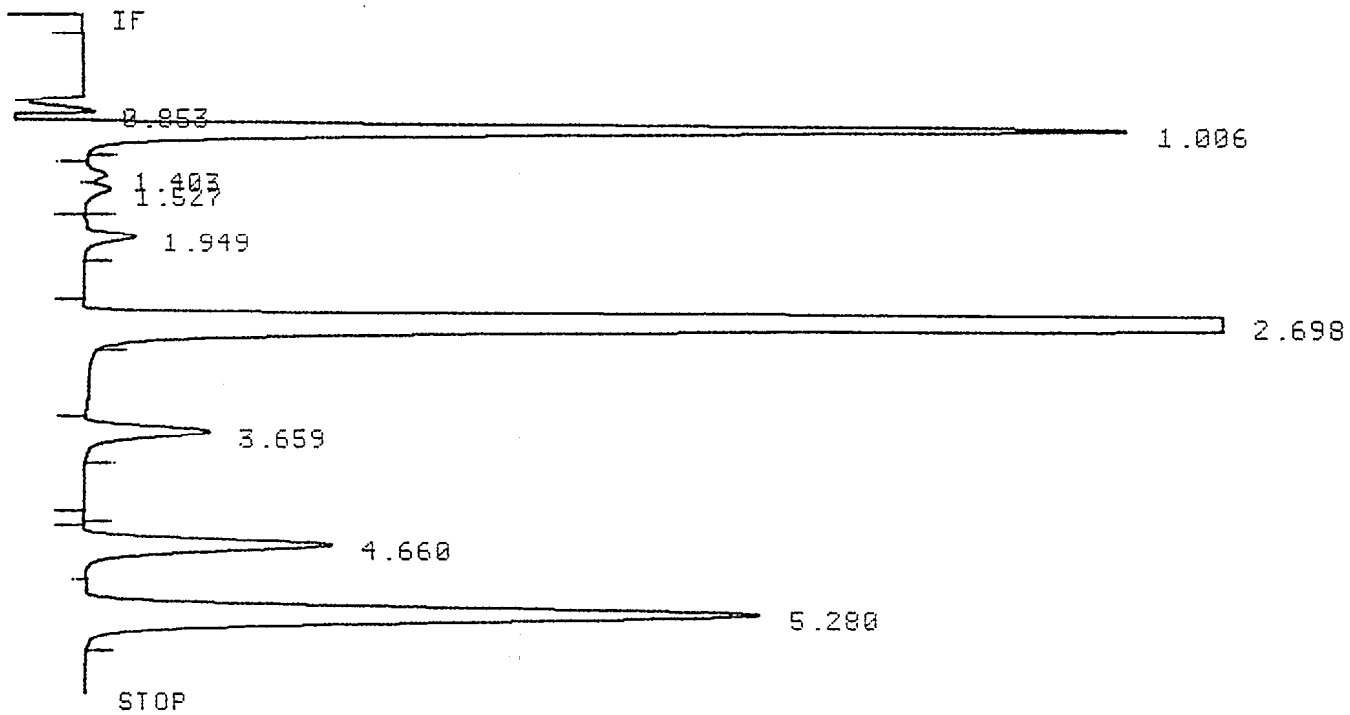
TOTAL AREA: 258246
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BMW11-5-1-92
REPORT MEMO:

* RUN # 53 MAY 1, 1992 08:08:38
START



Closing signal file B:Q478C887.BNC

RUN# 53 MAY 1, 1992 08:08:38

SAMPLE NAME: BMW11-5-1-92

SIGNAL FILE: B:Q478C887.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.853	BP	9443	.063	2509			
1.006	PB	182522	.098	31120			
1.403	BV	3251	.094	574			
1.527	VB	3879	.093	697			
1.949	BB	8511	.098	1451	1	2	TRANS-1,2-DCE
2.698	PB	719433	.101	119074	2	284	CIS-1,2-DCE
3.659	BB	25058	.116	3608	3	5	BENZENE
4.660	PV	54283	.127	7109	4	19	TCE
5.280	VB	171001	.151	18837	5R		REF. PEAK
				GROUP	1	286	TOTAL DCE

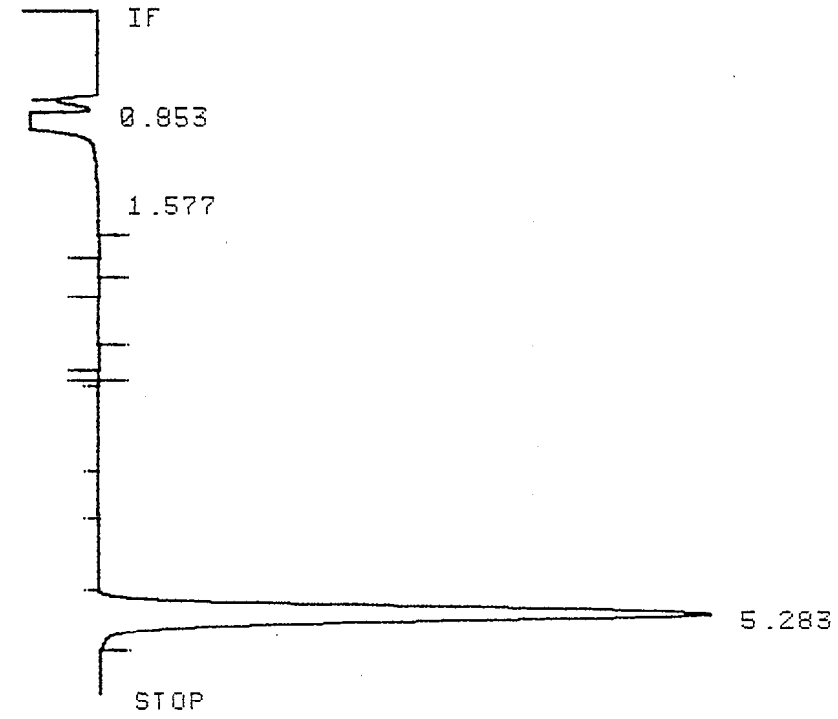
TOTAL AREA: 1177381
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-26
REPORT MEMO: PH-26

* RUN # 54 MAY 1, 1992 08:25:13
START



Closing signal file B:Q478CC6A.BNC

RUN# 54 MAY 1, 1992 08:25:13

SAMPLE NAME: GW-26
PH-26

SIGNAL FILE: B:Q478CC6A.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.853	BP	5533	.054	1694			
1.577	PB	62333	1.06	978			
5.283	PB	156021	.152	17108	5R		REF. PEAK

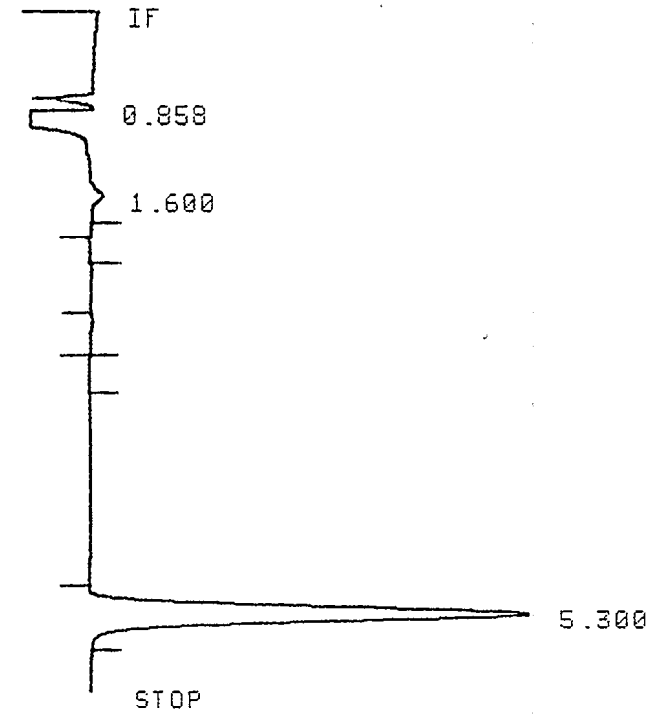
TOTAL AREA: 223887
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: ARE ▒A▒▒▒▒AREA A-2
REPORT MEMO:

* RUN # 55 MAY 1, 1992 10:59:21
START



Closing signal file B:Q478F08A.BNC

RUN# 55 MAY 1, 1992 10:59:21

SAMPLE NAME: AREA A-2

SIGNAL FILE: B:Q478F08A.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.858	BP	7259	.064	1877			
1.600	PB	54977	.929	986			
5.300	PB	111121	.150	12380	5R		REF. PEAK

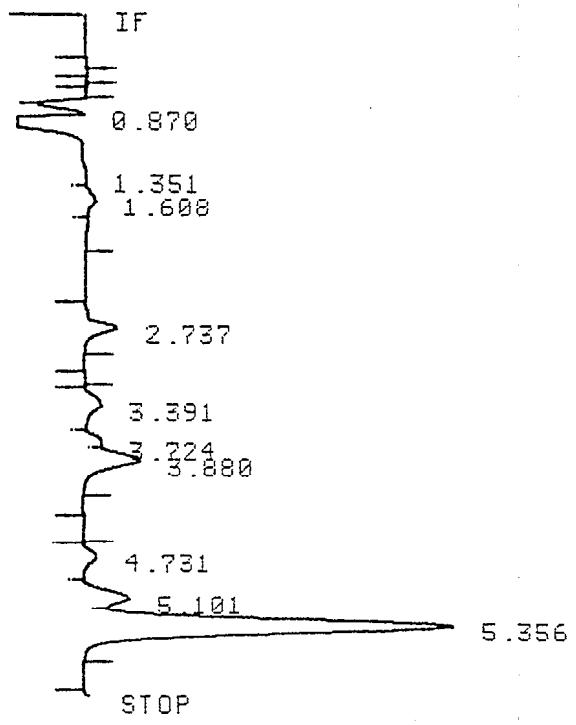
TOTAL AREA: 173357
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-27
REPORT MEMO: PH-27

* RUN # 56 MAY 1, 1992 16:29:18
START



Closing signal file B:Q479300F.BNC

RUN# 56 MAY 1, 1992 16:29:18

SAMPLE NAME: GW-27
PH-27

SIGNAL FILE: B:Q4793DDF.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.870	BP	7366	.063	1936			
1.351	PV	44703	.478	1560			
1.608	VV	21087	.278	1264			
2.737	BB	6488	.116	930	2	3	CIS-1,2-DCE
3.391	BV	4639	.161	480			
3.724	VV	2909	.091	530	3		BENZENE
3.880	VB	15812	.163	1621			
4.731	BP	3151	.130	403	4	1	TCE
5.101	PV	11346	.146	1296			
5.356	VB	95437	.154	10333	5R		REF. PEAK
				GROUP	1	3	TOTAL DCE

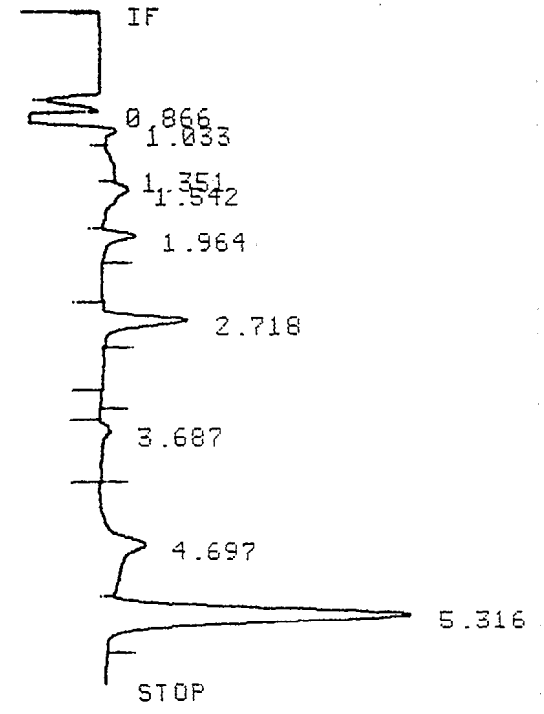
TOTAL AREA: 212938
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-28
REPORT MEMO: PH-28

* RUN # 57 MAY 1, 1992 16:52:32
START



Closing signal file B:Q4794351.BNC

RUN# 57 MAY 1, 1992 16:52:32

SAMPLE NAME: GW-28
PH-28

SIGNAL FILE: B:Q4794351.BNC

sm
Burlington RECON Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.866	VP	11020	.079	2335			
1.033	PV	22000	.132	2771			
1.351	VV	40366	.327	2058			
1.542	VV	35064	.285	2053			
1.964	VB	11193	.133	1407	1	3	TRANS-1,2-DCE
2.718	BB	14646	.100	2430	2	6	CIS-1,2-DCE
3.687	PB	2840	.148	320	3		BENZENE
4.697	PV	21868	.293	1244	4.	7	TCE.
5.316	VB	79134	.152	8664	5R		REF. PEAK
				GROUP	1	9	TOTAL DCE

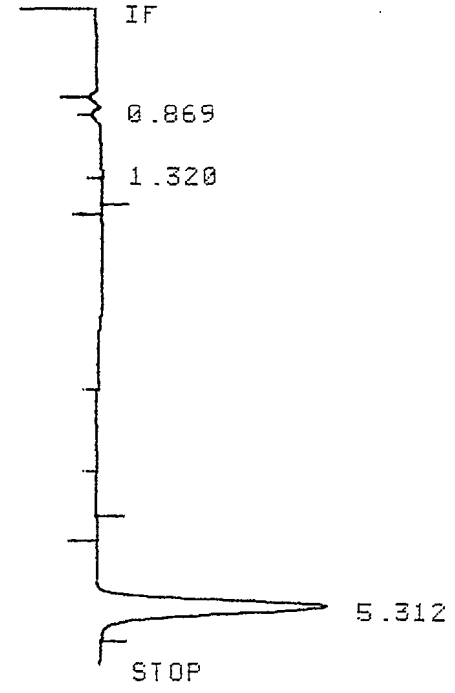
TOTAL AREA: 238131
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-13
REPORT MEMO:

* RUN # 58 MAY 1, 1992 17:00:01
START



Closing signal file B:Q4794512.BNC

RUN# 58 MAY 1, 1992 17:00:01

SAMPLE NAME: BLANK-13

SIGNAL FILE: B:Q4794512.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.869	BV	1323	.084	264			
1.320	VV	5484	.525	174			
5.312	PB	57731	.151	6374	5R		REF. PEAK

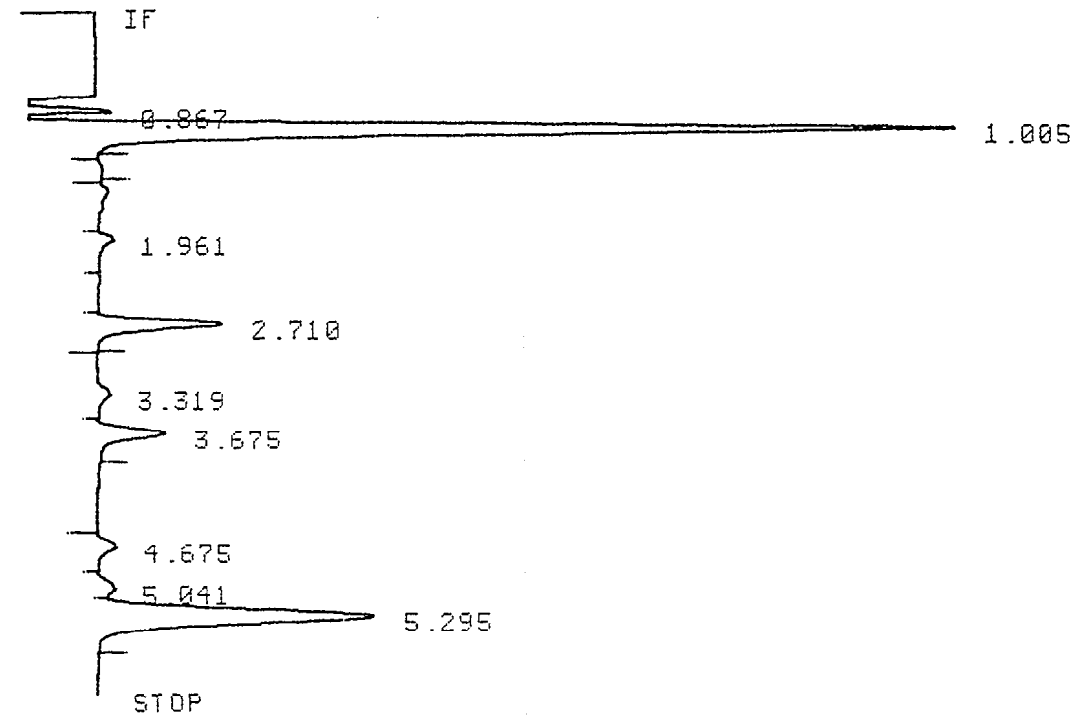
TOTAL AREA: 64538
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-29
REPORT MEMO: PH-29

* RUN # 59 MAY 1, 1992 17:07:02
START



Closing signal file B:Q47946B7.BNC

RUN# 59 MAY 1, 1992 17:07:02

SAMPLE NAME: GW-29
PH-29

SIGNAL FILE: B:Q47946B7.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.867	BP	9497	.060	2660			
1.005	PB	139993	.091	25590			
1.961	PV	3001	.102	492	1		TRANS-1,2-DCE
2.710	VB	20940	.098	3569	2	8	CIS-1,2-DCE
3.319	BP	2765	.131	353			
3.675	PB	12813	.112	1905	3	3	BENZENE
4.675	BV	4130	.124	556	4	1	TCEE
5.041	VV	4322	.139	519			
5.295	VB	69338	.149	7740	5R		REF. PEAK
				GROUP	1	9	TOTAL DCE

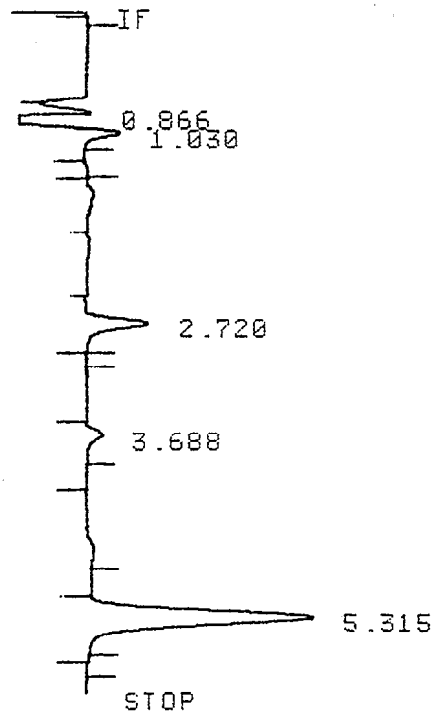
TOTAL AREA: 266799
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-30
REPORT MEMO: PH-30

* RUN # 60 MAY 1, 1992 17:32:08
START



Closing signal file B:Q4794C99.BNC

RUN# 60 MAY 1, 1992 17:32:08

SAMPLE NAME: GW-30
PH-30

SIGNAL FILE: B:Q4794C99.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.866	BP	7579	.060	2107			
1.030	PB	15595	.110	2372			
2.720	PB	10706	.103	1733	2	4	CIS-1,2-DCE
3.688	BB	3051	.113	452	3		BENZENE
5.315	BB	56532	.152	6218	5R		REF. PEAK
				GROUP	1	4	TOTAL DCE

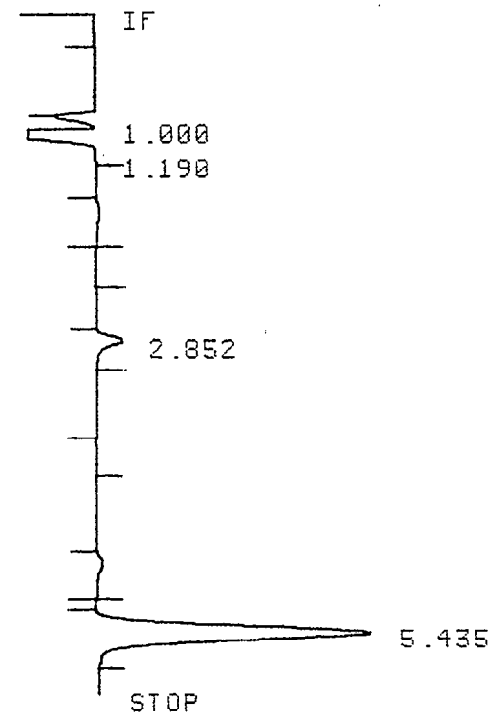
TOTAL AREA: 93463
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-31
REPORT MEMO: PH-31

* RUN # 61 MAY 1, 1992 17:47:28
START



Closing signal file B:Q4795031.BNC

RUN# 61 MAY 1, 1992 17:47:28

SAMPLE NAME: GW-31
PH-31

SIGNAL FILE: B:Q4795031.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
1.000	BP	7163	.066	1807			
1.190	PB	9990	.143	1163			
2.852	BB	4438	.096	768		2	CIS-1,2-DCE
5.435	BB	68560	.149	7653	5R		REF. PEAK

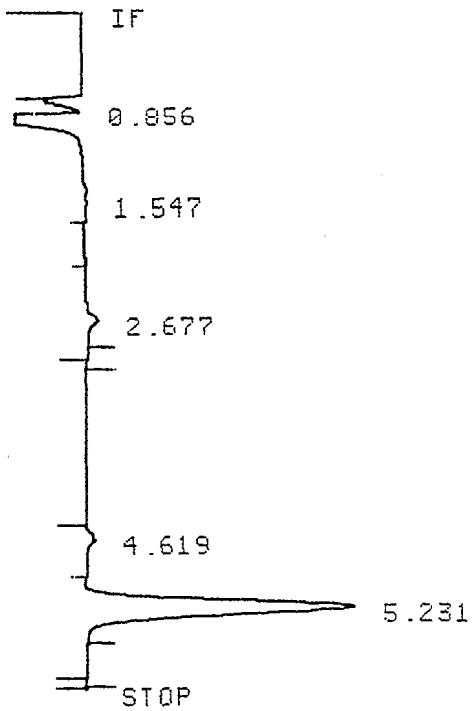
TOTAL AREA: 90151
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-32
REPORT MEMO: PH-32

* RUN # 62 MAY 1, 1992 17:59:56
START



Closing signal file B:Q479531D.BNC

RUN# 62 MAY 1, 1992 17:59:56

SAMPLE NAME: GW-32
PH-32

SIGNAL FILE: B:Q479531D.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.856	BP	6364	.061	1751			
1.547	PV	78198	.795	1639			
2.677	VB	21234	.595	595	2	8	CIS-1,2-DCE
4.619	BP	2057	.122	280	4		TCEE
5.231	PB	66616	.148	7521	5R		REF. PEAK
				GROUP	1	8	TOTAL DCE

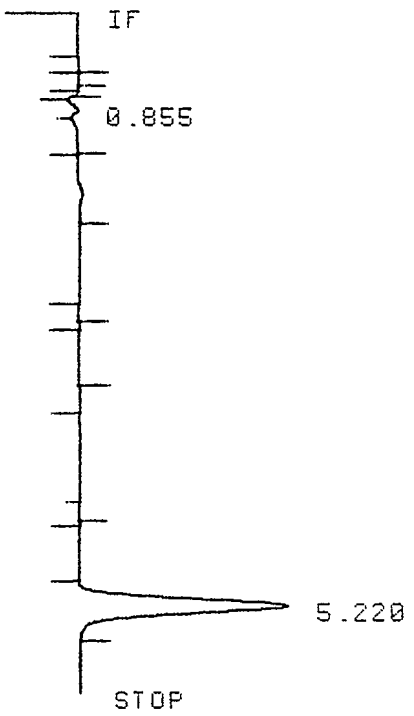
TOTAL AREA: 174469
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-14
REPORT MEMO:

* RUN # 63 MAY 1, 1992 18:07:47
START



Closing signal file B:Q47954F4.BNC

RUN# 63 MAY 1, 1992 18:07:47

SAMPLE NAME: BLANK-14

SIGNAL FILE: B:Q47954F4.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.855	BP	1260	.085	248			
5.220	BB	51091	.146	5831	5R		REF. PEAK

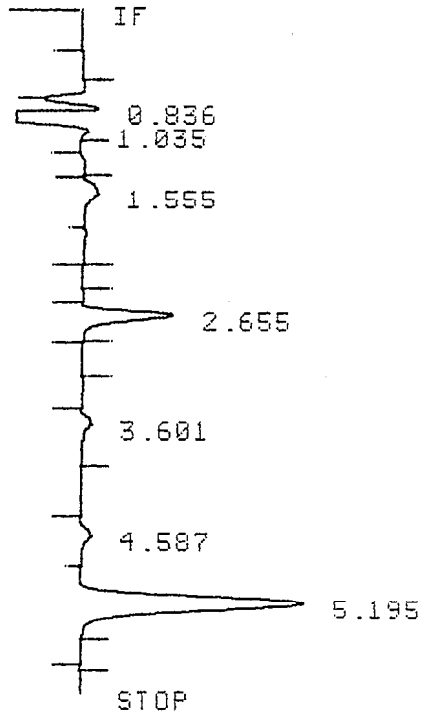
TOTAL AREA: 52351
MUL FACTOR: 1.00

```
*
*  OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00 ]:
SAMPLE AMT [0.0000E+00 ]:
MUL FACTOR [1.0000E+00 ]:
RECALIBRATION [Y/N*]:
NAME: GW-33
REPORT MEMO: PH-2▒33

*  RUN #   64     MAY  1, 1992  19:16:40
START
```




```
Closing signal file B:Q4796518.BNC
```

RUN# 64 MAY 1, 1992 19:16:40

SAMPLE NAME: GW-33
PH-33

SIGNAL FILE: B:Q4796518.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.836	BP	8567	.064	2239			
1.035	PB	6697	.094	1185			
1.555	BP	4138	.162	427			
2.655	BB	14601	.096	2527	2	6	CIS-1,2-DCE
3.601	BB	2304	.122	314	3		BENZENE
4.587	PP	2295	.123	311	4		TCEE
5.195	PB	55726	.148	6265	5R		REF. PEAK
				GROUP	1	6	TOTAL DCE

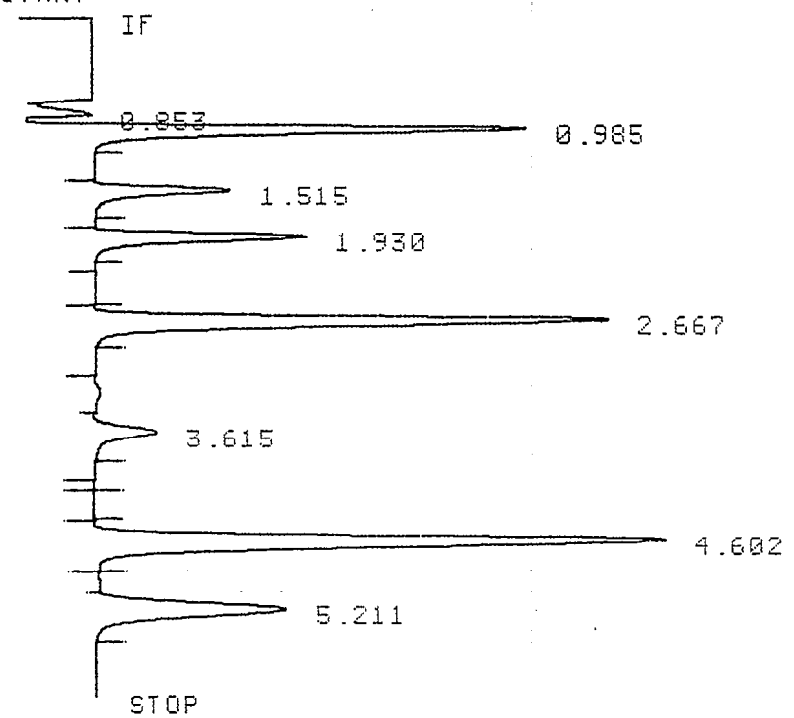
TOTAL AREA: 94328
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-34
REPORT MEMO: PH-34

* RUN # 65 MAY 1, 1992 19:35:24
START



Closing signal file B:Q479697D.BNC

RUN# 65 MAY 1, 1992 19:35:24

SAMPLE NAME: GW-34
PH-34

SIGNAL FILE: B:Q479697D.BNC

Burlington RECON sm Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.853	BP	7864	.068	1927			
.985	PB	71894	.088	13654			
1.515	BB	20212	.087	3872			
1.930	BB	30883	.086	6019	1	8	TRANS-1,2-DCE
2.667	BB	81861	.095	14331	2	32	CIS-1,2-DCE
3.615	PB	12149	.112	1810	3	2	BENZENE
4.602	PB	116319	.122	15897	4	40	TCEE
5.211	VB	46570	.145	5371	SR		REF. PEAK
				GROUP	1	40	TOTAL DCE

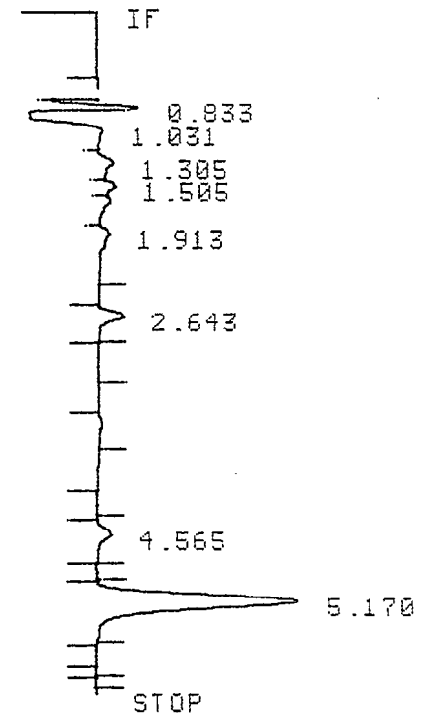
TOTAL AREA: 387752
MUL FACTOR: 1.00

OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: GW-35
REPORT MEMO: PH-35

* RUN # 66 MAY 1, 1992 20:28:57
START



Closing signal file B:Q479760A.BNC

RUN# 66 MAY 1, 1992 20:28:57

SAMPLE NAME: GW-35
PH-35

SIGNAL FILE: B:Q479760A.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME	
.833	PP	10361	.060	2878				
1.031	PV	25354	.200	2116				
1.305	VV	26971	.225	1998				
1.505	VV	14049	.132	1775				
1.913	VB	15257	.261	974	1	4	TRANS-1,2-DCE	= 3.7
2.643	BB	4024	.092	729	2	2	CIS-1,2-DCE	1.6
4.565	BB	2983	.121	410	4	1	TCEE	5.3
5.170	BB	50122	.147	5702	5R		REF. PEAK	
				GROUP	1	5	TOTAL DCE	

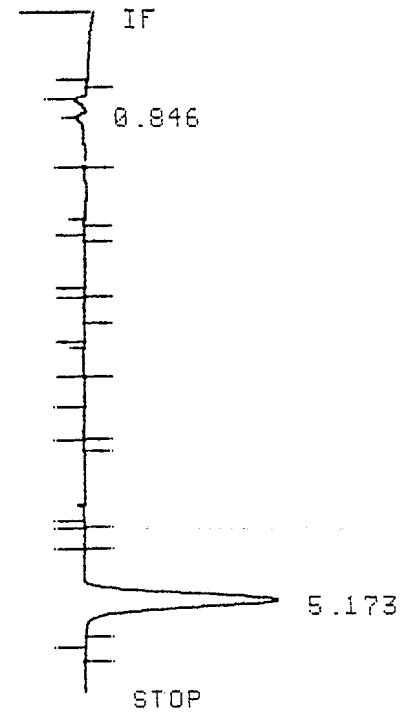
TOTAL AREA: 149121
MUL FACTOR: 1.00

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: BLANK-15
REPORT MEMO:

* RUN # 67 MAY 1, 1992 20:51:38
START



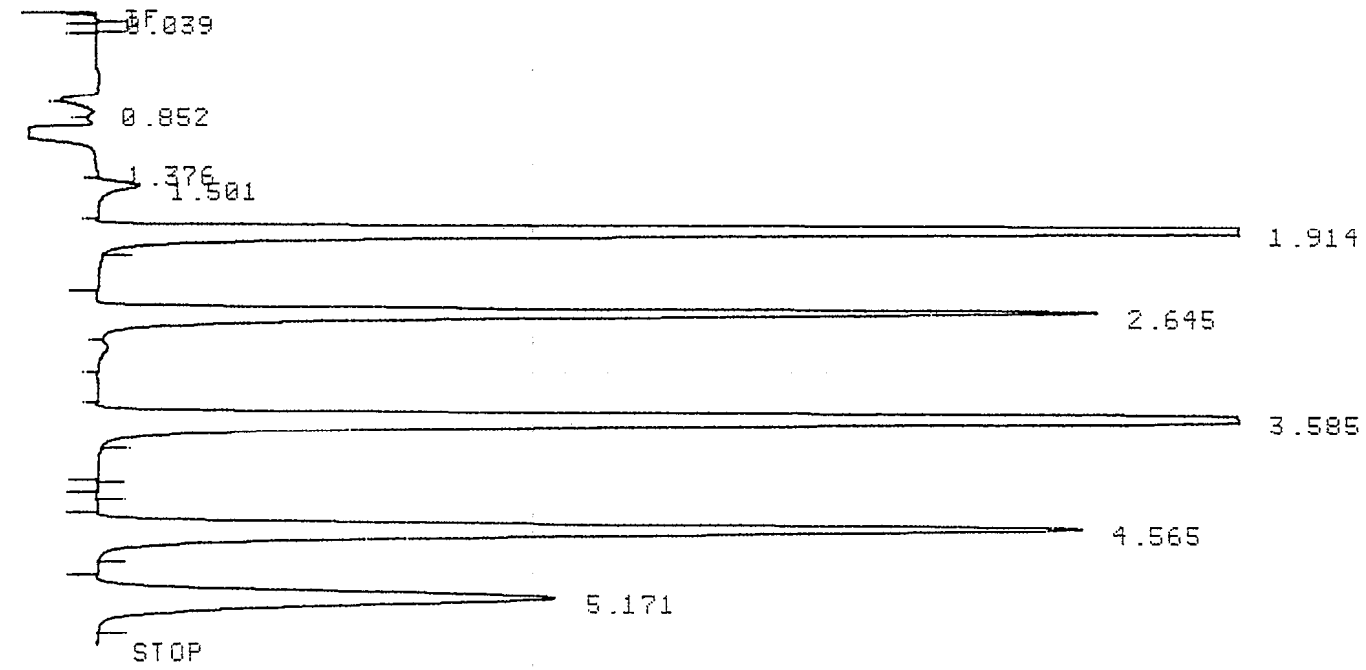
Closing signal file B:Q4797B5B.BNC

* OP # 7

DEFAULT SAMPLE INFORMATION
USE SAMPLE TABLE IN MANUAL RUN [Y/N*]:

ISTD AMT [0.0000E+00]:
SAMPLE AMT [0.0000E+00]:
MUL FACTOR [1.0000E+00]:
RECALIBRATION [Y/N*]:
NAME: RT-03
REPORT MEMO:

* RUN # 68 MAY 1, 1992 20:58:47
START



Closing signal file B:Q4797D08.BNC

RUN# 68 MAY 1, 1992 20:58:47

SAMPLE NAME: RT-03

SIGNAL FILE: B:Q4797D08.BNC

Burlington RECON SM Multimedia Analysis

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	ug/L	NAME
.039	PB	530	.043	205			
.852	VV	12395	.118	1758			
1.376	PV	32327	.335	1608			
1.501	VV	29463	.196	2511			
1.914	VB	325925	.086	63213	1	81	TRANS-1,2-DCE
2.645	BV	156273	.093	28029	2	62	CIS-1,2-DCE
3.585	PB	282051	.108	43331	3	56	BENZENE
4.565	BB	200001	.121	27561	4	68	TCEE
5.171	PB	111197	.144	12860	5R		REF. PEAK
				GROUP	1	143	TOTAL DCE

TOTAL AREA: 1150162
MUL FACTOR: 1.00

APPENDIX X

APPENDIX X
PREVIOUS INVESTIGATION SUMMARIES

MALCOLM PIRNIE, INC.

ANALYTICAL SUMMARIES (1983-1986)

GROUND WATER ANALYTICAL RESULTS
ORGANICS
CAMP ALLEN LANDFILL (SITE 1)

	DETECTION LIMIT			01GW-01			01GW-02			01GW-03			01GW-04			01GW-05		
VOLATILE ORGANICS	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
VINYL CHLORIDE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	79	BDL	18	BDL	BDL	BDL
METHYLENE CHLORIDE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	24000	17000	96	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2300	1700	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	20	BDL	BDL	170	39	17
TRANS-1,2-DICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	340	BDL	16	BDL	BDL	BDL
1,2-DICHLOROETHANE	10	10	10	BDL	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	74	TRACE	11	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	24	BDL	BDL	95	BDL	BDL
TRICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	480	640	34	BDL	BDL	BDL
BENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	260	390	29	BDL	BDL	BDL
1,1,2,2-TETRACHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TOLUENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	180	290	23	BDL	BDL	BDL
ETHYLBENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	430	410	12	BDL	BDL	BDL
ACID EXTRACTABLE ORGANICS																		
PHENOL	25	25	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	44	67	BDL	BDL	BDL	BDL
2,4-DIMETHYLPHENOL	25	25	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	170	190	BDL	BDL	BDL	BDL
PENTACHLOROPHENOL	25	25	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	110	BDL	BDL	BDL	BDL	BDL
BASE-NEUTRAL EXTRACTABLE ORGANICS																		
NAPHTHALENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	120*	BDL	BDL	BDL	BDL	BDL
BIS(2-ETHYLHEXYL)PHTHALATE	10	10	10	BDL	BDL	BDL	97	BDL	BDL	15	BDL	BDL	BDL*	BDL	BDL	BDL	BDL	BDL
PESTICIDES/PCB'S																		
ALL VALUES BELOW DETECTION LIMIT																		

NOTES: All values for ORGANICS in ug/l.
* = Sample detection limit is 100 ug/l using a 1:10 dilution.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

(CONT.)

GROUND WATER ANALYTICAL RESULTS
ORGANICS
CAMP ALLEN LANDFILL (SITE 1)

	DETECTION LIMIT			01GW-06			01GW-07			01GW-EW			01GW-B20W		
VOLATILE ORGANICS	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
VINYL CHLORIDE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2000	4200	540*
METHYLENE CHLORIDE	10	10	10	BDL	BDL	BDL	17	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
TRICHLOROFLUOROMETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
1,1-DICHLORETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
TRANS-1,2-DICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	46000	46000	1400*
1,2-DICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	270	110*
1,1,1-TRICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
TRICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5600	620	BDL*
BENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	380	280	120*
1,1,2,2-TETRACHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
TOLUENE	10	10	10	BDL	BDL	BDL	18	BDL	BDL	BDL	BDL	BDL	18000	8600	3400*
ETHYLBENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL*
ACID EXTRACTABLE ORGANICS															
PHENOL	25	25	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5100**	7200	360
2,4-DIMETHYLPHENOL	25	25	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1100**	450	410
PENTACHLOROPHENOL	25	25	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL***	BDL	BDL
BASE-NEUTRAL EXTRACTABLE ORGANICS															
NAPHTHALENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	79	82	36
BIS(2-ETHYLHEXYL)PHTHALATE	10	10	10	BDL	BDL	BDL	52	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
PESTICIDES/PCB'S															
ALL VALUES BELOW DETECTION LIMIT															

NOTES: All values for ORGANICS in ug/l.
* = Sample detection limit is 125 ug/l using a 1:12.5 dilution.
** = Sample detction limit is 200 ug/l using a 1:20 dilution.
*** = Sample detction limit is 1000 ug/l using a 1:20 dilution.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

SURFACE WATER ANALYTICAL RESULTS
ORGANICS
CAMP ALLEN LANDFILL (SITE 1)

	DETECTION LIMIT			01SW-08			01SW-09			01SW-10			01SW-11		
VOLATILE ORGANICS	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
VINYL CHLORIDE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	33	11
METHYLENE CHLORIDE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	14	BDL	BDL	12	BDL	BDL
TRICHLOROFLUOROMETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	16	BDL
1,1-DICHLORETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TRANS-1,2-DICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	17	BDL	24	BDL	82	19
1,2-DICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-TRICHLOROETHANE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TRICHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	15	BDL	18	BDL	52	16
BENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2,2-TETRACHLOROETHYLENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	13	BDL	20	BDL	BDL	BDL
TOLUENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ETHYLBENZENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ACID EXTRACTABLE ORGANICS															
PHENOL	25	25	10	BDL	BDL	BDL	66	66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2,4-DIMETHYLPHENOL	25	25	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
PENTACHLOROPHENOL	25	25	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BASE-NEUTRAL EXTRACTABLE ORGANICS															
NAPHTHALENE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	BD	BDL	BDL	BDL	BDL	BDL
BIS(2-ETHYLHEXYL)PHTHALATE	10	10	10	BDL	BDL	BDL	BDL	BDL	BDL	13	BDL	BDL	15	BDL	BDL
PESTICIDES/PCB'S															
ALL VALUES BELOW DETECTION LIMIT															

NOTES: All values for ORGANICS in ug/l.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

GROUND WATER ANALYTICAL RESULTS
INORGANICS
CAMP ALLEN LANDFILL (SITE 1)

INORGANICS	DETECTION LIMIT 01	DETECTION LIMIT 02	DETECTION LIMIT 03	01GW-01 01	01GW-01 02	01GW-01 03	01GW-02 01	01GW-02 02	01GW-02 03	01GW-03 01	01GW-03 02	01GW-03 03	01GW-04 01	01GW-04 02	01GW-04 03	01GW-05 01	01GW-05 02	01GW-05 03
ANTIMONY, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	BDL	BDL	BDL	1.80	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ARSENIC, TOTAL	0.05	0.05	0.05	0.30	BDL	BDL	0.33	BDL	BDL	0.90	BDL	BDL	BDL	BDL	BDL	0.36	BDL	BDL
CADMIUM, TOTAL	0.02	0.01	0.01	0.02	BDL	0.03	0.05	BDL	0.03	0.54	0.12	0.1	0.05	BDL	BDL	0.02	BDL	0.08
CHROMIUM, TOTAL	0.10	0.05	0.05	0.10	2.30	0.13	0.12	BDL	BDL	117.00	0.06	0.19	1.70	1.00	BDL	1.60	0.07	BDL
COPPER, TOTAL	0.10	0.10	0.10	0.14	0.10	0.21	0.62	0.10	BDL	1.30	0.12	0.22	0.21	BDL	BDL	0.10	BDL	BDL
LEAD, TOTAL	0.20	0.05	0.05	0.40	0.05	0.32	1.70	0.14	0.17	5.80	1.10	0.99	1.88	BDL	BDL	0.50	0.11	0.25
MERCURY, TOTAL	0.0002	0.0002	0.0002	BDL	BDL	0.0014	0.0003	BDL	BDL	BDL	BDL	BDL	BDL	0.0004	BDL	BDL	0.0002	0.00041
NICKEL, TOTAL	0.10	0.10	0.10	BDL	BDL	BDL	0.10	BDL	BDL	0.30	BDL	0.16	0.10	BDL	BDL	BDL	BDL	BDL
SELENIUM, TOTAL	0.05	0.01	0.01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
THALLIUM, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	0.06	BDL	BDL	0.42	BDL	BDL	0.27	BDL	BDL	0.10	BDL	BDL
ZINC, TOTAL	0.02	0.02	0.02	0.30	0.02	0.49	2.50	0.24	0.44	7.70	2.50	1.4	0.90	0.09	BDL	0.50	0.05	BDL
CYANIDE, TOTAL	0.01	0.01	0.01	BDL	BDL	---	BDL	BDL	---	BDL	BDL	---	0.12	0.92	0.15	BDL	BDL	---
PHENOLS, TOTAL	0.01	0.01	0.01	0.01	0.044	---	0.01	0.018	---	BDL	BDL	---	1.30	1.80	0.28	0.01	BDL	---

NOTES: All values for INORGANICS in mg/l.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

(CONT.)

GROUND WATER ANALYTICAL RESULTS
INORGANICS
CAMP ALLEN LANDFILL (SITE 1)

INORGANICS	DETECTION LIMIT			01GW-06			01GW-07			01GW-EW			01GW-B20W		
	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
ANTIMONY, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ARSENIC, TOTAL	0.05	0.05	0.05	0.06	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.09	0.04	0.057
CADMIUM, TOTAL	0.02	0.01	0.01	0.02	BDL	0.06	BDL	BDL	0.03	BDL	BDL	BDL	0.04	0.01	0.08
CHROMIUM, TOTAL	0.10	0.05	0.05	BDL	BDL	BDL	0.10	BDL	BDL	0.30	0.40	BDL	BDL	0.07	BDL
COPPER, TOTAL	0.10	0.10	0.10	BDL	BDL	BDL	0.20	BDL	BDL	BDL	BDL	BDL	0.13	0.12	BDL
LEAD, TOTAL	0.20	0.05	0.05	0.20	BDL	0.29	BDL	0.12	0.14	BDL	0.12	BDL	0.27	0.18	0.29
MERCURY, TOTAL	0.0002	0.0002	0.0002	BDL	BDL	0.00049	BDL	BDL	BDL	0.0003	BDL	BDL	BDL	BDL	BDL
NICKEL, TOTAL	0.10	0.10	0.10	BDL	BDL	BDL	0.10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SELENIUM, TOTAL	0.05	0.01	0.01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.034	BDL
THALLIUM, TOTAL	0.05	0.05	0.05	0.18	BDL	BDL	0.10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC, TOTAL	0.02	0.02	0.02	0.20	0.05	BDL	0.36	0.04	BDL	0.23	0.72	2.6	0.57	0.63	BDL
CYANIDE, TOTAL	0.01	0.01	0.01	BDL	BDL	---	BDL	0.014	---	BDL	BDL	---	0.09	0.38	0.06
PHENOLS, TOTAL	0.01	0.01	0.01	BDL	BDL	---	0.01	BDL	---	BDL	BDL	---	BDL	60.00	13

NOTES: All values for INORGANICS in mg/l.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

SURFACE WATER ANALYTICAL RESULTS
INORGANICS
CAMP ALLEN LANDFILL (SITE 1)

INORGANICS	DETECTION LIMIT 01	DETECTION LIMIT 02	DETECTION LIMIT 03	01SW-08 01	01SW-08 02	01SW-08 03	01SW-09 01	01SW-09 02	01SW-09 03	01SW-10 01	01SW-10 02	01SW-10 03	01SW-11 01	01SW-11 02	01SW-11 03
ANTIMONY, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ARSENIC, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	0.07	BDL	BDL	0.50	BDL	BDL	0.34	BDL	BDL
CADMIUM, TOTAL	0.02	0.01	0.01	BDL	BDL	0.02	BDL	BDL	0.03	0.08	0.03	0.02	0.18	0.01	0.03
CHROMIUM, TOTAL	0.10	0.05	0.05	BDL	0.40	BDL	0.22	0.07	0.09	0.10	0.15	BDL	0.18	0.05	BDL
COPPER, TOTAL	0.10	0.10	0.10	BDL	BDL	BDL	BDL	BDL	0.1	0.60	0.30	0.14	0.95	BDL	BDL
LEAD, TOTAL	0.20	0.05	0.05	BDL	BDL	0.05	BDL	0.12	0.33	1.30	0.53	0.31	2.10	0.20	BDL
MERCURY, TOTAL	0.0002	0.0002	0.0002	BDL	BDL	BDL	BDL	BDL	0.0009	BDL	BDL	0.0003	BDL	BDL	0.0003
NICKEL, TOTAL	0.10	0.10	0.10	BDL	BDL	BDL	BDL	BDL	BDL	0.10	BDL	BDL	0.10	BDL	BDL
SELENIUM, TOTAL	0.05	0.01	0.01	BDL	BDL	BDL	BDL	BDL	BDL	0.10	BDL	BDL	BDL	BDL	BDL
THALLIUM, TOTAL	0.05	0.05	0.05	BDL	BDL	BDL	BDL	BDL	BDL	0.24	BDL	BDL	BDL	BDL	BDL
ZINC, TOTAL	0.02	0.02	0.02	0.05	0.06	0.08	0.05	0.02	0.25	1.80	1.34	0.84	4.70	0.27	BDL
CYANIDE, TOTAL	0.01	0.01	0.01	BDL	BDL	---	BDL	0.022	BDL	0.02	0.014	BDL	0.04	0.06	BDL
PHENOLS, TOTAL	0.01	0.01	0.01	0.01	0.024	---	0.01	0.018	0.04	0.01	BDL	BDL	0.01	0.24	BDL

NOTES: All values for INORGANICS in mg/l.

LEGEND: 01 = FIRST ROUND - DEC. 1, 1983
02 = SECOND ROUND - AUG. 29, 1984
03 = THIRD ROUND - APR. 14, 1986

GROUND WATER ANALYTICAL RESULTS
SPECIAL ANALYSIS
CAMP ALLEN LANDFILL (SITE 1)

SPECIAL ANALYSIS	DETECTION LIMIT 03	DETECTION LIMIT 04	01GW-01 03	01GW-01 04	01GW-02 03	01GW-02 04	01GW-03 03	01GW-03 04
m-XYLENE	10	---	BDL	---	BDL	---	BDL	---
o,p-XYLENE	10	---	BDL	---	BDL	---	BDL	---
METHYLETHYLKETONE	10	10	BDL	BDL	BDL	BDL	BDL	BDL
METHYLISOBUTYLKETONE	10	10	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DIBROMOETHANE	0.015	0.015	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DIBROMO-3-CHLOROPROPANE	0.015	0.015	---	BDL	---	BDL	---	BDL

SPECIAL ANALYSIS	DETECTION LIMIT 03	DETECTION LIMIT 04	01GW-04 03	01GW-04 04	01GW-05 03	01GW-05 04	01GW-06 03	01GW-06 04
m-XYLENE	10	---	39	---	BDL	---	BDL	---
o,p-XYLENE	10	---	28	---	BDL	---	BDL	---
METHYLETHYLKETONE	10	10	BDL	BDL	BDL	BDL	BDL	BDL
METHYLISOBUTYLKETONE	10	10	1100	57	BDL	BDL	BDL	BDL
1,2-DIBROMOETHANE	0.015	0.015	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DIBROMO-3-CHLOROPROPANE	0.015	0.015	---	BDL	---	BDL	---	BDL

SPECIAL ANALYSIS	DETECTION LIMIT 03	DETECTION LIMIT 04	01GW-07 03	01GW-07 04	01GW-EW 03	01GW-EW 04	01GW-B20W 03	01GW-B20W 04
m-XYLENE	10	---	BDL	---	BDL	---	120*	---
o,p-XYLENE	10	---	BDL	---	BDL	---	150*	---
METHYLETHYLKETONE	10	10	BDL	BDL	BDL	BDL	6300*	BDL**
METHYLISOBUTYLKETONE	10	10	BDL	BDL	BDL	BDL	18000*	5800**
1,2-DIBROMOETHANE	0.015	0.015	BDL	BDL	BDL	BDL	BDL	BDL
1,2-DIBROMO-3-CHLOROPROPANE	0.015	0.015	---	BDL	BDL	BDL	---	BDL

NOTES: All values for SPECIAL ANALYSIS in ug/l.
* = Sample detection limit is 125 ug/l using a 1:12.5 dilution.
** = Sample detection limit is 500 ug/l using a 1:50 dilution.
--- = Analysis not performed.

LEGEND: 03 = THIRD ROUND - APR. 14, 1986
04 = FOURTH ROUND - JUN. 25, 1986

SURFACE WATER ANALYTICAL RESULTS
SPECIAL ANALYSIS
CAMP ALLEN LANDFILL (SITE 1)

SPECIAL ANALYSIS	DETECTION LIMIT 03	DETECTION LIMIT 04	01SW-08 03	01SW-08 04	01SW-09 03	01SW-09 04
m-XYLENE	10	---	BDL	---	BDL	---
o,p-XYLENE	10	---	BDL	---	BDL	---
METHYLETHYLKETONE	10	10	BDL	BDL	BDL	BDL
METHYLISOBUTYLKETONE	10	10	BDL	BDL	BDL	BDL
1,2-DIBROMOETHANE	0.015	0.015	BDL	BDL	BDL	BDL
1,2-DIBROMO-3-CHLOROPROPANE	0.015	0.015	---	BDL	---	BDL

SPECIAL ANALYSIS	DETECTION LIMIT 03	DETECTION LIMIT 04	01SW-10 03	01SW-10 04	01SW-11 03	01SW-11 04
m-XYLENE	10	---	BDL	---	BDL	---
o,p-XYLENE	10	---	BDL	---	BDL	---
METHYLETHYLKETONE	10	10	BDL	BDL	BDL	BDL
METHYLISOBUTYLKETONE	10	10	BDL	BDL	BDL	BDL
1,2-DIBROMOETHANE	0.015	0.015	BDL	BDL	BDL	BDL
1,2-DIBROMO-3-CHLOROPROPANE	0.015	0.015	---	BDL	---	BDL

NOTES: --- = Analysis not performed.

LEGEND: 03 = THIRD ROUND - APR. 14, 1986
04 = FOURTH ROUND - JUN. 25, 1986

CH_2M HILL
ANALYTICAL SUMMARIES

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN SURFACE WATER
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
April 1991

Sample Number	A-SW-1		A-SW-2		A-SW-3		A-SW-4		A-SW-5		A-SW-5DUP		A-SW-6		A-SW-7		A-SW-8	
Parameter: Units																		
Volatiles: ug/L																		
acetone	19	B	9	BJ	15	B	12	B	11	B	11	B	10	B	11	B	8	BJ
benzene	5	U	1	J	5	U	5	U	5	U	5	U	5	U	5	U	5	U
carbon disulfide	5	U	5	U	5	U	1	J	5	U	5	U	5	U	5	U	5	U
dichlorothene (total), 1,2-	7		7		5	U	5	U	5	U	5	U	5	U	5	U	5	U
methylene chloride	1	BJ	2	BJ	3	BJ	1	BJ	1	BJ	2	BJ	2	BJ	1	BJ	2	BJ
tetrachloroethene	3	J	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
trichloroethene	4	J	1	J	5	U	5	U	5	U	5	U	5	U	5	U	5	U
vinyl chloride	2	J	8	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Semivolatiles: ug/L																		
phenol	10	U	3	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Notes:

ug/L - microgram per liter

DUP - duplicate

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN SURFACE WATER
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA

Sample Number	A-SW-1	A-SW-2	A-SW-3	A-SW-4	A-SW-5	A-SW-5DUP	A-SW-6	A-SW-7	A-SW-8
Date Analyzed	4/91	4/91	4/91	4/91	4/91	4/91	4/91	4/91	4/91
Parameter: Units									
Inorganics: ug/L									
aluminum	2580	522	888	1120	1870	3260	1430	572	408
antimony	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U
arsenic	43.2	33.7	6.7 B	3 B	5.6 B	10.6	6.5 B	4.7 B	4.7 B
barium	178 B	120 B	43.1 B	50 B	54.9 B	53.4 B	44.8 B	36.8 B	27.8 B
beryllium	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
cadmium	11.7	15.6	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
calcium	125000	76900	91000	161000	146000	78100	91000	63500	72800
chromium	9.1 B	2.6 U	3.9 B	2.6 U	6.2 B	13 U	4.1 B	2.6 U	2.6 U
cobalt	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
copper	56.2	8.1 B	11.8 B	5.6 B	10 B	16.2 B	9.2 B	7.8 B	2.2 U
iron	37200	10400	3410	2400	3710	7050	3120	2950	2570
lead	133	14	16.6	11.4	14.2	29.6	15.7	9.9	6.8
magnesium	15500	28700	136000	405000	353000	108000	158000	64600	18500
manganese	502	332	287	198	220	322	251	262	245
mercury	0.33	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.33	0.08 U
nickel	8.6 U	8.6 U	8.6 U	8.6 U	12.1 B	8.6 U	8.6 U	8.6 U	8.6 U
potassium	7640	21200	46200	129000	112000	39000	60800	28500	6710
selenium	0.9 U	0.9 U	1.2 B	14.3	12.3	1.2 B	2.1 B	1.4 B	0.9 U
silver	4 U	4 U	4 U	4 U	4 U	6.4 B	4 B	4 U	4 U
sodium	24400	99000	1040000	3280000	2840000	811000	1230000	601000	46600
thallium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
vanadium	3.5 U	3.5 U	3.5 U	3.5 U	4.7 B	9 B	3.5 U	3.5 U	3.5 U
zinc	235	29.1	49.5	41.3	51.7	78	31.1	24.8	9.2 B

Notes:

ug/L - microgram per liter

Qualifiers:

U - Compound was analyzed for but not detected.

B - Analyte found in associated blank

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN SEDIMENTS
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
April 1991

Sample Number	A-SED-1		A-SED-2		A-SED-3		A-SED-3R		A-SED-4		A-SED-5		A-SED-5DUP		A-SED-6		A-SED-7		A-SED-8	
Parameter: Units																				
Volatiles: ug/kg																				
acetone	79	B	2500	B	74	B	77	B	960	B	150	B	210	B	290	B	220	B	100	B
butanone, 2-	14	U	530		24	U	23	BJ	200		42	B	50		67		51		25	
carbon disulfide	7	U	66	U	5	J	4	J	9	J	15	U	14	U	14	U	10	U	11	U
chloromethane	14	U	130	U	24	U	24	U	5	J	29	U	27	U	20	U	19	U	22	U
dichloroethene (total), 1,2-	7	U	66	U	12	U	12	U	5	J	15	U	15	U	2	J	10	U	11	U
methylene chloride	79	B	57	BJ	18	B	11	BJ	500	B	89	B	9	BJ	14	B	14	B	19	B
xylenes (total)	7	U	66	U	12	U	12	U	25	U	15	U	3	J	10	U	10	U	11	U
Semi-volatiles: ug/kg																				
pentachlorophenol	3200	U	4000	U	17000	U	-		4800	U	4700	U	4400	U	280	J	3600	U	3500	U

Notes:

ug/kg - microgram per kilogram

R - reanalysis

DUP - duplicate

(-) - not analyzed

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN SEDIMENTS
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA

Sample Number	A-SED-1	A-SED-2	A-SED-3	A-SED-4	A-SED-5	A-SED-5DUP	A-SED-6	A-SED-7	A-SED-8
Date Analyzed	4/91	4/91	4/91	4/91	4/91	4/91	4/91	4/91	4/91
Parameter: Units									
Inorganics: ug/L									
aluminum	1800	17200	19900	14800	16400	14400	11700	12600	12400
antimony	16.4 U	28 U	28.5 U	27.5 U	27.4 U	28.7 U	23.2 U	23 U	23.5 U
arsenic	10.2	254	60.1	55.9	49.7	41.5	91.4	20.6	16.7
barium	33.1 B	277	96.4 B	94.8 B	93.2 B	74.1 B	98.1	76.6 B	63.5 B
beryllium	0.22 B	2.3 B	1.9 B	5.6	1.6 B	1.5 B	0.9 B	0.83 B	0.8 B
cadmium	5.4	31.8	183	24.9	13.1	10.3	9.2	6.1	4.3
calcium	1240 B	5830	7490	5050	2840	3070	2760	4120	18800
chromium	10.3	115	1620	382	168	143	65.1	42.9	33.6
cobalt	1.7 U	11.1 B	13.6 B	9.1 B	11.4 B	9.7 B	4.1 B	4.1 B	8 B
copper	41.7	283	269	175	167	172	83.8	120	48.5
iron	6130	95400	45600	41200	40300	38900	29500	39200	46500
lead	121	489	831	263	205	220	106	175	186
magnesium	341 B	4780	6580	4330	5050	4480	3780	4850	4230
manganese	31.1	305	243	185	159	145	139	188	357
mercury	1.4	0.64	0.34	0.069 U	0.1	0.074 U	0.082 U	0.066 U	0.11 B
nickel	6.6 B	60.4	54.6	56	32.4	31.8	17.3 B	23.2	21.8
potassium	225 B	2510 B	3020	2050 B	2910	2550 B	2160 B	2470	1940 B
selenium	0.42 B	2.3 B	1.3 B	1.2 B	0.94	0.97 B	1.2 B	0.59 B	0.4 U
silver	1.2 U	2.7 B	47.9	9	5.5	2.6 B	1.7 U	1.7 U	1.8 U
sodium	245 B	4270	5220	3200	4860	5100	4950	2960	829 B
thallium	0.46 U	0.79 U	0.8	0.77 U	0.77	0.81 U	0.65 U	0.65	0.66 U
vanadium	11.4 B	119	63.4	118	73	73.2	51.2	60.5	51.3
zinc	162	936	626	568	483	543	238	589	279

Notes:

ug/kg - microgram per kilogram

< - below method detection limit

Qualifiers:

J - estimated value

B - analyte found in associated blank

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	A-GW1	A-B1W	A-GW2	A-GW3	A-MW-4A	A-MW5	A-MW-6A	A-MW-7
Parameter: Units								
Volatiles: ug/L								
acetone	16 B	9 BJ	10 B	19 B	11 B	13 B	8 BJ	25 B
benzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
butanone-2	3 BJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U
carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
chloroform	5 U	5 U	5 U	5 U	2 J	5 U	5 U	2 J
dichloroethane, 1,1-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
dichloroethane, 1,2-	3 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
dichlorothene (total), 1,2-	9	5 U	5 U	5 U	5 U	5 U	5 U	5 U
pentanone, 4-methyl-2-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
methylene chloride	6 B	4 BJ	5 B	6 B	5 B	4 BJ	4 BJ	7 B
tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
vinyl chloride	11	10 U	10 U	10 U	10 U	10 U	10 U	10 U
xylenes (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Semi-volatiles: ug/L								
benzoic acid	50 U	50 U	50 U	50	50 U	50 U	50 U	50 U
dimethylphenol, 2,4-	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U
methylphenol,2-	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U
methylphenol,4-	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U
phenol	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U

Notes:

ug/L - microgram per liter

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	A-MW8	A-MW-9A	A-MW-10	A-MW11A	A-MW12	A-B15W	A-B17W	A-B20W
Parameter: Units								
Volatiles: ug/L								
acetone	7 BJ	31 B	9 BJ	18 B	34 B	10 B	11 B	7300 U
benzene	5 U	5 U	1 J	5 U	5 U	5 U	5 U	430 J
butanone-2	10 U	3 BJ	10 U	10 U	10 U	10 U	10 U	10000
carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1000 U
chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1000 U
chloroform	5 U	5 U	5 U	2 J	5 U	5 U	5 U	1000 U
dichloroethane, 1,1-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1000 U
dichloroethane, 1,2-	5 U	5 U	5 U	2 J	5 U	5 U	5 U	200 J
dichlorothene (total), 1,2-	2 J	3 J	5 U	40	5 U	3 J	5 U	9500
pentanone, 4-methyl-2-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	25000
methylene chloride	4 U	5 B	5 B	5 B	7 B	3 BJ	6 B	1500 B
tetrachloroethene	5 U	5 U	1 J	8	5 U	5 U	5 U	1000 U
toluene	5 U	5 U	1 J	3 J	5 U	5 U	5 U	6200
trichloroethene	5 U	5 U	5 U	24	5 U	5 U	5 U	5 U
vinyl chloride	10 U	10 U	10 U	17	10 U	5 J	10 U	12000
xylenes (total)	5 U	3 J	2 J	5 U	5 U	5 U	5 U	650 J
Semi-volatiles: ug/L								
benzoic acid	50 U	50 U	50 U	50 U	50 U	50 U	50 U	33000
dimethylphenol, 2,4-	10 U	10 U	4 J	10 U	10 U	10 U	10 U	1600
methylphenol,2-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3500
methylphenol,4-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	28000
phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1800

Notes:

ug/L - microgram per liter

Qualifiers:
J - Value is estimated.
B - Analyte detected in associated blank as well as in sample.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March, 1991

Sample Number	A-GW1 (T)		A-GW1 (D)		A-B1W (T)		A-B1W (D)		A-GW2 (T)		A-GW2 (D)		A-GW3 (T)		A-GW3 (D)	
Parameter: Units																
Inorganics: ug/L																
aluminum	3250		19.5	U	1600		19.5	U	410		19.5	U	610		137	B
antimony	12.9	B	13	B	9.2	B	12.1	B	15.4	B	17.9	B	9.2	U	9.2	U
arsenic	26.5		16.5		11		6.5	U	10.6		8.4	B	6.5	U	6.5	U
barium	129	B	117	B	35.4	B	25.2	B	45.1	B	44.4	B	36.2	B	30	B
beryllium	0.2	U	0.2	U	0.2	U	0.2	U	0.2	B	0.2	U	0.3	B	0.2	U
cadmium	0.6	U	0.8	B	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
calcium	53900		54300		64700		65700		148000		149000		20000		19300	
chromium	8.9	B	1.3	U	3.6	B	1.3	U	1.3	U	1.3	U	2.9	B	1.3	U
cobalt	2	U	2	U	3.4	U	2	U	2	U	2	U	2	U	2	U
copper	14.5	B	0.9	U	2.9	B	0.9	U	3.2	B	0.9	U	3	B	0.9	U
iron	39600		29700		3210		38.2	B	17200		16700		7270		3710	
lead	7.3		0.6	U	2.1	B	0.6	U	2.9	B	0.6	U	15.4		0.6	U
magnesium	38900		39400		13100		13300		51200		51600		2360	B	2580	B
manganese	758		750		50.5		15.7		717		717		65.1		60.6	
mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	8.2	B	5	B	3.5	U	3.5	U	6.7	B	4.8	B	3.5	U	3.5	U
potassium	21000		20600		2550	B	2450	B	102000		103000		1180	B	1320	B
selenium	0.6	U	0.6	U	3.4	B	3.6	B	0.6	U	0.6	U	0.65	B	0.6	U
silver	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	159000		157000		13200		12500		201000		203000		10700		10900	
thallium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	13	B	1.3	B	6.6	B	1	U	4.2	B	3.6	B	1.7	B	1	U
zinc	104		51.4		31		24.7		33.9		21.5		18	B	4.7	B

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March, 1991

Sample Number	A-MW-4A (T)		A-MW-4A (D)		A-MW5 (T)		A-MW5 (D)		A-MW-6A (T)		A-MW-6A (D)		A-MW-7 (T)		A-MW-7 (D)	
Parameter: Units																
Inorganics: ug/L																
aluminum	5070		49.3	B	1950		19.5	U	171	B	19.5	U	652		33.6	B
antimony	53.3	U	53.3	U	17.4	B	11.1	B	9.2	U	9.2	U	9.2	U	9.2	U
arsenic	8.2	B	3.6	B	6.5	U	6.5	U	6.5	U	6.5	U	7.1	B	6.5	U
barium	70.8	B	36.1	B	36.4	B	31	B	16.7	B	16.4	B	114	B	113	B
beryllium	0.13	U	0.13	U	0.4	B	0.2	B	0.2	U	0.2	U	0.2	U	0.2	U
cadmium	3.7	U	3.7	U	0.6	U	0.6	U	0.6	U	0.6	U	0.87	B	0.6	B
calcium	59800		59000		116000		121000		69700		67100		44700		44800	
chromium	8.1	B	2.6	U	3.2	B	1.3	U	1.3	U	1.3	U	2.6	B	1.3	U
cobalt	5.4	U	5.4	U	2	U	2	U	2	U	2	U	3.6	B	4.6	B
copper	2.2	U	2.2	U	3.9	B	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
iron	4080		392		4270		613		472		384		547		25.6	B
lead	14.3		3.5		2.3	B	0.6	U	0.9	B	0.6	U	1	B	0.6	U
magnesium	11800		11500		62500		65000		4820	B	4610	B	18500		19200	
manganese	51.7		43		418		396		43.4		42.3		239		235	
mercury	0.08	U	0.08	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	8.6	U	8.6	U	4.3	B	3.5	B	3.5	U	3.5	U	3.5	U	4	B
potassium	5810		5410		30500		31300		2790	B	2590	B	4300	B	4680	B
selenium	0.9	U	0.9	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
silver	4	U	4	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	16000		16200		246000		25600		40200		38400		141000		149000	
thallium	1.5	U	1.5	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	11.5	B	3.5	U	7.6	B	3.8	B	1.3	B	1	U	3.4	B	1	U
zinc	23.9		17.1	B	50.4		38.2		28.2		29.1		32.2		39.3	

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March, 1991

Sample Number	A-MW8 (T)		A-MW8 (D)		A-MW-9A (T)		A-MW-9A (D)		A-MW-10 (T)		A-MW-10 (D)		A-MW11A (T)		A-MW11A (D)	
Parameter: Units																
Inorganics: ug/L																
aluminum	163	B	19.5	U	1430		19.5	U	726		19.5	U	498		30	B
antimony	40.7	B	39.8	B	17.9	B	23	B	9.2	U	9.2	U	13.3	B	12.5	B
arsenic	37.3		40.3		415		411		17.3		9.9	B	6.5	U	7.7	B
barium	708		695		375		376		53.1	B	49.6	B	21	B	19.8	B
beryllium	0.2	U	0.2	U	0.2	B	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
cadmium	1.7	B	2	B	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
calcium	121000		118000		45000		44800		33400		33500		49700		49100	
chromium	1.3	U	1.3	U	2.4	B	1.3	U	2.5	B	1.3	U	2	B	1.3	U
cobalt	2.8	B	2	U	2	U	2	U	3.8	B	4.5	B	12.8	B	13	B
copper	2.6	B	1.4	B	3.7	B	1	B	2.2	B	0.9	U	0.93	B	0.9	U
iron	87300		84600		52900		53700		1480		304		6550		5630	
lead	0.6	U	0.6	U	1.6	B	0.6	U	1.6	B	0.6	U	0.7	B	0.6	U
magnesium	190000		186000		91700		92900		9770		9910		54700		56100	
manganese	354		340		386		377		204		198		1150		1100	
mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	3.5	U	6.9	B	10	B	4.4	B	5.1	B	3.5	U	4.4	B	5.1	B
potassium	37200		36500		19300		19300		2390	B	2530	B	6080		6290	
selenium	3	U	3	U	3	U	3	U	0.6	U	0.6	U	0.6	U	0.6	U
silver	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	1750000		1740000		976000		990000		21200		22200		123000		126000	
thallium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	5.8	B	5.3	B	5	B	3.1	B	2.7	B	1	U	2.9	B	1	U
zinc	92.4		79.1		121		118		29.3		28.8		29		72.7	

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March, 1991

Sample Number	A-MW12 (T)		A-MW12 (D)		A-B15W (T)		A-B15W (D)		A-B17W (T)		A-B17W (D)		A-B20W (T)		A-B20W (D)	
Parameter: Units																
Inorganics: ug/L																
aluminum	670		19.5	U	4590		19.5	U	4890		19.5	U	3100		19.5	U
antimony	15.7	B	13.3	B	22.9	B	21.6	B	36.2	B	35.2	B	9.2	U	11.2	B
arsenic	212		206		29.5		27.7		17.6		6.5	U	191		156	
barium	162	B	161	B	97.5	B	64.1	B	77.6	B	32	B	6920		6880	
beryllium	0.29	B	0.2	U	0.37	B	0.2	B	0.2	U	0.2	U	0.6	B	0.2	U
cadmium	0.82	B	0.6	U	1	B	0.6	U	2.3	B	0.6	U	5.5		1.1	B
calcium	100000		98000		183000		188000		251000		248000		422000		436000	
chromium	1.3	U	1.3	U	10.2		1.3	U	8.7	B	1.3	U	10.1		1.3	U
cobalt	2.6	B	2	U	5	B	2	U	2	U	2	U	13.6	B	4.7	B
copper	3.3	B	0.9	U	60.9		0.9	U	43.2		0.9	U	13.6	B	0.9	U
iron	44300		41900		10600		4300		26500		1620		90300		75700	
lead	1.6	B	0.6	U	43.7		0.6	B	98		0.6	U	37.2		0.6	U
magnesium	47800		48300		61500		63100		33200		33000		119000		125000	
manganese	331		305		484		437		205		88.3		3220		3240	
mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	3.5	U	3.5	U	25.5	B	6.5	B	11.5	B	3.5	U	8	B	3.5	U
potassium	42600		4500		37200		38200		19500		20000		105000		114000	
selenium	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	6	U	0.6	U
silver	1.6	U	1.6	U	1.8	B	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	131000		137000		161000		167000		38100		40100		1040000		1040000	
thallium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	5	B	1.5	B	19.2	B	3.3	B	18.2	B	1.9	B	42.8	B	21.6	B
zinc	41.9		33.7		229		107		834		193		110		18.7	B

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (DEEP AQUIFIER)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March/June 1991

Sample Number	A-MW-1B		A-MW-4B		A-MW-6B		A-MW-9B		A-MW-9BDUP		A-MW-10B		A-MW-11B	
Date Analyzed	3/91	6/91	3/91	6/91	3/91	6/91	3/91	6/91	3/91	6/91	3/91	6/91	3/91	6/91
Parameter: Units														
Volatiles: ug/L														
acetone	24 BJ	25 BJ	18 B	-	49 B	10 U	9 BJ	10 BJ	7 BJ	-	3 BJ	-	28 B	-
butanone-2	33 U	30 U	10 U	-	4 BJ	10 U	15 U	15 U	12 U	-	10 U	-	10 U	-
carbon disulfide	16 U	15 U	5 U	-	5 U	5 U	8 U	8 U	6 U	-	2 J	-	5 U	-
chloroform	16 U	15 U	1 J	-	5 U	5 U	8 U	8 U	6 U	-	1 J	-	5 U	-
dichloroethane, 1,2-	29 U	44	5 U	-	5 U	5 U	8 U	8 U	1 J	-	5 U	-	5 U	-
dichloroethene, 1,1-	4 J	8 J	5 U	-	5 U	5 U	8 U	8 U	1 J	-	1 J	-	5 U	-
dichlorothene (total), 1,2-	320 U	540	5 U	-	2 J	3 J	160 J	250	210	-	100	-	5 U	-
methylene chloride	10 BJ	15 U	6 B	-	12 B	2 BJ	5 BJ	2 BJ	4 BJ	-	3 J	-	6 B	-
toluene	16 U	15 U	5 U	-	5 U	5 U	8 U	8 U	6 U	-	5 U	-	1 J	-
trichloroethene	100 U	170	5 U	-	5 U	5 U	13	17	17	-	19	-	5 U	-
vinyl chloride	82 U	160	10 U	-	10 U	10 U	52	86	74	-	20	-	10 U	-
xylenes (total)	16 J	15 U	1 J	-	5 U	5 U	8 U	8 U	6 U	-	5 U	-	2 J	-

Notes:

(-) - not analyzed

ug/l - microgram per liter

< - less than

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

J - Estimated value.

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (DEEP AQUIFIER)
AREA A - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRINIA

Sample Number	A-MW-1B (T)	A-MW-1B (D)	A-MW-4B (T)	A-MW-4B (D)	A-MW-6B (T)	A-MW-6B (D)	A-MW-9B (T)	A-MW-9B (D)	A-MW-9BDUP (T)	A-MW-9BDUP (D)	A-MW-11B (T)	A-MW-11B (D)
Date Analyzed	3/91		3/91		3/91		3/91		3/91		3/91	
Parameter: Units												
Inorganics: ug/L												
aluminum	33.3 B	19.5 U	536	93.4 B	170 B	19.5 U	322	19.5 U	338	19.5 U	960	19.6 B
antimony	9.2 U	12.1 B	9.2 U	9.2 U	9.6 B	12.1 B	9.2 U	10 B	9.2 U	9.2 U	9.2 U	9.2 U
arsenic	7.8 B	10.5	7.5 B	6.5 U	6.5 U	6.5 U	19.5	15	13.3	14.1	6.6 B	6.5 U
barium	169 B	171 B	155 B	154 B	91.6 B	93.3 B	70.1 B	67.9 B	68.9 B	70 B	60.4 B	51.9 B
beryllium	0.31 B	0.31 B	0.2 U	0.2 U	0.2 U	0.31 B	0.2 U	0.2 U	0.2 U	0.2 U	0.28 B	0.2 U
cadmium	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
calcium	290000	292000	296000	293000	162000	163000	106000	102000	104000	107000	87600	80100
chromium	1.3 U	1.3 U	2.5 B	4.3 B	2.4 B	1.3 U	2.1 B	1.3 U	1.3 U	1.3 U	5.4 B	1.3 U
cobalt	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
copper	2.1 B	0.9 U	1.4 B	0.9 U	1.8 B	0.9 U	1.5 B	0.9 U	2.4 B	0.9 U	4.2 B	0.9 U
iron	12100	12200	5840	1920	2890	790	4630	1010	4410	1050	8400	1180
lead	0.6 U	0.6 U	0.9 B	1.2 B	0.9 B	0.6 U	1.2 B	1.6 B	1.4 B	0.6 U	4.3	0.6 U
magnesium	15000	15200	9150	9470	6710	6810	4950 B	4680 B	4780 B	4850 B	6580	6160
manganese	349	350	245	208	103	84.5	131	102	127	107	152	83.6
mercury	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
nickel	3.5 U	3.5 U	3.5 U	3.5 U	8 B	3.5 U	4 B	3.5 U	4.4 B	3.5 U	5.7 B	3.5 U
potassium	4360 B	4560 B	8490	7870	3270 B	3170 B	5440	5450	5300	5560	3300 B	3220 B
selenium	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
silver	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.8 B	1.6 U	1.6 U
sodium	282000	281000	177000	185000	132000	133000	325000	317000	319000	336000	92300	94000
thallium	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
vanadium	2 B	2.4 B	11.8 B	2.4 B	5.7 B	1.3 B	5.9 B	1.2 B	5.6 B	1.8 B	7.5 B	1 U
zinc	9.3 B	8.4 B	24.1	9.6 B	8.7 B	5.9 B	12.5 B	7.7 B	12.8 B	7.1 B	20.6	5.6 B

Notes:

ug/l - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

U - Compoun[illegible]palyzed for but not detected

SUMMARY OF CH2M HILL ANALYTICAL RESULTS OF ORGANICS IN SURFACE WATER
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
April 1991

Sample Number	B-SW-1		B-SW-1DUP		B-SW-2		B-SW-3		B-SW-4	
Parameter: Units										
Volatiles: ug/L										
acetone	15	B	13	B	11	B	8	BJ	7	BJ
benzene	5	U	5	U	25		7		3	J
dichloroethane, 1,1-	5	U	5	U	6		2	J	1	J
dichloroethane, 1,2-	5	U	5	U	32		2		5	U
dichloroethene, 1,1-	5	U	5	U	3	J	5	U	5	U
dichloroethene (total), 1,2-	5	U	5	U	78		26		18	
methyl-2-pentanone, 4-	10	U	1	BJ	10	U	10	U	10	U
methylene chloride	10	B	3	BJ	3	BJ	2	BJ	2	BJ
trichloroethane, 1,1,1-	5	U	5	U	1	J	5	U	5	U
trichloroethene	5	U	5	U	130		36		20	
vinyl chloride	10	U	10	U	42		18		10	

Notes:

ug/L - microgram per liter

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN SURFACE WATER
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA

Sample Number	B-SW-1	B-SW-1DUP	B-SW-2	B-SW-3	B-SW-4
Date Analyzed	4/91	4/91	4/91	4/91	4/91
Parameter: Units					
Inorganics: ug/L					
aluminum	31600	29400	1010	113 B	516
antimony	53.3 U	53.3 U	53.3 U	53.3 U	53.3 U
arsenic	22.4	21.6	4.4 B	3.7 B	5.7 B
barium	468	470	188 B	95.9 B	92.9 B
beryllium	1 B	0.97 B	0.13 U	0.13 U	0.13 U
cadmium	28.8	28.3	3.7 U	3.7 U	3.7 U
calcium	71400	72100	10600	43900	48500
chromium	79.6	77.1	4.7 B	2.6 U	8.5 B
cobalt	15.7 B	16.5 B	5.4 U	5.4 U	5.4 U
copper	212	191	26.2	8.4 B	8.8 B
iron	58700	56300	18300	3660	8010
lead	720	648	31.6	4.1	15.2
magnesium	9870	10100	19800	11800	12600
manganese	548	488	459	290	286
mercury	0.51	0.7	0.08 U	0.08 U	0.08 U
nickel	84.3	74.7	13.9 B	9.6 B	8.6 U
potassium	11500	11000	11100	4430 B	4870 B
selenium	1.8 B	1.9 B	0.9 U	0.9 U	0.9 B
silver	17.4	10.7	8 B	4 U	4 U
sodium	11600	10800	50500	31200	29800
thallium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
vanadium	135	130	5.8 B	3.5 U	3.5 U
zinc	1660	1680	104	14.5 B	41.7

Notes:

ug/L - microgram per liter

Qualifiers:

B - Reported value is less than the Contract Required Detection limit, but greater than the Instrument Detection Limit

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN SEDIMENTS
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
April 1991

Sample Number	B-SED-1	B-SED-1DUP	B-SED-2	B-SED-2R	B-SED-3	B-SED-3R	B-SED-4	B-SED-4R
Parameter: Units								
Volatiles: ug/kg								
acetone	74 B	10 BJ	670 B	780 B	58 B	69 B	570 BD	290 B
benzene	9 U	10 U	U	25 U	7 U	7 U	11 DJ	5 J
butanone, 2-	23 B	20 U	160	140	15 U	15 U	150 D	61
carbon disulfide	9 U	10 U	25 U	25	2 J	4 J	52 U	21 U
chlorobenzene	9 U	10 U	25 U	25 U	7 U	4 J	52 U	21 U
chloromethane	17 U	20 U	6 J	50 U	15 U	15 U	25 DJ	7 J
dichloroethene, 1,1-	9 U	10 U	25 U	25 U	7 U	7 U	11 DJ	21 U
dichloroethene (total), 1,2-	9 U	10 U	25 U	25 U	7 U	7 U	140 D	77 U
methylene chloride	62 B	76 B	150 B	41 B	170 B	130 B	200 BD	530 B
tetrachloroethene	9 U	10 U	5 J	25 U	7 U	7 U	97 D	93
toluene	4 J	10 U	21 J	11 J	7 U	7 U	52 U	21 U
trichloroethene	9 U	10 U	5 J	25 U	7 U	2 J	98 D	89
vinyl chloride	17 U	20 U	50 U	50 U	15 U	15 U	70 DJ	28 J
xylenes (total)	9 U	10 U	25 U.	25 U	3 J	7 U	11 DJ	6 J
Semivolatiles: ug/kg								
pentachlorophenol	110 J	2200 U	1900 U	-	3000 U	-	6400 U	-

Notes:

ug/kg - microgram per kilogram

DUP - duplicate

R - reanalysis

(-) - not analyzed

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN SEDIMENTS
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA

Sample Number	B-SED-1		B-SED-1DUP		B-SED-2		B-SED-3		B-SED-4	
Date Analyzed	4/91		4/91		4/91		4/91		4/91	
Parameter: Units										
Inorganics: mg/kg										
aluminum	14700		13300		11700		2370		21600	
antimony	26.3	U	25.1	U	28.1	U	18.8	U	41.2	U
arsenic	5.3		4.1	B	45.1		5		21.7	
barium	169		119		156		20.6	B	225	
beryllium	0.58	B	0.51	B	1.1	B	0.27	B	1.3	B
cadmium	13.9		8.3		71.7		5.4		46.2	
calcium	5830		4760		4310		540	B	12200	
chromium	44.4		31.5		78.7		7.2		130	
cobalt	2.7	U	2.6	U	15	B	5.5	B	13	B
copper	96.5		61.3		275		55.6		441	
iron	22400		15400		125000		4190		51200	
lead	314		135		678		100		1260	
magnesium	2920		2100	B	1720	B	375	B	3940	
manganese	155		106		444		13.6		321	
mercury	0.16		0.15		0.49		0.05	U	2.6	
nickel	38.2		21.2		70.6		6.6	B	69.5	
potassium	1740	B	1420	B	829	B	186	B	1430	B
selenium	0.68	B	0.75	B	0.77	B	0.32	U	2	B
silver	5.6		1.9	U	40.4		1.4	U	91	
sodium	525	B	427	B	669	B	263	B	824	B
thallium	0.74	U	0.71	U	0.79	U	0.53	U	1.2	U
vanadium	78.9		55.1		78.4		13.3	B	165	
zinc	694		451		3300		160		1560	

Notes:

mg/kg - milligram per kilogram

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit

U - Compound was analyzed for, but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-MW1		B-MW-2A		B-MW-3A		B-MW-3ADUP		B-GW4		B-GW5		B-GW6	
Parameter: Units														
Volatiles: ug/L														
acetone	10	U	14	B	220	BJ	210	BJ	8300	B	21	B	36	B
benzene	5	U	5	U	1100		1200		250	U	5	U	5	U
chloroethane	10	U	10	U	250	U	250	U	500	U	16		10	U
chlorobenzene	110		5	U	120	U	120	U	250	U	5	U	5	U
chloroform	5	U	1	J	5	U	5	U	5	U	5	U	5	U
dichloroethene, 1,1-	5	U	5	U	170		180		250	U	5	U	5	U
dichloroethane, 1,1-	5	U	5	U	320		340		250	U	22		5	U
dichloroethane, 1,2-	11		3	J	490		520		250	U	5	U	5	U
dichlorothene (total), 1,2-	5	U	4	J	1400		1400		110	J	5	U	5	U
methyl-2-pentanone, 4-	10	U	10	U	250	U	250	U	2100		10	U	10	U
methylene chloride	7	B	7	B	170	B	160	B	290	B	10	B	8	B
tetrachloroethene	2	J	8		5	J	48	J	250	U	5	U	5	U
toluene	5	U	3	J	120	U	120	U	250	U	5	U	5	U
trichloroethane, 1,1,1-	5	U	5	U	170		180		250	U	5	U	5	U
trichloroethene	2	J	3	J	1300		2100		250	U	5	U	5	U
vinyl chloride	10	U	10	U	410		350		500	U	10	U	10	U
xylenes (total)	5	U	5	U	120	U	250	U	78	J	5	U	5	U
Semivolatiles: ug/L														
chloro-3-methyl-phenol, 4-	10	U	10	U	10	U	10	U	3	J	10	U	10	U
dimethylphenol, 2,4-	10	U	10	U	10	U	10	U	10		10	U	10	U
methylphenol,4-	10	U	10	U	10	U	10	U	10		10	U	10	U
pentachlorophenol	50	U	50	U	50	U	50	U	7	J	50	U	50	U
phenol	10	U	10	U	10	U	10	U	7	J	10	U	10	U

Notes:

ug/L - microgram per liter

DUP - duplicate

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-GW6DUP		B-MW-7		B-MW-8		B-MW-9		B-MW-10		B-MW-11	
Parameter: Units												
Volatiles: ug/L												
acetone	10	B	9	BJ	10	U	8	BJ	7	BJ	300	B
benzene	5	U	5	U	5	U	5	U	5	U	35	J
chloroethane	10	U	10	U	10	U	10	U	10	U	250	U
chlorobenzene	5	U	1	J	5	U	5	U	5	U	120	U
chloroform	1	J	5	U	5	U	1	J	5	U	5	U
dichloroethene, 1,1-	5	U	5	U	5	U	5	U	5	U	120	U
dichloroethane, 1,1-	1	J	5	U	5	U	5	U	5	U	120	U
dichloroethane, 1,2-	5	U	5	U	5	U	5	U	5	U	68	J
dichlorothene (total), 1,2-	5	U	5	U	2	J	5	U	5	U	3200	
methyl-2-pentanone, 4-	10	U	10	U	10	U	10	U	10	U	250	
methylene chloride	5	B	7	B	6	B	7	B	7	B	170	B
tetrachloroethene	5	U	5	U	5	U	5	U	5	U	120	U
toluene	5	U	5	U	5	U	5	U	5	U	120	U
trichloroethane, 1,1,1-	5	U	5	U	5	U	5	U	5	U	120	U
trichloroethene	5	U	5	U	5	U	5	U	5	U	86	J
vinyl chloride	10	U	10	U	10	U	10	U	10	U	3000	
xylenes (total)	5	U	5	U	5	U	5	U	5	U	120	J
Semivolatiles: ug/L												
chloro-3-methyl-phenol, 4-	10	U	10	U	10	U	10	U	10	U	10	U
dimethylphenol, 2,4-	10	U	10	U	10	U	10	U	10	U	10	U
methylphenol,4-	10	U	10	U	10	U	10	U	10	U	10	U
pentachlorophenol	50	U	50	U	50	U	50	U	50	U	50	U
phenol	10	U	10	U	10	U	10	U	10	U	10	U

Notes:

ug/L - microgram per liter

DUP - duplicate

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-MW1 (T)		B-MW1 (D)		B-MW-2A (T)		B-MW-2A (D)		B-MW-3A (T)		B-MW-3A (D)		B-GW4 (T)		B-GW4 (D)	
Parameter: Units																
Inorganics: ug/L																
aluminum	467		223		481		33.2	B	167		44.7	B	1080		19.5	U
antimony	9.2	U	9.2	U	9.2	U	9.2	U	10.1	B	13.9	B	18.8	B	23.8	B
arsenic	9.5	B	6.5	U	7	B	6.5	U	7.5	B	10.7		12.7		12.1	
barium	24.9	B	24	B	38.5	B	37.5	B	36.4	B	35.8	B	22.2	B	16.3	B
beryllium	0.31	B	0.31	B	0.2	U	0.2	U	0.2	U	0.2	U	0.24	B	0.2	U
cadmium	0.6	U	0.6	U	0.6	U	0.6	U	1.1	B	1.2	B	0.6	U	0.6	U
calcium	89500		89400		27100		26700		74800		72000		112000		114000	
chromium	1.5	B	1.3	U	4.2	B	1.3	U	1.3	U	1.3	U	27.6		13.8	
cobalt	19.2	B	19.2	B	4.4	B	3.9	B	6.5	B	8.4	B	2	U	2	U
copper	3.7	B	0.9	U	1.4	B	0.9	U	2.7	B	1.6	B	3.3	B	0.9	U
iron	3820		3520		3700		3290		6760		6220		4300		859	
lead	0.6	U	0.6	U	1	B	0.6	U	0.8	B	0.6	U	9.1		0.6	U
magnesium	34700		35300		6710		6640		25100		24500		8820		9210	
manganese	1260		1280		388		360		1680		1630		179		168	
mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	16.6	B	13.4	B	3.5	U	3.5	U	11.7	B	7.2	B	4.7	B	3.5	U
potassium	4450	B	4290	B	2320	B	2420	B	5060		5180		10500		11100	
selenium	0.6	U	0.6	U	0.6	U	0.6	U	1.2	B	0.6	U	0.6	U	0.6	U
silver	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	16500		15700		19600		21000		43400		42700		56700		58200	
thallium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	1.2	B	1.1	B	2.1	B	1	B	1	B	1	U	22.3	B	18.8	B
zinc	46.6		44.8		32.9		27		36.1		35.6		9	B	9.3	B

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-GW5 (T)		B-GW5 (D)		B-GW6 (T)		B-GW6 (D)		B-MW-7 (T)		B-MW-7 (D)		B-MW-8 (T)	
Parameter: Units														
Inorganics: ug/L														
aluminum	52000		19.5	U	2860		19.5	U	2810		71.2	B	59.9	B
antimony	48.4	B	9.2	U	9.2	U	13.3	B	11.6	B	11.6	B	12.8	B
arsenic	60.7		6.5	U	7.1	U	6.5	U	7.5	B	11.8		11.6	
barium	418		13	B	89.6	B	81.4	B	122	B	112	B	56.6	B
beryllium	2	B	0.24	B	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
cadmium	9.8		0.6	U	0.63	U	0.6	U	0.75	B	0.69	B	2.2	B
calcium	195000		109000		117000		118000		113000		114000		53800	
chromium	492		1.3	U	6.1	B	1.3	U	5.7	B	1.3	U	1.3	U
cobalt	18.7	B	2	U	2	U	2	U	2	U	2	U	2	U
copper	103		0.9	U	3.9	B	0.9	U	12.5	B	0.96	B	2.7	B
iron	155000		153		6180		2850		5810		3850		8500	
lead	77		1	B	3.2		0.6	U	17.7		0.6	U	0.6	U
magnesium	14200		6030		10500		10900		27500		27700		11300	
manganese	509		47		366		369		476		460		448	
mercury	0.1	B	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	67.5		3.5	U	3.5	U	3.5	U	14.9	B	6.5	B	8.2	B
potassium	117000		6580		6880		6910		21700		22300		5660	
selenium	6.6		0.6	U	3.6	B	3.1	B	0.6	U	0.6	U	0.6	U
silver	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	26400		28300		14000		14200		86100		88000		22600	
thallium	7.2	B	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	206		8	B	9.2	B	1.9	B	11.6	B	4.2	B	1	U
zinc	193		1.6	B	21		13.5	B	43.4		16.2	B	23.4	

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit

U - Com[illegible] was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (SHALLOW WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-MW-8 (D)		B-MW-9 (T)		B-MW-9 (D)		B-MW-10 (T)		B-MW-10 (D)		B-MW-11 (T)		B-MW-11 (D)	
Parameter: Units														
Inorganics: ug/L														
aluminum	21.2	B	85	B	37.2	B	840		82.8	B	2410		50.6	B
antimony	9.2	U	9.2	U	9.2	U	9.2	U	9.2	U	21.8	B	22	B
arsenic	12.2		6.5	U	6.5	U	9.8	B	11.8		22		30.3	
barium	56.6	B	61	B	61	B	38.9	B	37.7	B	57.1	B	54.9	B
beryllium	0.2	U	0.2	B	0.21	B	0.2	U	0.31	B	0.2	U	0.2	U
cadmium	1	B	0.6	B	0.95	B	0.6	U	0.6	U	2.4	B	2.3	B
calcium	54600		25300		25100		15000		14500		12300		12700	
chromium	1.3	U	1.3	U	1.3	U	3.8	U	1.3	U	1.3	B	1.3	U
cobalt	2	U	16.3	B	17.2	B	4.1	B	3.3	B	4	B	6.1	B
copper	1.6	B	1.6	B	1.6	B	2.9	B	1.1	B	7.9	B	6.9	B
iron	9230		1270		1180		2100		1290		101000		101000	
lead	0.6	U	0.6	B	0.6	B	3.1	U	0.6	U	2.8	U	0.6	U
magnesium	11500		7200		7120		6530		6520		22800		23100	
manganese	449		1590		1560		240		233		709		720	
mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
nickel	6.2	B	23	B	17.5	B	12.8	B	6.3	B	8.3	B	6.4	B
potassium	5850		2970	B	2940	B	2580	B	2640	B	4160	B	3950	B
selenium	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	6	U	6	U
silver	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	23700		30800		31900		16400		16500		59000		59700	
thallium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	1	U	1	U	1	U	1.5	U	1	U	6.2	B	1	U
zinc	24		25.9		26.8		23.6		20.5		51		76.8	

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR ORGANICS IN GROUNDWATER (DEEP WELLS)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA
March 1991

Sample Number	B-MW-2B			B-MW-3B			B-MW-5B		
Parameter: Units									
Volatiles: ug/L									
acetone		11	B		9	BJ		8	BJ
benzene	<	5	U		5		<	5	U
chloroethane	<	10	U	<	10	U	<	10	U
chlorobenzene	<	5	U	<	5	U	<	5	U
dichloroethane, 1,1-	<	5	U	<	2	J	<	5	U
dichloroethene, 1,1-	<	5	U		5	U	<	5	U
dichloroethane, 1,2-		33			50		<	5	U
dichlorothene (total), 1,2-	<	5	U		7			3	J
methyl-2-pentanone, 4-	<	10	U	<	10	U	<	10	U
methylene chloride	<	5	U	<	7	B	<	5	U
tetrachloroethene	<	5	U	<	5	U	<	5	U
toluene	<	5	U	<	5	U		1	J
trichloroethane, 1,1,1-	<	5	U	<	5	U	<	5	U
trichloroethene	<	5	U		10			7	
vinyl chloride	<	10	U		3	J	<	10	U
xylenes (total)	<	5	U	<	5	U		3	J

Notes:

ug/l - microgram per liter

< - less than

Qualifiers:

J - Value is estimated.

B - Analyte found in associated blank as well as in sample.

U - Compound was analyzed for but not detected.

SUMMARY OF CH2M HILL ANALYTICAL RESULTS FOR INORGANICS IN GROUNDWATER (DEEP AQUIFIER)
AREA B - CAMP ALLEN LANDFILL
NORFOLK NAVAL BASE, NORFOLK, VIRGINIA

Sample Number	B-MW-2B (T)		B-MW-2 (D)		B-MW-3B (T)		B-MW-3B (D)		B-MW-5B (T)		B-MW-5B (D)	
Parameter: Units												
Inorganics: ug/L												
aluminum	562		23	B	731		41.5	B	416		19.5	U
antimony	53.3	U	53.3	U	9.2	U	9.2	U	9.2	U	9.2	U
arsenic	3.5	B	3.1	B	6.5	U	6.5	U	6.5	U	6.5	U
barium	86	B	85.1	B	39.1	B	35.2	B	19.2	B	16.5	B
beryllium	0.13	U	0.13	U	0.2	U	0.2	U	0.49	B	0.2	U
cadmium	3.7	U	3.7	U	0.6	U	0.6	U	0.6	U	0.6	U
calcium	179000		178000		63900		62200		65600		51400	
chromium	2.6	U	2.6	U	3.9	B	1.3	U	4.8	B	1.3	U
cobalt	5.4	U	5.4	U	2	U	2	U	15.2	B	2	U
copper	2.2	U	2.2	U	6.9	B	0.9	U	1.4	B	0.9	U
iron	2150		1200		4650		1210		11100		4650	
lead	1.6	B	2	B	2.7	B	0.6	U	2.6	B	0.6	U
magnesium	9600		9590		3210	B	3080	B	5770		5740	
manganese	115		108		137		103		146		102	
mercury	0.08	U	0.08	U	NR		0.1	U	0.1	U	0.1	U
nickel	8.6	U	8.6	U	9.2	B	8	B	20.5	B	3.5	U
potassium	3880	B	3940	B	2560	B	2410	B	2180	B	2330	B
selenium	1.4	B	0.9	U	0.6	U	0.6	U	0.6	U	0.6	U
silver	4.3	B	4	U	1.6	U	1.6	U	1.6	U	1.6	U
sodium	183000		183000		31300		31900		34300		36000	
thallium	1.5	U	1.5	U	0.7	U	0.7	U	0.7	U	0.7	U
vanadium	3.5	U	3.5	U	5.6	B	1	U	5.8	B	1.1	B
zinc	11.2	B	14.3	B	11.2	B	5	B	87.9		5.6	B

Notes:

ug/L - microgram per liter

T - total metals

D - dissolved metals

Qualifiers:

B - Reported value is less than the Contract Required Detection Limit, but greater then the Instrument Detection Limit.

U - Compound was analyzed for but not detected.

NR - Not Requested

APPENDIX Y

APPENDIX Y
ARAR AND BACKGROUND COMPARISONS

AREA A - ARAR AND BACKGROUND COMPARISONS

1) Surface Soil - Metals
2) Sediment - VOCs
3) Sediment - SVOCs
4) Sediment - PnPs
5) Sediment - Metals
6) Surface Water - VOCs
7) Surface Water - SVOCs
8) Surface Water - PnPs
9) Surface Water - Metals (Total & Dissolved)
10) Groundwater - Round 2, VOCs (Shallow)
11) Groundwater - Round 2, VOCs (Deep)
12) Groundwater - Round 3, VOCs (Shallow)
13) Groundwater - Round 3, VOCs (Deep)
14) Groundwater - SVOCs (Shallow)
15) Groundwater - SVOCs (Deep)
16) Groundwater - PnPs (Shallow)
17) Groundwater - PnPs (Deep)
18) Groundwater - Metals, Total (Shallow)
19) Groundwater - Metals, Total (Deep)

#66 Comparison Between USGS Background (1984) Criteria and Surface Soil (Metals)

CAS #	Chemical Name	Maximum Background Concentration (mg/kg)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	100000	0	5
7440382	Arsenic	73	0	5
7440393	Barium	1500	0	5
7440439	Cadmium	1	3	5
7440702	Calcium	280000	0	5
7440473	Chromium	1000	0	5
7440484	Cobalt	70	0	5
7440508	Copper	700	0	5
7439896	Iron	100000	0	5
7439921	Lead	300	1	5
7439965	Manganese	7000	0	5
7439976	Mercury	3.4	0	5
7440020	Nickel	700	0	5
7440280	Thallium	23	0	5
7440622	Vanadium	300	0	5
7440666	Zinc	2900	0	5

#52 ARAR Comparison Between NOAA Sediment Criteria and Sediment (VOCs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of Times Analyzed
75150	Carbon Disulfide	NA	0	5
78933	2-Butanone	NA	0	5
108907	Chlorobenzene	NA	0	5

#53 ARAR Comparison Between NOAA Sediment Criteria and Sediment (SVOCs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of Times Analyzed
83329	Acenaphthene	150	0	5
85018	Phenanthrene	225	2	5
120127	Anthracene	85	0	5
86748	Carbazole	NA	0	5
206440	Fluoranthene	600	1	5
85687	Butylbenzylphthalate	NA	0	5
56553	Benzo(a)anthracene	230	1	5
218019	Chrysene	400	1	5
117817	bis(2-Ethylhexyl)phthalate	NA	0	5
205992	Benzo(b)fluoranthene	NA	0	5
207089	Benzo(k)fluoranthene	NA	0	5
50328	Benzo(a)pyrene	400	0	5
193395	Indeno(1,2,3-cd)pyrene	NA	0	5
191242	Benzo(g,h,i)perylene	NA	0	5

#54 ARAR Comparison Between NOAA Sediment Criteria and Sediment (PnPs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of times Analyzed
319846	alpha-BHC	NA	0	5
319857	beta-BHC	NA	0	5
319868	delta-BHC	NA	0	5
58899	gamma-BHC (Lindane)	NA	0	5
959988	Endosulfan I	NA	0	5
60571	Dieldrin	0.02	1	5
72559	4,4'-DDE	2	5	5
72548	4,4'-DDD	1	5	5
50293	4,4'-DDT	2	5	5
7421363	Endrin aldehyde	NA	0	5
5103719	alpha-Chlordane	0.5	5	5
5103742	gamma-Chlordane	0.5	5	5
1114116	Aroclor-1232	NA	0	5
1109682	Aroclor-1260	NA	0	5

#51 ARAR Comparison Between NOAA Sediment Criteria and Sediment (Metals)

CAS #	Chemical Name	NOAA Criteria (mg/kg)	Number of Exceedences	Number of Times Analyzed
7440382	Arsenic	33	12	26
7440439	Cadmium	5	14	26
7440473	Chromium	80	16	26
7439921	Lead	35	20	26
7439976	Mercury	0.15	22	26
7440224	Silver	1	7	26
7440622	Vanadium	NA	0	26

#22 ARAR Comparison Between Federal AWQC and Surface Water (VOCs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
540590	1,2-Dichloroethene (total)	NA	0	9
79016	Trichloroethene	2.7	1	9
1330207	Xylene (total)	NA	0	9

#27 ARAR Comparison Between State WQC and Surface Water (VOCs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
540590	1,2-Dichloroethene (total)	NA	0	9
79016	Trichloroethene	27	0	9
1330207	Xylene (total)	NA	0	9

#23 ARAR Comparison Between Federal AWQC and Surface Water (SVOCs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
84742	Di-n-butylphthalate	34000	0	9
117817	bis(2-Ethylhexyl)phthalate	NA	0	9

#28 ARAR Comparison Between State WQC and Surface Water (SVOCs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
84742	Di-n-butylphthalate	NA	0	9
117817	bis(2-Ethylhexyl)phthalate	18	0	9

#24 ARAR Comparison Between Federal AWQC and Surface Water (PnPs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
72559	4,4'-DDE	NA	0	9
72548	4,4'-DDD	NA	0	9

#29 ARAR Comparison Between State WQC and Surface Water (PnPs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
72559	4,4'-DDE	NA	0	9
72548	4,4'-DDD	NA	0	9

#21 ARAR Comparison Between Federal AWQC and Surface Water (Metals-Total)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	9
7440360	Antimony	NA	0	9
7440382	Arsenic	0.0022	2	9
7440393	Barium	1000	0	9
7440417	Beryllium	NA	0	9
7440439	Cadmium	NA	0	9
7440702	Calcium	NA	0	9
7440473	Chromium	50	1	9
7440484	Cobalt	NA	0	9
7440508	Copper	NA	0	9
7439896	Iron	300	9	9
7439921	Lead	50	1	9
7439954	Magnesium	NA	0	9
7439965	Manganese	NA	0	9
7439976	Mercury	0.144	3	9
7440020	Nickel	13.4	1	9
7440097	Potassium	NA	0	9
7782492	Selenium	NA	0	9
7440224	Silver	50	0	9
7440235	Sodium	NA	0	9
7440280	Thallium	NA	0	9
7440622	Vanadium	NA	0	9
7440666	Zinc	NA	0	9

#26 ARAR Comparison Between State WQC and Surface Water (Metals-Dissolved)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	9
7440360	Antimony	NA	0	9
7440382	Arsenic	50	0	9
7440393	Barium	2000	0	9
7440417	Beryllium	NA	0	9
7440439	Cadmium	16	0	9
7440702	Calcium	NA	0	9
7440473	Chromium	NA	0	9
7440484	Cobalt	NA	0	9
7440508	Copper	1300	0	9
7439896	Iron	300	3	9
7439921	Lead	15	0	9
7439954	Magnesium	NA	0	9
7439965	Manganese	50	9	9
7439976	Mercury	0.144	0	9
7440020	Nickel	607	0	9
7440097	Potassium	NA	0	9
7782492	Selenium	172	0	9
7440224	Silver	NA	0	9
7440235	Sodium	NA	0	9
7440280	Thallium	NA	0	9
7440622	Vanadium	NA	0	9
7440666	Zinc	5000	0	9

#7 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	3	17
75092	Methylene Chloride	5	1	17
67641	Acetone	NA	0	17
540590	1,2-Dichloroethene (total)	NA	0	17
107062	1,2-Dichloroethane	5	0	17
78933	2-Butanone	NA	0	17
79016	Trichloroethene	5	2	17
71432	Benzene	5	1	17
108101	4-Methyl-2-Pentanone	NA	0	17
127184	Tetrachloroethene	5	0	17
108883	Toluene	1000	2	17
1330207	Xylene (total)	10000	0	17

#17 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	17
75092	Methylene Chloride	NA	0	17
67641	Acetone	NA	0	17
540590	1,2-Dichloroethene (total)	NA	0	17
107062	1,2-Dichloroethane	NA	0	17
78933	2-Butanone	NA	0	17
79016	Trichloroethene	NA	0	17
71432	Benzene	NA	0	17
108101	4-Methyl-2-Pentanone	NA	0	17
127184	Tetrachloroethene	NA	0	17
108883	Toluene	NA	0	17
1330207	Xylene (total)	NA	0	17

#2 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	5	15
540590	1,2-Dichloroethene (total)	NA	0	15
107062	1,2-Dichloroethane	5	2	15
79016	Trichloroethene	5	4	15
71432	Benzene	5	0	15

#12 ARAR Comparison Between State MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	15
540590	1,2-Dichloroethene (total)	NA	0	15
107062	1,2-Dichloroethane	NA	0	15
79016	Trichloroethene	NA	0	15
71432	Benzene	NA	0	15

#7 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
79345	1,1,2,2-Tetrachloroethane	NA	0	1
1330207	Xylene (total)	10000	0	1

#17 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
79345	1,1,2,2-Tetrachloroethane	NA	0	1
1330207	Xylene (total)	NA	0	1

#2 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	3	17
540590	1,2-Dichloroethene (total)	NA	0	17
67663	Chloroform	100	0	17
107062	1,2-Dichloroethane	5	2	17
78933	2-Butanone	NA	0	17
79016	Trichloroethene	5	6	17
127184	Tetrachloroethene	5	0	17
108883	Toluene	1000	0	17
1330207	Xylene (total)	10000	0	17
71432	Benzene	5	0	17

#12 ARAR Comparison Between State MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	17
540590	1,2-Dichloroethene (total)	NA	0	17
67663	Chloroform	NA	0	17
107062	1,2-Dichloroethane	NA	0	17
78933	2-Butanone	NA	0	17
79016	Trichloroethene	NA	0	17
127184	Tetrachloroethene	NA	0	17
108883	Toluene	NA	0	17
1330207	Xylene (total)	NA	0	17
71432	Benzene	NA	0	17

#8 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (SVOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
83329	Acenaphthene	NA	0	17
117817	bis(2-Ethylhexyl)phthalate	NA	0	17
84742	Di-n-butylphthalate	NA	0	17
84662	Diethylphthalate	NA	0	17
105679	2,4-Dimethylphenol	NA	0	17
95487	2-Methylphenol	NA	0	17
106445	4-Methylphenol	NA	0	17
91203	Naphthalene	NA	0	17
108952	Phenol	NA	0	17

#18 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (SVOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
83329	Acenaphthene	NA	0	17
117817	bis(2-Ethylhexyl)phthalate	NA	0	17
84742	Di-n-butylphthalate	NA	0	17
84662	Diethylphthalate	NA	0	17
105679	2,4-Dimethylphenol	NA	0	17
95487	2-Methylphenol	NA	0	17
106445	4-Methylphenol	NA	0	17
91203	Naphthalene	NA	0	17
108952	Phenol	1	2	17

#3 ARAR Comparison Betweem Federal MCLs and Groundwater Deep Wells (SVOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
111444	bis(2-Chloroethyl)ether	NA	0	17
117817	bis(2-Ethylhexyl)phthalate	NA	0	17
84742	Di-n-butylphthalate	NA	0	17
84662	Diethylphthalate	NA	0	17
91203	Naphthalene	NA	0	17
108601	2,2'-oxybis(1-Chloropropane)	NA	0	17
108952	Phenol	NA	0	17
120821	1,2,4-Trichlorobenzene	70	0	17

#13 ARAR Comparison Between State MCLs and Groundwater Deep Wells (SVOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
111444	bis(2-Chloroethyl)ether	NA	0	17
117817	bis(2-Ethylhexyl)phthalate	NA	0	17
84742	Di-n-butylphthalate	NA	0	17
84662	Diethylphthalate	NA	0	17
91203	Naphthalene	NA	0	17
108601	2,2'-oxybis(1-Chloropropane)	NA	0	17
108952	Phenol	1	2	17
120821	1,2,4-Trichlorobenzene	NA	0	17

#9 ARAR Comparison Between Federal MCLS and Groundwater Shallow Wells (PnPs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
309002	Aldrin	NA	0	17
1024573	Heptachlor epoxide	0.2	0	17
72548	4,4'-DDD	NA	0	17
5103742	gamma-Chlordane	NA	0	17

#19 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (PnPs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
309002	Aldrin	0.003	1	17
1024573	Heptachlor epoxide	0.001	3	17
72548	4,4'-DDD	NA	0	17
5103742	gamma-Chlordane	NA	0	17

#4 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (PnPs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
1024573	Heptachlor epoxide	0.2	0	17
50293	4,4'-DDT	NA	0	17

#14 ARAR Comparison Between State MCLs and Groundwater Deep Wells (PnPs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
1024573	Heptachlor epoxide	0.001	2	17
50293	4,4'-DDT	0.001	1	17

#6 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (Metals-Total)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	17
7440360	Antimony	6	1	17
7440382	Arsenic	50	5	17
7440393	Barium	2000	1	17
7440417	Beryllium	4	2	17
7440439	Cadmium	5	3	17
7440702	Calcium	NA	0	17
7440473	Chromium	100	3	17
7440484	Cobalt	NA	0	17
7440508	Copper	1300	0	17
7439896	Iron	NA	0	17
7439921	Lead	15	11	17
7439954	Magnesium	NA	0	17
7439965	Manganese	NA	0	17
7439976	Mercury	2	0	17
7440020	Nickel	100	2	17
7440097	Potassium	NA	0	17
7782492	Selenium	50	0	17
7440224	Silver	NA	0	17
7440235	Sodium	NA	0	17
7440280	Thallium	2	0	17
7440622	Vanadium	NA	0	17
7440666	Zinc	NA	0	17

#16 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (Metals-Total)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	17
7440360	Antimony	NA	0	17
7440382	Arsenic	50	5	17
7440393	Barium	1000	1	17
7440417	Beryllium	NA	0	17
7440439	Cadmium	0.4	3	17
7440702	Calcium	NA	0	17
7440473	Chromium	50	10	17
7440484	Cobalt	NA	0	17
7440508	Copper	1000	0	17
7439896	Iron	NA	0	17
7439921	Lead	50	5	17
7439954	Magnesium	NA	0	17
7439965	Manganese	NA	0	17
7439976	Mercury	0.05	5	17
7440020	Nickel	NA	0	17
7440097	Potassium	NA	0	17
7782492	Selenium	10	0	17
7440224	Silver	NA	0	17
7440235	Sodium	270000	4	17
7440280	Thallium	NA	0	17
7440622	Vanadium	NA	0	17
7440666	Zinc	50	15	17

#1 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (Metals–Total)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	18
7440360	Antimony	6	0	18
7440382	Arsenic	50	1	18
7440393	Barium	2000	0	18
7440417	Beryllium	4	0	18
7440439	Cadmium	5	1	18
7440702	Calcium	NA	0	18
7440473	Chromium	100	1	18
7440484	Cobalt	NA	0	18
7440508	Copper	1300	0	18
7439896	Iron	NA	0	18
7439921	Lead	15	2	18
7439954	Magnesium	NA	0	18
7439965	Manganese	NA	0	18
7439976	Mercury	2	0	18
7440020	Nickel	100	0	18
7440097	Potassium	NA	0	18
7782492	Selenium	50	0	18
7440224	Silver	NA	0	18
7440235	Sodium	NA	0	18
7440280	Thallium	2	1	18
7440622	Vanadium	NA	0	18
7440666	Zinc	NA	0	18

#11 ARAR Comparison Between State MCLs and Groundwater Deep Wells (Metals–Total)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	18
7440360	Antimony	NA	0	18
7440382	Arsenic	50	1	18
7440393	Barium	1000	0	18
7440417	Beryllium	NA	0	18
7440439	Cadmium	0.4	1	18
7440702	Calcium	NA	0	18
7440473	Chromium	50	1	18
7440484	Cobalt	NA	0	18
7440508	Copper	1000	0	18
7439896	Iron	NA	0	18
7439921	Lead	50	0	18
7439954	Magnesium	NA	0	18
7439965	Manganese	NA	0	18
7439976	Mercury	0.05	2	18
7440020	Nickel	NA	0	18
7440097	Potassium	NA	0	18
7782492	Selenium	10	0	18
7440224	Silver	NA	0	18
7440235	Sodium	270000	4	18
7440280	Thallium	NA	0	18
7440622	Vanadium	NA	0	18
7440666	Zinc	50	9	18

AREA B - ARAR AND BACKGROUND COMPARISONS

1) Subsurface Soil - Metals
2) Surface Soil - Metals
3) Sediment - VOCs
4) Sediment - SVOCs
5) Sediment - PnPs
6) Sediment - Metals
7) Surface Water - VOCs
8) Surface Water - SVOCs
9) Surface Water - PnPs
10) Surface Water - Metals (Total & Dissolved)
11) Groundwater - Round 2, VOCs (Shallow)
12) Groundwater - Round 2, VOCs (Deep)
13) Groundwater - Round 3, VOCs (Shallow)
14) Groundwater - Round 3, VOCs (Deep)
15) Groundwater - SVOCs (Shallow)
16) Groundwater - SVOCs (Deep)
17) Groundwater - PnPs (Shallow)
18) Groundwater - PnPs (Deep)
19) Groundwater - Metals, Total (Shallow)
20) Groundwater - Metals, Total (Deep)

#61 Comparison Between USGS Background (1984) Criteria and Subsurface Soil (Metals)

CAS #	Chemical Name	Maximum Background Concentration (mg/kg)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	100000	0	10
7440360	Antimony	8.8	0	10
7440382	Arsenic	73	0	10
7440393	Barium	1500	0	10
7440417	Beryllium	7	0	10
7440439	Cadmium	1	1	10
7440702	Calcium	280000	0	10
7440473	Chromium	1000	0	10
7440484	Cobalt	70	0	10
7440508	Copper	700	0	10
7439896	Iron	100000	0	10
7439921	Lead	300	0	10
7439954	Magnesium	50000	0	10
7439965	Manganese	7000	0	10
7439976	Mercury	3.4	0	10
7440020	Nickel	700	0	10
7440097	Potassium	37000	0	10
7782492	Selenium	3.9	1	10
7440224	Silver	5	0	10
7440235	Sodium	50000	0	10
7440280	Thallium	23	0	10
7440622	Vanadium	300	0	10
7440666	Zinc	2900	0	10

#66 Comparison Between USGS Background (1984) Criteria and Surface Soil (Metals)

CAS #	Chemical Name	Maximum Background Concentration (mg/kg)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	100000	0	8
7440360	Antimony	8.8	0	8
7440382	Arsenic	73	0	8
7440393	Barium	1500	0	8
7440417	Beryllium	7	0	8
7440439	Cadmium	1	5	8
7440702	Calcium	280000	0	8
7440473	Chromium	1000	0	8
7440484	Cobalt	70	0	8
7440508	Copper	700	0	8
7439896	Iron	100000	0	8
7439921	Lead	300	0	8
7439954	Magnesium	50000	0	8
7439965	Manganese	7000	0	8
7439976	Mercury	3.4	0	8
7440020	Nickel	700	0	8
7440097	Potassium	37000	0	8
7782492	Selenium	3.9	0	8
7440224	Silver	5	0	8
7440235	Sodium	50000	0	8
7440280	Thallium	23	0	8
7440622	Vanadium	300	0	8
7440666	Zinc	2900	0	8

#52 ARAR Comparison Between NOAA Sediment Criteria and Sediment (VOCs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	NA	0	8
75092	Methylene Chloride	NA	0	8
67641	Acetone	NA	0	8
75150	Carbon Disulfide	NA	0	8
75343	1,1-Dichloroethane	NA	0	8
540590	1,2-Dichloroethene (total)	NA	0	8
107062	1,2-Dichloroethane	NA	0	8
78933	2-Butanone	NA	0	8
79016	Trichloroethene	NA	0	8
71432	Benzene	NA	0	8
127184	Tetrachloroethene	NA	0	8
108907	Chlorobenzene	NA	0	8
1330207	Xylene (total)	NA	0	8

#53 ARAR Comparison Between NOAA Sediment Criteria and Sediment (SVOCs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of Times Analyzed
108952	Phenol	NA	0	8
106467	1,4-Dichlorobenzene	NA	0	8
95501	1,2-Dichlorobenzene	NA	0	8
106445	4-Methylphenol	NA	0	8
105679	2,4-Dimethylphenol	NA	0	8
91203	Naphthalene	340	0	8
91576	2-Methylnaphthalene	65	0	8
83329	Acenaphthene	150	2	8
85018	Phenanthrene	225	0	8
84742	Di-n-butylphthalate	NA	0	8
206440	Fluoranthene	600	2	8
129000	Pyrene	350	3	8
56553	Benzo(a)anthracene	230	1	8
218019	Chrysene	400	1	8
117817	bis(2-Ethylhexyl)phthalate	NA	0	8
205992	Benzo(b)fluoranthene	NA	0	8
207089	Benzo(k)fluoranthene	NA	0	8
50328	Benzo(a)pyrene	400	0	8

#54 ARAR Comparison Between NOAA Sediment Criteria and Sediment (PnPs)

CAS #	Chemical Name	NOAA Criteria (ug/kg)	Number of Exceedences	Number of times Analyzed
309002	Aldrin	NA	0	8
1024573	Heptachlor epoxide	NA	0	8
959988	Endosulfan I	NA	0	8
60571	Dieldrin	0.02	8	8
72559	4,4'-DDE	2	8	8
72208	Endrin	0.02	3	8
72548	4,4'-DDD	1	8	8
72435	Methoxychlor	NA	0	8
7421363	Endrin aldehyde	NA	0	8
58899	gamma-BHC (Lindane)	NA	0	8
50293	4,4'-DDT	2	1	8
5349470	Endrin ketone	NA	0	8
5103719	alpha-Chlordane	NA	0	8
5103742	gamma-Chlordane	NA	0	8
1267229	Aroclor-1248	NA	0	8
1109769	Aroclor-1254	NA	0	8

#51 ARAR Comparison Between NOAA Sediment Criteria and Sediment (Metals)

CAS #	Chemical Name	NOAA Criteria (mg/kg)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	8
7440360	Antimony	2	1	8
7440382	Arsenic	33	2	8
7440393	Barium	NA	0	8
7440417	Beryllium	NA	0	8
7440439	Cadmium	5	5	8
7440702	Calcium	NA	0	8
7440473	Chromium	80	1	8
7440484	Cobalt	NA	0	8
7440508	Copper	70	5	8
7439896	Iron	NA	0	8
7439921	Lead	35	6	8
7439954	Magnesium	NA	0	8
7439965	Manganese	NA	0	8
7439976	Mercury	0.15	7	8
7440020	Nickel	30	3	8
7440097	Potassium	NA	0	8
7440224	Silver	1	2	8
7440235	Sodium	NA	0	8
7440622	Vanadium	NA	0	8
7440666	Zinc	120	4	8

#22 ARAR Comparison Between Federal AWQC and Surface Water (VOCs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	NA	0	7
75150	Carbon Disulfide	NA	0	7
75343	1,1-Dichloroethane	NA	0	7
540590	1,2-Dichloroethene (total)	NA	0	7
67663	Chloroform	0.19	2	7
107062	1,2-Dichloroethane	0.94	2	7
78933	2-Butanone	NA	0	7
75274	Bromodichloromethane	NA	0	7
79016	Trichloroethene	2.7	4	7
71432	Benzene	0.66	3	7
127184	Tetrachloroethene	0.8	1	7

#27 ARAR Comparison Between State WQC and Surface Water (VOCs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	20	1	7
75150	Carbon Disulfide	NA	0	7
75343	1,1-Dichloroethane	NA	0	7
540590	1,2-Dichloroethene (total)	NA	0	7
67663	Chloroform	57	0	7
107062	1,2-Dichloroethane	3.8	1	7
78933	2-Butanone	NA	0	7
75274	Bromodichloromethane	3	1	7
79016	Trichloroethene	27	2	7
71432	Benzene	12	1	7
127184	Tetrachloroethene	318	0	7

#23 ARAR Comparison Between Federal AWQC and Surface Water (SVOCs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
108952	Phenol	3500	0	7
106445	4-Methylphenol	NA	0	7
105679	2,4-Dimethylphenol	NA	0	7
83329	Acenaphthene	NA	0	7
84742	Di-n-butylphthalate	34000	0	7
117817	bis(2-Ethylhexyl)phthalate	NA	0	7
84662	Diethylphthalate	350000	0	7

#28 ARAR Comparison Between State WQC and Surface Water (SVOCs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
108952	Phenol	21000	0	7
106445	4-Methylphenol	NA	0	7
105679	2,4-Dimethylphenol	NA	0	7
83329	Acenaphthene	NA	0	7
84742	Di-n-butylphthalate	NA	0	7
117817	bis(2-Ethylhexyl)phthalate	18	0	7
84662	Diethylphthalate	NA	0	7

#24 ARAR Comparison Between Federal AWQC and Surface Water (PnPs)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
58899	gamma-BHC (Lindane)	NA	0	7
72548	4,4'-DDD	NA	0	7

#29 ARAR Comparison Between State WQC and Surface Water (PnPs)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
58899	gamma-BHC (Lindane)	7	0	7
72548	4,4'-DDD	NA	0	7

#21 ARAR Comparison Between Federal AWQC and Surface Water (Metals-Total)

CAS #	Chemical Name	Federal AWQC (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	7
7440360	Antimony	NA	0	7
7440382	Arsenic	0.0022	6	7
7440393	Barium	1000	0	7
7440417	Beryllium	NA	0	7
7440439	Cadmium	NA	0	7
7440702	Calcium	NA	0	7
7440473	Chromium	50	0	7
7440484	Cobalt	NA	0	7
7440508	Copper	NA	0	7
7439896	Iron	300	7	7
7439921	Lead	50	1	7
7439954	Magnesium	NA	0	7
7439965	Manganese	NA	0	7
7439976	Mercury	0.144	0	7
7440020	Nickel	13.4	1	7
7440097	Potassium	NA	0	7
7782492	Selenium	NA	0	7
7440224	Silver	50	0	7
7440235	Sodium	NA	0	7
7440280	Thallium	NA	0	7
7440622	Vanadium	NA	0	7
7440666	Zinc	NA	0	7

#26 ARAR Comparison Between State WQC and Surface Water (Metals-Dissolved)

CAS #	Chemical Name	State WQC (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	7
7440360	Antimony	NA	0	7
7440382	Arsenic	50	0	7
7440393	Barium	2000	0	7
7440417	Beryllium	NA	0	7
7440439	Cadmium	16	0	7
7440702	Calcium	NA	0	7
7440473	Chromium	NA	0	7
7440484	Cobalt	NA	0	7
7440508	Copper	1300	0	7
7439896	Iron	300	4	7
7439921	Lead	15	0	7
7439954	Magnesium	NA	0	7
7439965	Manganese	50	6	7
7439976	Mercury	0.144	0	7
7440020	Nickel	607	0	7
7440097	Potassium	NA	0	7
7782492	Selenium	172	0	7
7440224	Silver	NA	0	7
7440235	Sodium	NA	0	7
7440280	Thallium	NA	0	7
7440622	Vanadium	NA	0	7
7440666	Zinc	5000	0	7

#7 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	3	17
75354	1,1-Dichloroethene	7	2	17
75343	1,1-Dichloroethane	NA	0	17
540590	1,2-Dichloroethene (total)	NA	0	17
107062	1,2-Dichloroethane	5	4	17
71556	1,1,1-Trichloroethane	200	0	17
79016	Trichloroethene	5	3	17
71432	Benzene	5	3	17
127184	Tetrachloroethene	5	2	17
108907	Chlorobenzene	100	0	17

#17 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	17
75354	1,1-Dichloroethene	NA	0	17
75343	1,1-Dichloroethane	NA	0	17
540590	1,2-Dichloroethene (total)	NA	0	17
107062	1,2-Dichloroethane	NA	0	17
71556	1,1,1-Trichloroethane	NA	0	17
79016	Trichloroethene	NA	0	17
71432	Benzene	NA	0	17
127184	Tetrachloroethene	NA	0	17
108907	Chlorobenzene	NA	0	17

#2 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
540590	1,2-Dichloroethene (total)	NA	0	6
107062	1,2-Dichloroethane	5	2	6
79016	Trichloroethene	5	1	6

#12 ARAR Comparison Between State MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
540590	1,2-Dichloroethene (total)	NA	0	6
107062	1,2-Dichloroethane	NA	0	6
79016	Trichloroethene	NA	0	6

#7 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	2	9
67641	Acetone	NA	0	9
75354	1,1-Dichloroethene	7	1	9
540590	1,2-Dichloroethene (total)	NA	0	9
107062	1,2-Dichloroethane	5	1	9
79016	Trichloroethene	5	1	9
71432	Benzene	5	1	9
108101	4-Methyl-2-Pentanone	NA	0	9
127184	Tetrachloroethene	5	0	9
100414	Ethylbenzene	700	0	9
1330207	Xylene (total)	10000	0	9

#17 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	9
67641	Acetone	NA	0	9
75354	1,1-Dichloroethene	NA	0	9
540590	1,2-Dichloroethene (total)	NA	0	9
107062	1,2-Dichloroethane	NA	0	9
79016	Trichloroethene	NA	0	9
71432	Benzene	NA	0	9
108101	4-Methyl-2-Pentanone	NA	0	9
127184	Tetrachloroethene	NA	0	9
100414	Ethylbenzene	NA	0	9
1330207	Xylene (total)	NA	0	9

#2 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
75014	Vinyl Chloride	2	2	7
540590	1,2-Dichloroethene (total)	NA	0	7
67663	Chloroform	100	0	7
107062	1,2-Dichloroethane	5	2	7
79016	Trichloroethene	5	3	7
71432	Benzene	5	1	7
108883	Toluene	1000	0	7
1330207	Xylene (total)	10000	0	7

#12 ARAR Comparison Between State MCLs and Groundwater Deep Wells (VOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of times Analyzed
75014	Vinyl Chloride	NA	0	7
540590	1,2-Dichloroethene (total)	NA	0	7
67663	Chloroform	NA	0	7
107062	1,2-Dichloroethane	NA	0	7
79016	Trichloroethene	NA	0	7
71432	Benzene	NA	0	7
108883	Toluene	NA	0	7
1330207	Xylene (total)	NA	0	7

#8 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (SVOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
83329	Acenaphthene	NA	0	19
111444	bis(2-Chloroethyl)ether	NA	0	19
117817	bis(2-Ethylhexyl)phthalate	NA	0	19
132649	Dibenzofuran	NA	0	19
95501	1,2-Dichlorobenzene	600	0	19
106467	1,4-Dichlorobenzene	75	0	19
84662	Diethylphthalate	NA	0	19
105679	2,4-Dimethylphenol	NA	0	19
86737	Fluorene	NA	0	19
91576	2-Methylnaphthalene	NA	0	19
106445	4-Methylphenol	NA	0	19
91203	Naphthalene	NA	0	19
86306	N-Nitrosodiphenylamine	NA	0	19
108601	2,2'-oxybis(1-Chloropropane)	NA	0	19
85018	Phenanthrene	NA	0	19
108952	Phenol	NA	0	19
129000	Pyrene	NA	0	19

#18 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (SVOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
83329	Acenaphthene	NA	0	19
111444	bis(2-Chloroethyl)ether	NA	0	19
117817	bis(2-Ethylhexyl)phthalate	NA	0	19
132649	Dibenzofuran	NA	0	19
95501	1,2-Dichlorobenzene	NA	0	19
106467	1,4-Dichlorobenzene	NA	0	19
84662	Diethylphthalate	NA	0	19
105679	2,4-Dimethylphenol	NA	0	19
86737	Fluorene	NA	0	19
91576	2-Methylnaphthalene	NA	0	19
106445	4-Methylphenol	NA	0	19
91203	Naphthalene	NA	0	19
86306	N-Nitrosodiphenylamine	NA	0	19
108601	2,2'-oxybis(1-Chloropropane)	NA	0	19
85018	Phenanthrene	NA	0	19
108952	Phenol	1	4	19
129000	Pyrene	NA	0	19

#3 ARAR Comparison Betweem Federal MCLs and Groundwater Deep Wells (SVOCs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
108952	Phenol	NA	0	7
84662	Diethylphthalate	NA	0	7

#13 ARAR Comparison Between State MCLs and Groundwater Deep Wells (SVOCs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
108952	Phenol	1	2	7
84662	Diethylphthalate	NA	0	7

#9 ARAR Comparison Between Federal MCLS and Groundwater Shallow Wells (PnPs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
319846	alpha-BHC	NA	0	19
319868	delta-BHC	NA	0	19
58899	gamma-BHC (Lindane)	0.2	0	19
1024573	Heptachlor epoxide	0.2	0	19
60571	Dieldrin	NA	0	19
72559	4,4'-DDE	NA	0	19
72208	Endrin	2	0	19
72548	4,4'-DDD	NA	0	19
50293	4,4'-DDT	NA	0	19
7421363	Endrin aldehyde	NA	0	19

#19 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (PnPs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
319846	alpha-BHC	NA	0	19
319868	delta-BHC	NA	0	19
58899	gamma-BHC (Lindane)	0.01	1	19
1024573	Heptachlor epoxide	0.001	2	19
60571	Dieldrin	0.003	5	19
72559	4,4'-DDE	NA	0	19
72208	Endrin	0.004	1	19
72548	4,4'-DDD	NA	0	19
50293	4,4'-DDT	0.001	1	19
7421363	Endrin aldehyde	NA	0	19

#4 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (PnPs)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
1024573	Heptachlor epoxide	0.2	0	7
60571	Dieldrin	NA	0	7
72548	4,4'-DDD	NA	0	7

#14 ARAR Comparison Between State MCLs and Groundwater Deep Wells (PnPs)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
1024573	Heptachlor epoxide	0.001	1	7
60571	Dieldrin	0.003	1	7
72548	4,4'-DDD	NA	0	7

#6 ARAR Comparison Between Federal MCLs and Groundwater Shallow Wells (Metals-Total)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	19
7440360	Antimony	6	2	19
7440382	Arsenic	50	1	19
7440393	Barium	2000	0	19
7440417	Beryllium	4	5	19
7440439	Cadmium	5	4	19
7440702	Calcium	NA	0	19
7440473	Chromium	100	8	19
7440484	Cobalt	NA	0	19
7440508	Copper	1300	0	19
7439896	Iron	NA	0	19
7439921	Lead	15	13	19
7439954	Magnesium	NA	0	19
7439965	Manganese	NA	0	19
7439976	Mercury	2	1	19
7440020	Nickel	100	2	19
7440097	Potassium	NA	0	19
7440224	Silver	NA	0	19
7440235	Sodium	NA	0	19
7440622	Vanadium	NA	0	19
7440666	Zinc	NA	0	19

#16 ARAR Comparison Between State MCLs and Groundwater Shallow Wells (Metals-Total)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	19
7440360	Antimony	NA	0	19
7440382	Arsenic	50	1	19
7440393	Barium	1000	1	19
7440417	Beryllium	NA	0	19
7440439	Cadmium	0.4	5	19
7440702	Calcium	NA	0	19
7440473	Chromium	50	11	19
7440484	Cobalt	NA	0	19
7440508	Copper	1000	0	19
7439896	Iron	NA	0	19
7439921	Lead	50	7	19
7439954	Magnesium	NA	0	19
7439965	Manganese	NA	0	19
7439976	Mercury	0.05	6	19
7440020	Nickel	NA	0	19
7440097	Potassium	NA	0	19
7440224	Silver	NA	0	19
7440235	Sodium	270000	0	19
7440622	Vanadium	NA	0	19
7440666	Zinc	50	14	19

#1 ARAR Comparison Between Federal MCLs and Groundwater Deep Wells (Metals-Total)

CAS #	Chemical Name	Federal MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	7
7440360	Antimony	6	3	7
7440382	Arsenic	50	2	7
7440393	Barium	2000	0	7
7440417	Beryllium	4	2	7
7440439	Cadmium	5	2	7
7440702	Calcium	NA	0	7
7440473	Chromium	100	2	7
7440484	Cobalt	NA	0	7
7440508	Copper	1300	0	7
7439896	Iron	NA	0	7
7439921	Lead	15	2	7
7439954	Magnesium	NA	0	7
7439965	Manganese	NA	0	7
7440020	Nickel	100	2	7
7440097	Potassium	NA	0	7
7440224	Silver	NA	0	7
7440235	Sodium	NA	0	7
7440622	Vanadium	NA	0	7
7440666	Zinc	NA	0	7

#11 ARAR Comparison Between State MCLs and Groundwater Deep Wells (Metals-Total)

CAS #	Chemical Name	State MCL (ug/L)	Number of Exceedences	Number of Times Analyzed
7429905	Aluminum	NA	0	7
7440360	Antimony	NA	0	7
7440382	Arsenic	50	2	7
7440393	Barium	1000	0	7
7440417	Beryllium	NA	0	7
7440439	Cadmium	0.4	2	7
7440702	Calcium	NA	0	7
7440473	Chromium	50	2	7
7440484	Cobalt	NA	0	7
7440508	Copper	1000	0	7
7439896	Iron	NA	0	7
7439921	Lead	50	2	7
7439954	Magnesium	NA	0	7
7439965	Manganese	NA	0	7
7440020	Nickel	NA	0	7
7440097	Potassium	NA	0	7
7440224	Silver	NA	0	7
7440235	Sodium	270000	0	7
7440622	Vanadium	NA	0	7
7440666	Zinc	50	5	7

APPENDIX Z

APPENDIX Z
COMPARISONS OF INORGANIC SAMPLE RESULTS

COMPARISONS OF SEDIMENT SAMPLE RESULTS
(AREAS A & B)

COMPARISON OF TOTAL TO DISSOLVED CHROMIUM AND ARSENIC
SHALLOW GROUNDWATER - TOTAL METALS
AREAS A AND B - ROUNDS 2 AND 3

Well No.	Sample No.	Total Chromium (ug/l)	Dissolved Chromium (ug/l)	Total Arsenic (ug/l)	Dissolved Arsenic (ug/l)
B-1W	GWA-201	93.9	8U	103	2U
A-MW5	GWA-202	21	8U	10.3	3.8
A-MW7	GWA-203	53.2	8U	8.6	2U
A-MW9A	GWA-205	38.8	8U	309	173
A-MW8A	GWA-207	67.6	8U	19.3	19.7L
A-MW6A	GWA-208	8	8U	2	2U
B-20W	GWA-210	187	8U	200	200L
B-17W	GWA-211	8	8U	21.4	15.5L
B-15WA	GWA-212	65.8	8U	34.1	4.9
A-MW11A	GWA-215	55.6	8U	11.7	2.7
A-MW12A	GWA-217	15.7	8U	158	153
GW-3	GWA-218	52.5	8U	30.6	2U
GW-2	GWA-220	8	8U	4.5	2.2L
A-MW4A	GWA-222	89.2	8U	44.3	3.6L
GW-1	GWA-225	48.5	8U	3.8	2U
B-20WSS	GWA-231	353	8U	68.1	11.8L
A-MW10A	GWA-232D	120	8U	12.85	5.65L
B-MW13	GWB-201	244	8U	27.2	2U
B-MW12	GWB-202	8	8U	20	16.4
B-MW11A	GWB-204	141	8U	32	2U
B-MW3A	GWB-205	8	8U	2	2U
B-MW2A	GWB-216	8	8U	24.1	2U
GW-6	GWB-218	8	8U	2	2U
B-MW14	GWB-220	166	8U	10.2	2U
B-MW15	GWB-221	213	8U	16.1	2U
B-MW16	GWB-222	32.6	8U	7.6	3.4
GW-5	GWB-213	96.2	8U	26.6	2U
GW-4	GWB-215	82.1	22.2	22.6	14.1
B-MW7	GWB-207	264	8U	17	2U
B-MW10	GWB-208	8	10.4	11.6	2U
B-MW9A	GWB-210	8	8U	2	2U
B-MW8A	GWB-212	8	8U	93.6	51.1
B-MW1	GWB-219D	217.5	8U	24.4	2U
B-MW17	GWB-225D	774.5	8U	10	2U
B-MW18A	GWB-317	165	9U	15	8.8
B-MW19A	GWB-319	98	9U	8.5	7.8

U - Below detection limit
L - Biased low value

LINEAR REGRESSION CORRELATIONS
SHALLOW GROUNDWATER - TOTAL METALS
AREAS A AND B - ROUNDS 2 AND 3

Well No.	Sample No.	Aluminum (ug/l)	Chromium (ug/l)	Arsenic (ug/l)	Iron (ug/l)	Alum + Iron (ug/l)
B-1W	GWA-201	71000	93.9	103	56600	127600
A-MW5	GWA-202	15800	21	10.3	24200	40000
A-MW7	GWA-203	31300	53.2	8.6	16000	47300
A-MW9A	GWA-205	29600	38.8	309	106000	135600
A-MW8A	GWA-207	56400	67.6	19.3	94200	150600
A-MW6A	GWA-208	4780	8	2	4040	8820
B-20W	GWA-210	80600	187	200	138000	218600
B-17W	GWA-211	222	8	21.4	7490	7712
B-15WA	GWA-212	33400	65.8	34.1	51600	85000
A-MW11A	GWA-215	40100	55.6	11.7	39100	79200
A-MW12A	GWA-217	6500	15.7	158	46300	52800
GW-3	GWA-218	26200	52.5	30.6	119000	145200
GW-2	GWA-220	797	8	4.5	20000	20797
A-MW4A	GWA-222	73500	89.2	44.3	57800	131300
GW-1	GWA-225	32900	48.5	3.8	75700	108600
B-20WSS	GWA-231	132000	353	68.1	226000	358000
A-MW10A	GWA-232D	98750	120	12.85	139000	237750
B-MW13	GWB-201	162000	244	27.2	249000	411000
B-MW12	GWB-202	51100	8	20	86700	137800
B-MW11A	GWB-204	88800	141	32	183000	271800
B-MW3A	GWB-205	8230	8	2	23200	31430
B-MW2A	GWB-216	63900	8	24.1	64700	128600
GW-6	GWB-218	37600	8	2	51500	89100
B-MW14	GWB-220	93000	166	10.2	108000	201000
B-MW15	GWB-221	127000	213	16.1	147000	274000
B-MW16	GWB-222	24500	32.6	7.6	19900	44400
GW-5	GWB-213	3040	96.2	26.6	178000	181040
GW-4	GWB-215	6660	82.1	22.6	15600	22260
B-MW7	GWB-207	192000	264	17	119000	311000
B-MW10	GWB-208	22800	8	11.6	26200	49000
B-MW9A	GWB-210	2650	8	2	7940	10590
B-MW8A	GWB-212	905	8	93.6	33500	34405
B-MW1	GWB-219D	135500	217.5	24.4	162000	297500
B-MW17	GWB-225D	610000	774.5	10	734500	1344500
B-MW18A	GWB-317	135000	165	15	106000	241000
B-MW19A	GWB-319	83000	98	8.5	61900	144900

Aluminum - Chromium
Regression Output:

Constant		13.23836
Std Err of Y Est		44.83893
R Squared		0.90609
No. of Observations		36
Degrees of Freedom		34
X Coefficient(s)	0.001301	
Std Err of Coef.	7.18E-05	

Aluminum - Arsenic
Regression Output:

Constant		43.17056
Std Err of Y Est		63.93649
R Squared		0.008186
No. of Observations		36
Degrees of Freedom		34
X Coefficient(s)	-5.4E-05	
Std Err of Coef.	0.000102	

Iron - Chromium
Regression Output:

Constant		-0.09112
Std Err of Y Est		52.68146
R Squared		0.870367
No. of Observations		36
Degrees of Freedom		34
X Coefficient(s)	0.001067	
Std Err of Coef.	7.06E-05	

(Alum+Iron) - Chromium
Regression Output:

Constant		2.333793
Std Err of Y Est		41.90034
R Squared		0.917996
No. of Observations		36
Degrees of Freedom		34
X Coefficient(s)	0.000607	
Std Err of Coef.	3.11E-05	

Iron - Arsenic
Regression Output:

Constant		98795.95
Std Err of Y Est		127946.7
R Squared		0.000222
No. of Observations		36
Degrees of Freedom		34
X Coefficient(s)	29.713	
Std Err of Coef.	341.7874	

COMPARISON OF TOTAL TO DISSOLVED CHROMIUM AND ARSENIC
DEEP GROUNDWATER - TOTAL METALS
AREAS A AND B - ROUNDS 2 AND 3

Well No.	Sample No.	Total Chromium (ug/l)	Dissolved Chromium (ug/l)	Total Arsenic (ug/l)	Dissolved Arsenic (ug/l)
A-MW9C	GWA-204D	7.15	8U	5.1	2.25L
A-MW9B	GWA-206	26.6	8U	6.3	2U
A-MW6B	GWA-209	47.3	8U	9.5	2U
A-MW1B	GWA-213	25.9	8U	19.3	2U
A-MW11B	GWA-216D	165.5	8U	64.4	2U
A-MW4B	GWA-221	8	8U	4.1	2U
A-MW8B	GWA-226D	7.2	8U	4.7	2UL
A-MW17B	GWA-230	8	8U	5.3	2.7L
A-MW1C	GWA-214	8	8U	6.5	4.9
B-15WB	GWA-227	8	8U	4	2U
A-MW19B	GWA-318	9	9U	2	1.2
A-MW18B	GWA-317D	9	9U	1.4	1U
A-MW10B	GWA-219	8	8U	2	2U
A-MW14B	GWA-223	8	8U	4.8	2.9L
A-MW13B	GWA-224	15.2	8U	10.4	5L
A-MW15B	GWA-228	27	8U	2	2U
A-MW16B	GWA-229	27.7	8U	26.7	2U
B-MW3B	GWB-206	542	NA	194	2U
B-MW5B	GWB-214	232	NA	93.8	2U
B-MW2B	GWB-217	8	NA	2	2U
B-MW19B	GWB-320	9	NA	2.7	1.3
B-MW11B	GWB-203	8	NA	20.7	2U
B-MW8B	GWB-211	8	NA	14.8	2U
B-MW9B	GWB-209D	16.9	NA	2	2U

U - Below detection limit
L - Biased low value
NA - Not analyzed

LINEAR REGRESSION CORRELATIONS
DEEP GROUNDWATER - TOTAL METALS
AREAS A AND B - ROUNDS 2 AND 3

Well No.	Sample No.	Aluminum (ug/l)	Chromium (ug/l)	Arsenic (ug/l)	Iron (ug/l)	Alum + Iron (ug/l)
A-MW9C	GWA-204D	1220	7.15	5.1	4405	5625
A-MW9B	GWA-206	4080	26.6	6.3	44900	48980
A-MW6B	GWA-209	5640	47.3	9.5	81200	86840
A-MW1B	GWA-213	8560	25.9	19.3	50500	59060
A-MW11B	GWA-216D	46900	165.5	64.4	248500	295400
A-MW4B	GWA-221	563	8	4.1	5940	6503
A-MW8B	GWA-226D	3095	7.2	4.7	13250	16345
A-MW17B	GWA-230	1190	8	5.3	4420	5610
A-MW1C	GWA-214	18	8	6.5	2070	2088
B-15WB	GWA-227	18	8	4	1950	1968
A-MW19B	GWA-318	1120	9	2	672	1792
A-MW18B	GWA-317D	18	9	1.4	10	28
A-MW10B	GWA-219	506	8	2	5200	5706
A-MW14B	GWA-223	2000	8	4.8	10300	12300
A-MW13B	GWA-224	1430	15.2	10.4	11600	13030
A-MW15B	GWA-228	4970	27	2	62300	67270
A-MW16B	GWA-229	8500	27.7	26.7	62400	70900
B-MW3B	GWB-206	146000	542	194	428000	574000
B-MW5B	GWB-214	40000	232	93.8	382000	422000
B-MW2B	GWB-217	1290	8	2	11000	12290
B-MW19B	GWB-320	15	9	2.7	9120	9135
B-MW11B	GWB-203	2840	8	20.7	13700	16540
B-MW8B	GWB-211	6200	8	14.8	26900	33100
B-MW9B	GWB-209D	5970	16.9	2	10900	16870

Aluminum - Chromium
Regression Output:

Constant		5.843107
Std Err of Y Est		18.74305
R Squared		0.975659
No. of Observations		24
Degrees of Freedom		22
X Coefficient(s)	0.003763	
Std Err of Coef.	0.000127	

Aluminum - Arsenic
Regression Output:

Constant		4.715921
Std Err of Y Est		9.329178
R Squared		0.954392
No. of Observations		24
Degrees of Freedom		22
X Coefficient(s)	0.001353	
Std Err of Coef.	6.31E-05	

Iron - Chromium
Regression Output:

Constant		-5.97025
Std Err of Y Est		44.38399
R Squared		0.863508
No. of Observations		24
Degrees of Freedom		22
X Coefficient(s)	0.000927	
Std Err of Coef.	7.86E-05	

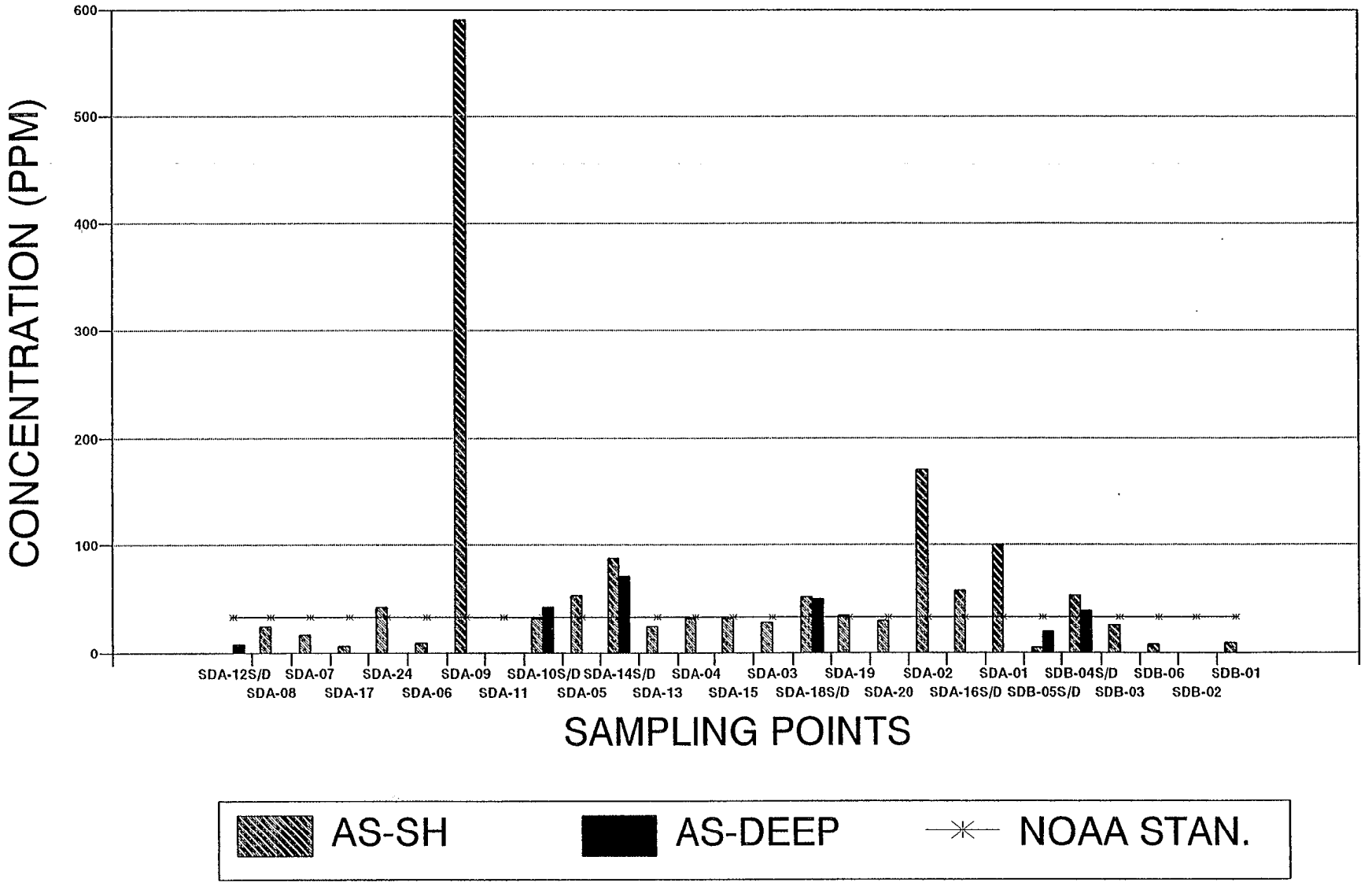
Iron - Arsenic
Regression Output:

Constant		-5.92927
Std Err of Y Est		33.45569
R Squared		0.922448
No. of Observations		24
Degrees of Freedom		22
X Coefficient(s)	0.000775	
Std Err of Coef.	4.79E-05	

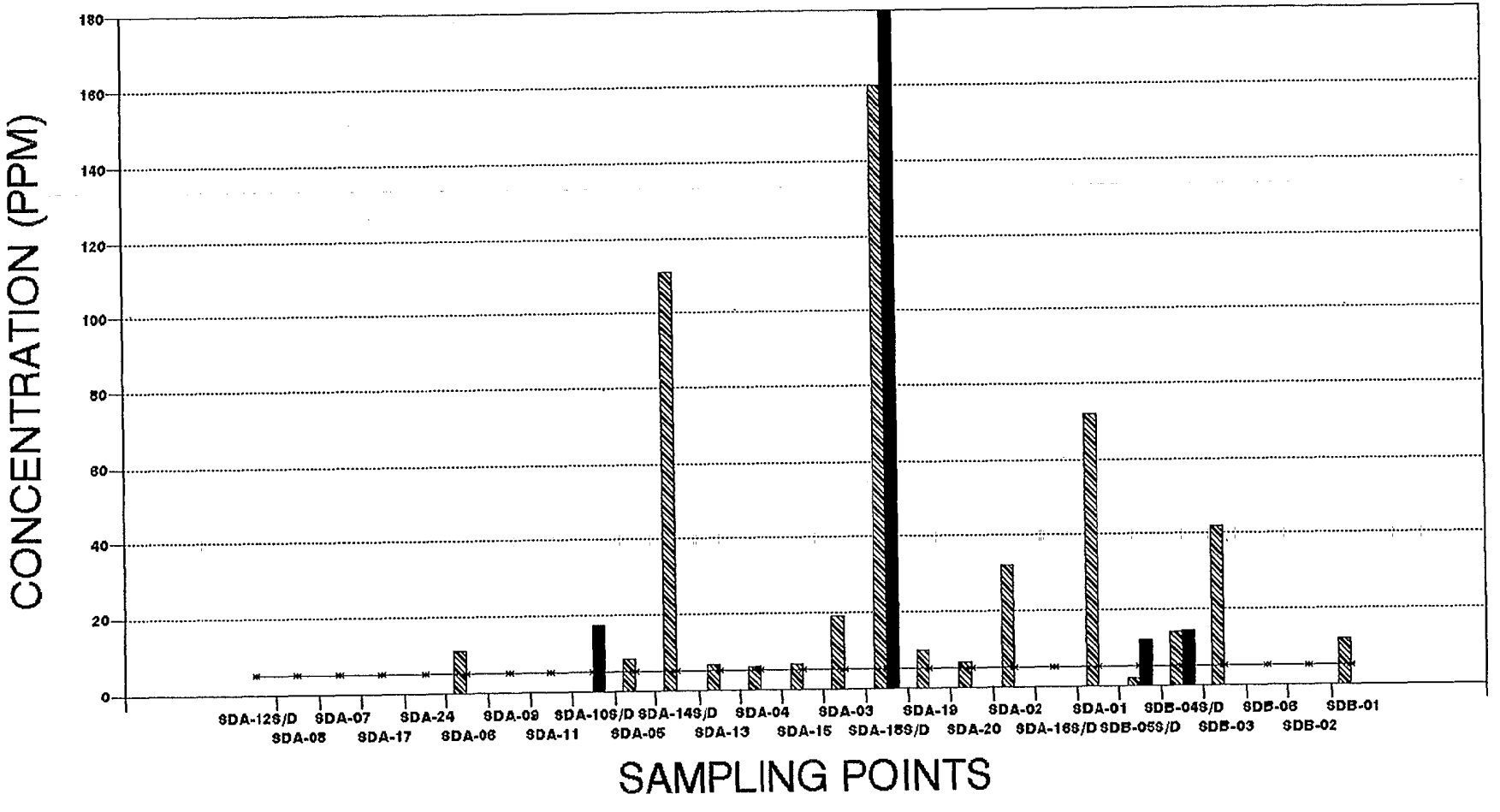
(Alum+Iron) - Chromium
Regression Output:

Constant		0.202807
Std Err of Y Est		11.81474
R Squared		0.926852
No. of Observations		24
Degrees of Freedom		22
X Coefficient(s)	0.000282	
Std Err of Coef.	1.69E-05	

SEDIMENT
ARSENIC - TOTAL

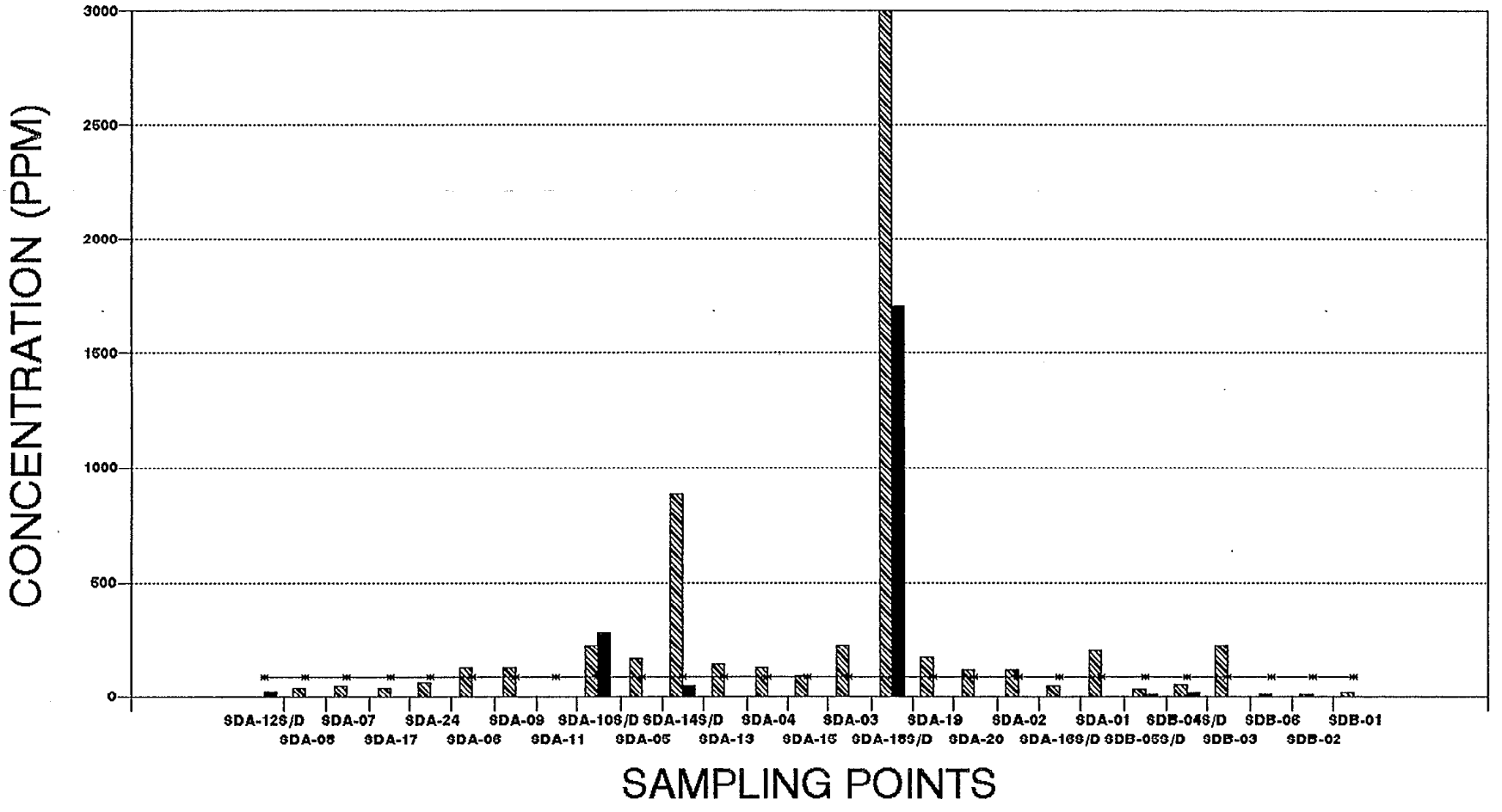


SEDIMENT
CADMIUM - TOTAL



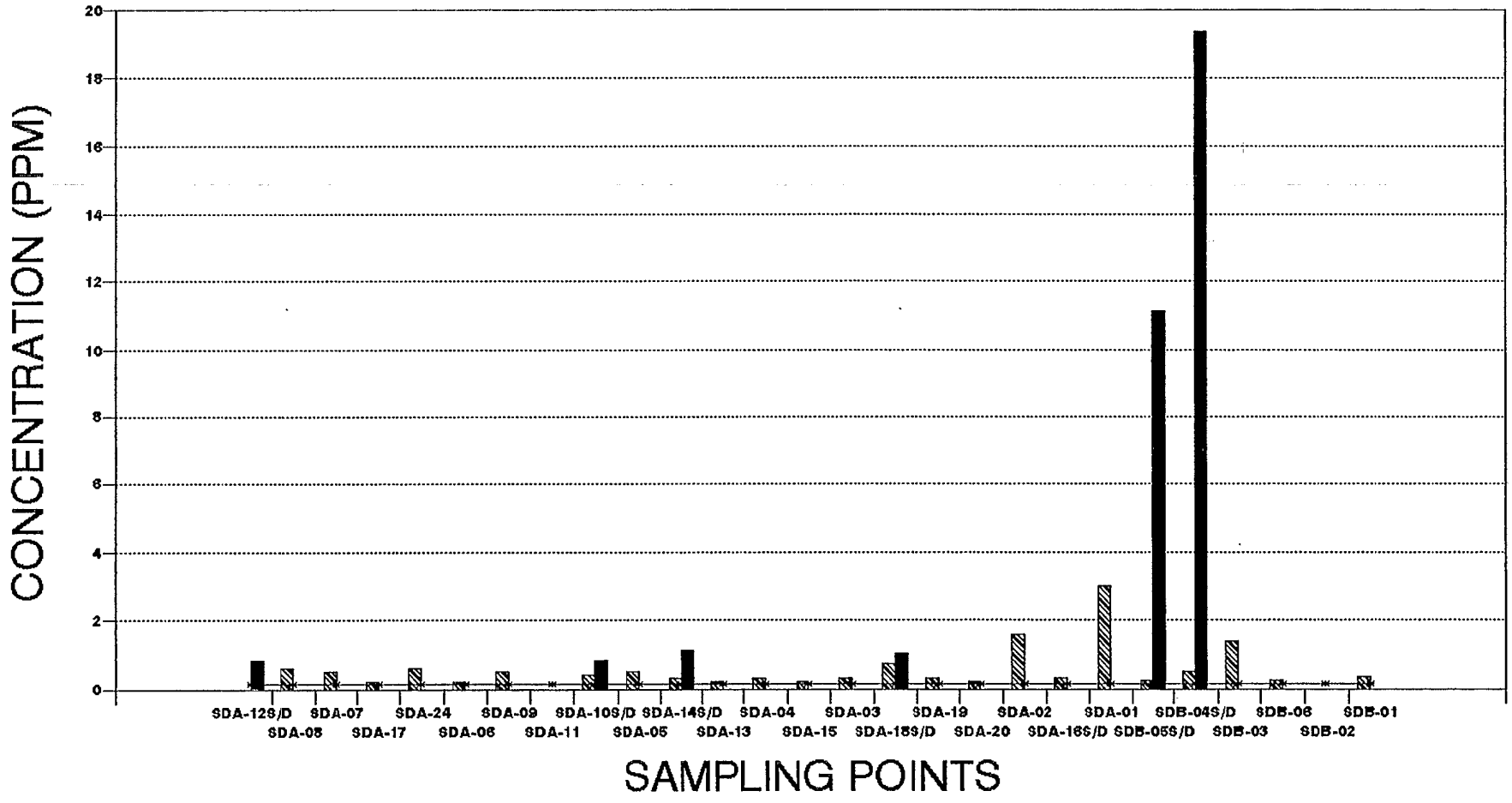
CD-SH CD-DEEP NOAA STAN.

SEDIMENT
CHROMIUM - TOTAL



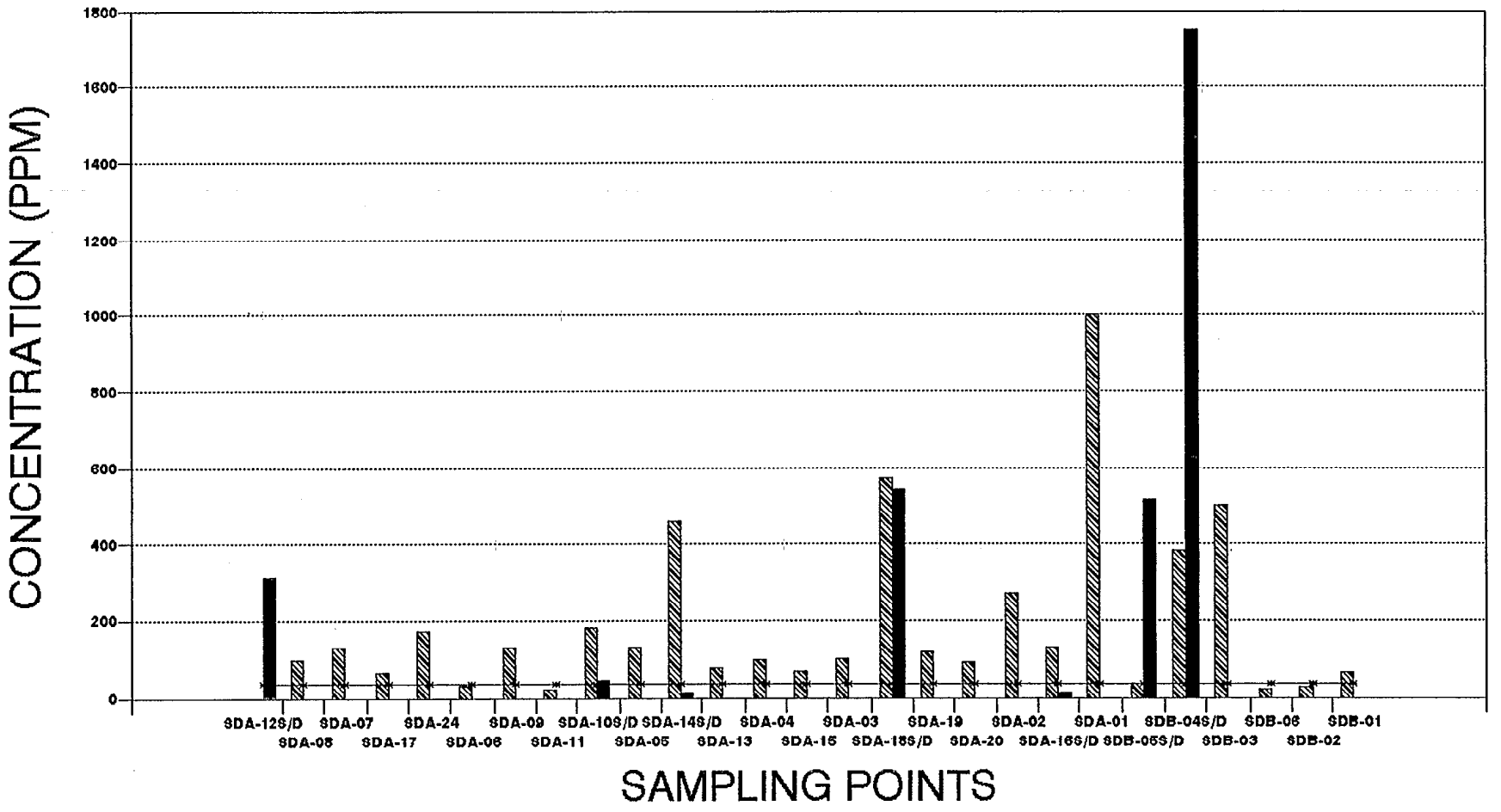
CR-SH CR-DEEP NOAA STAN.

SEDIMENT
MERCURY - TOTAL

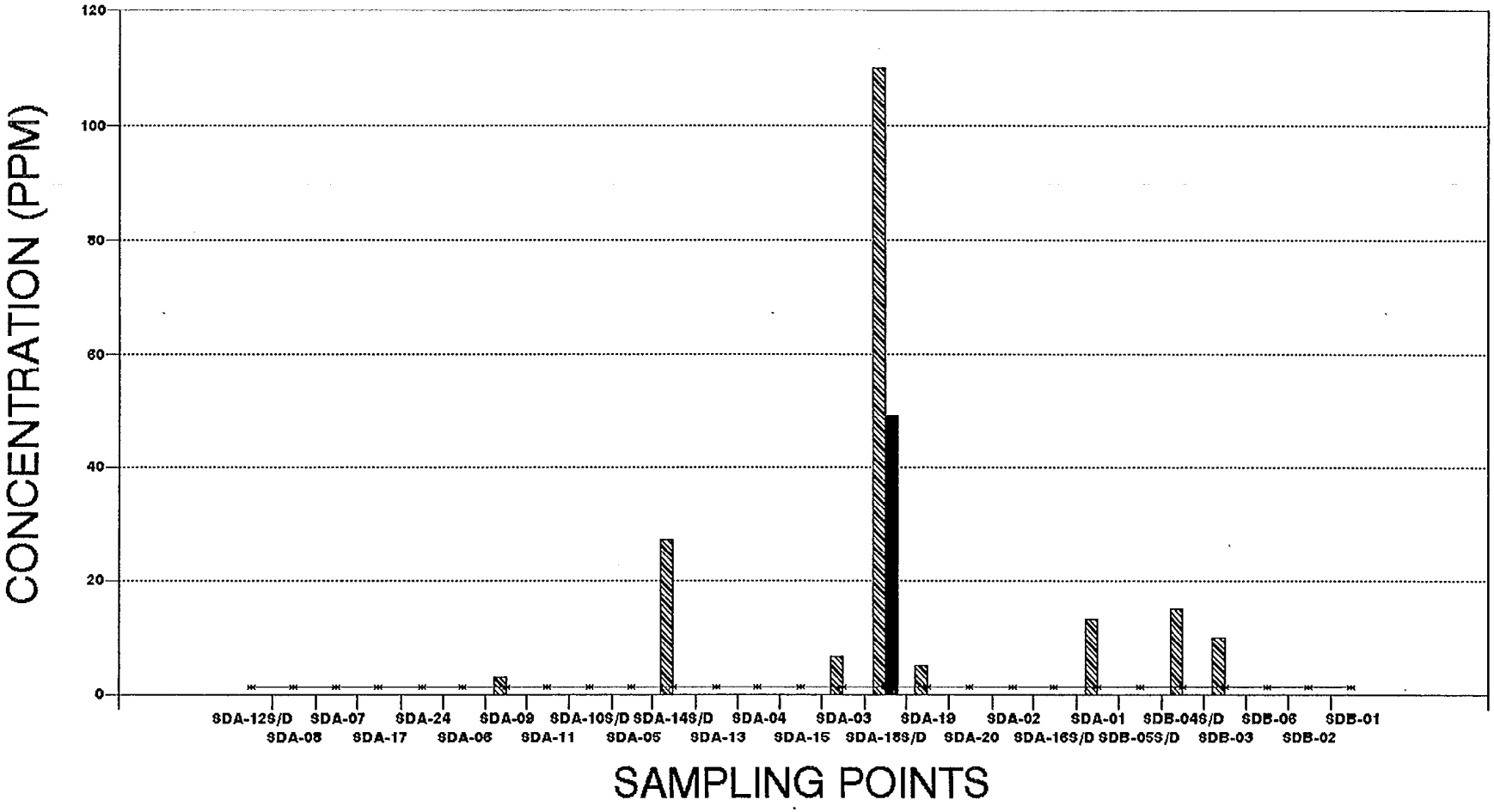


HG-SH HG-DEEP NOAA STAN.

SEDIMENT
LEAD - TOTAL



SEDIMENT
SILVER - TOTAL

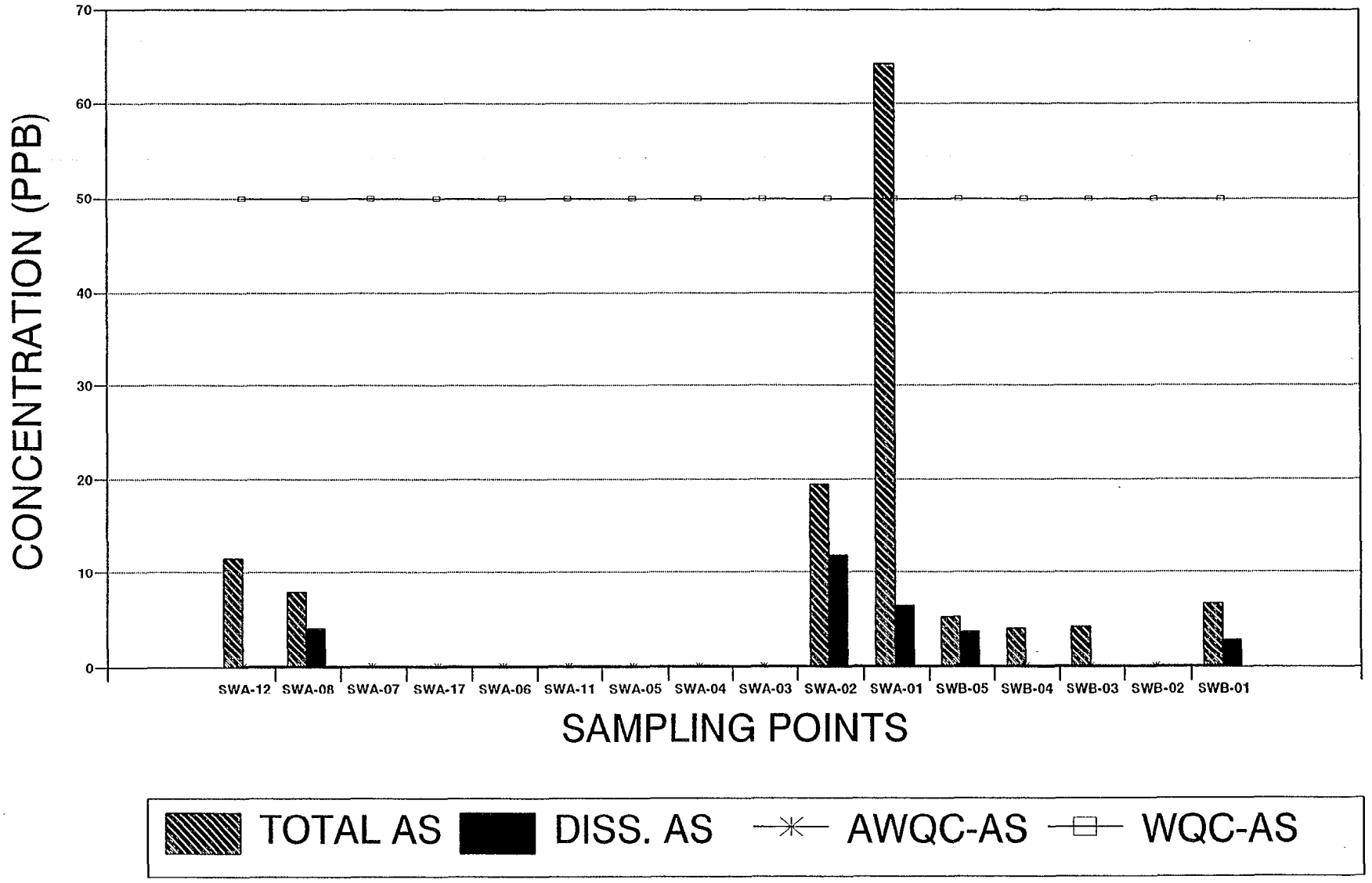


AG-SH AG-DEEP NOAA STAN.

COMPARISONS OF SURFACE WATER SAMPLE RESULTS
TOTAL & DISSOLVED (AREAS A & B)

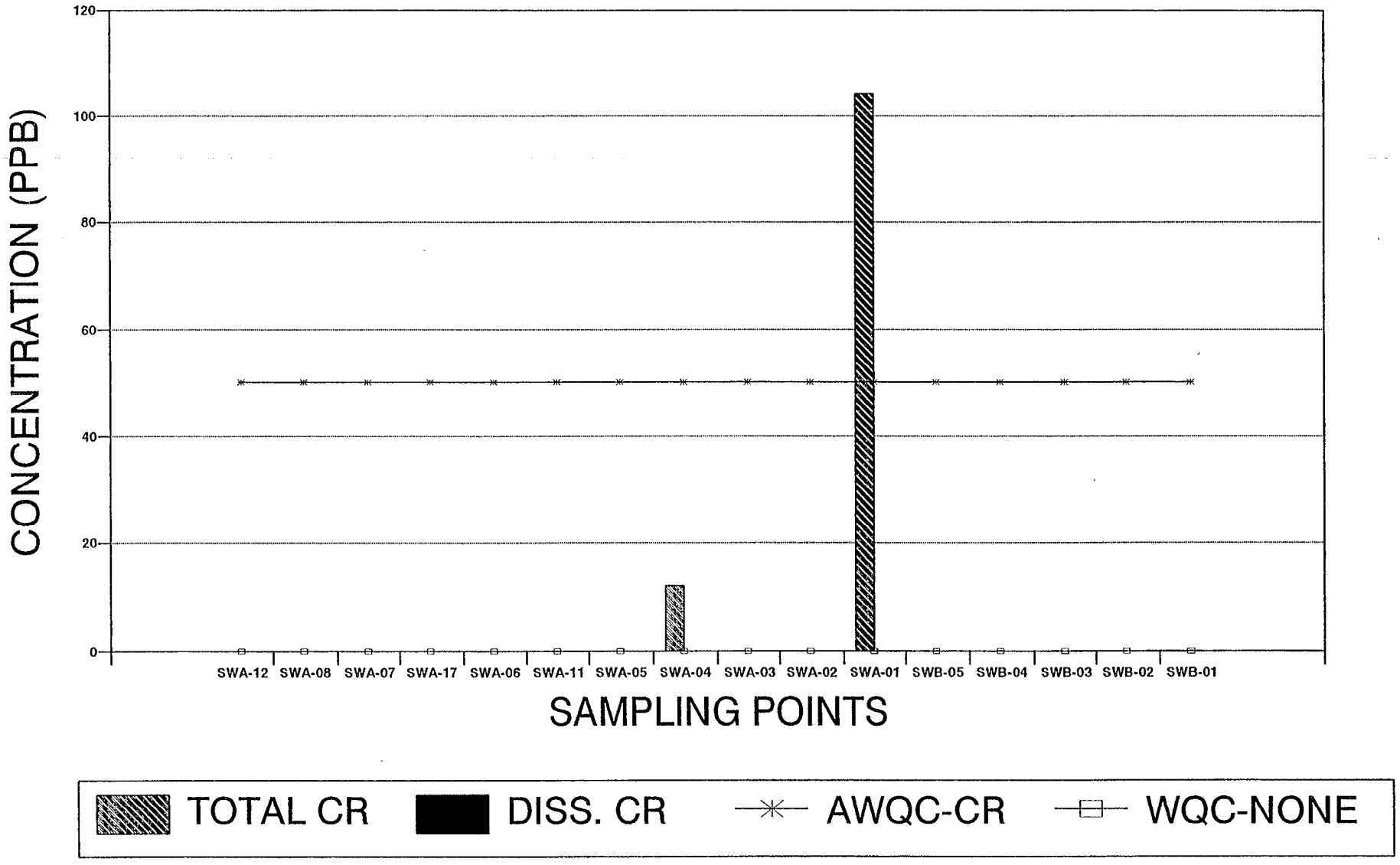
SURFACE WATER

ARSENIC - TOTAL VS DISSOLVED



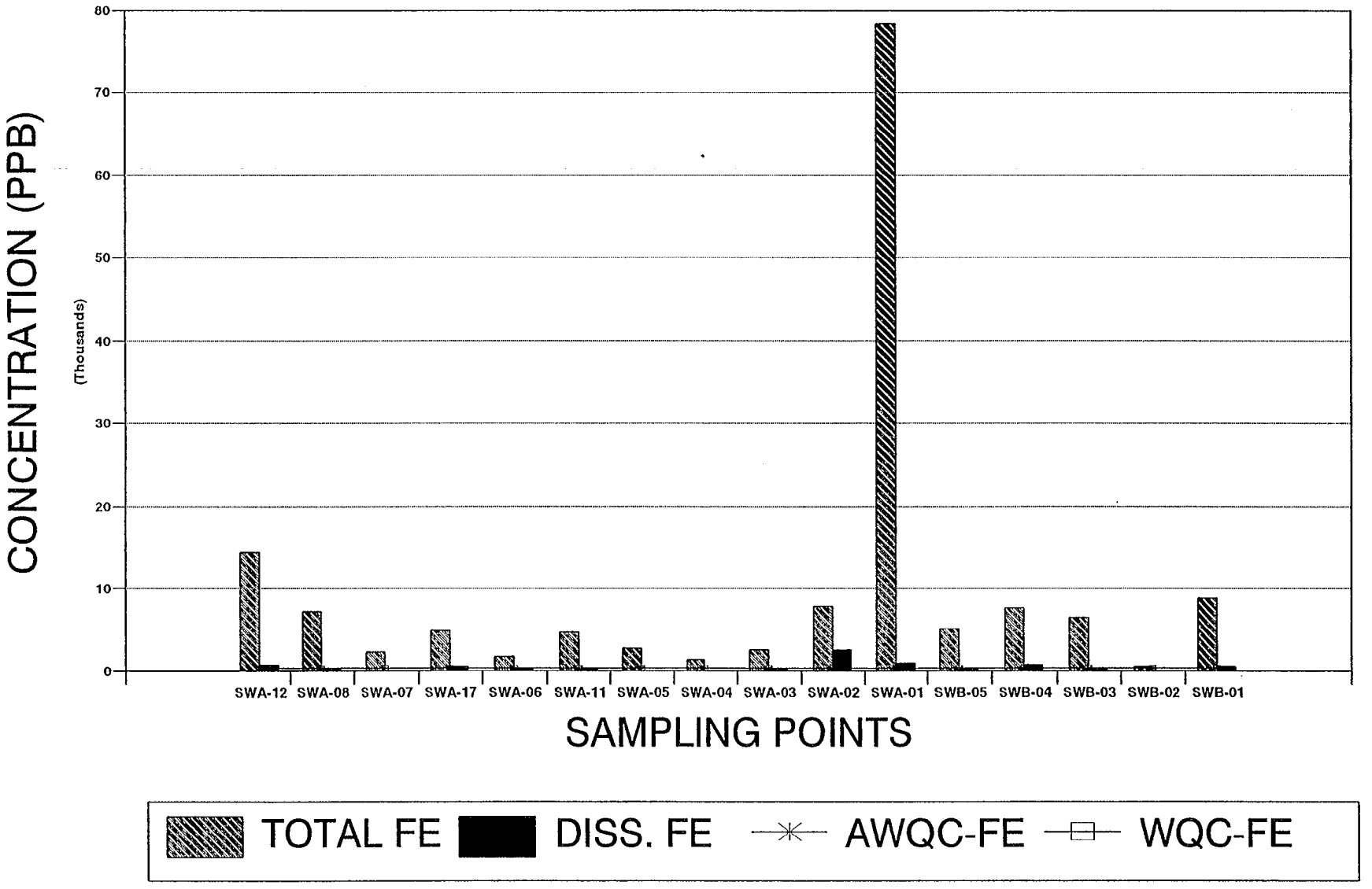
SURFACE WATER

CHROMIUM - TOTAL VS DISSOLVED



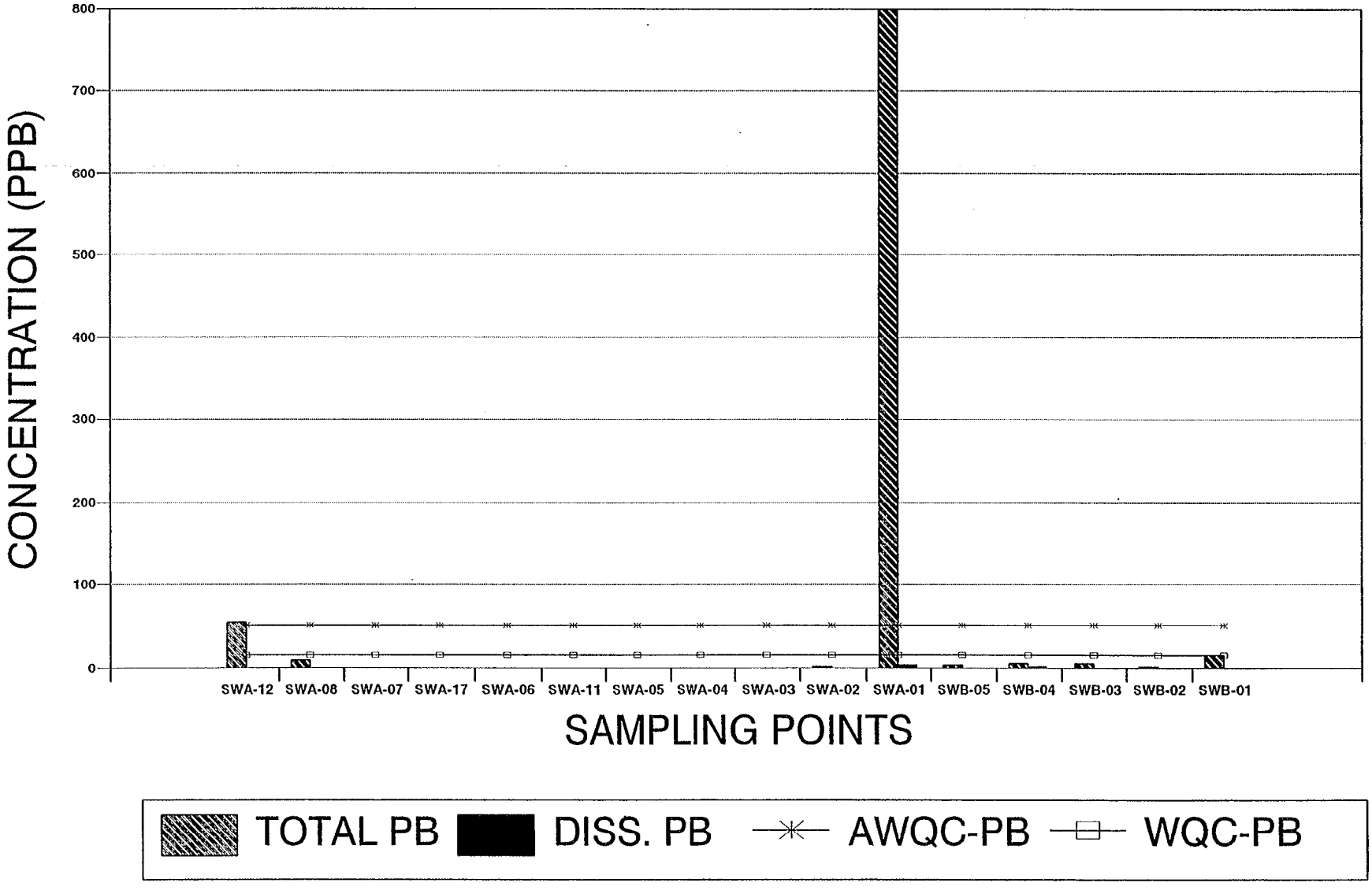
SURFACE WATER

IRON - TOTAL VS DISSOLVED



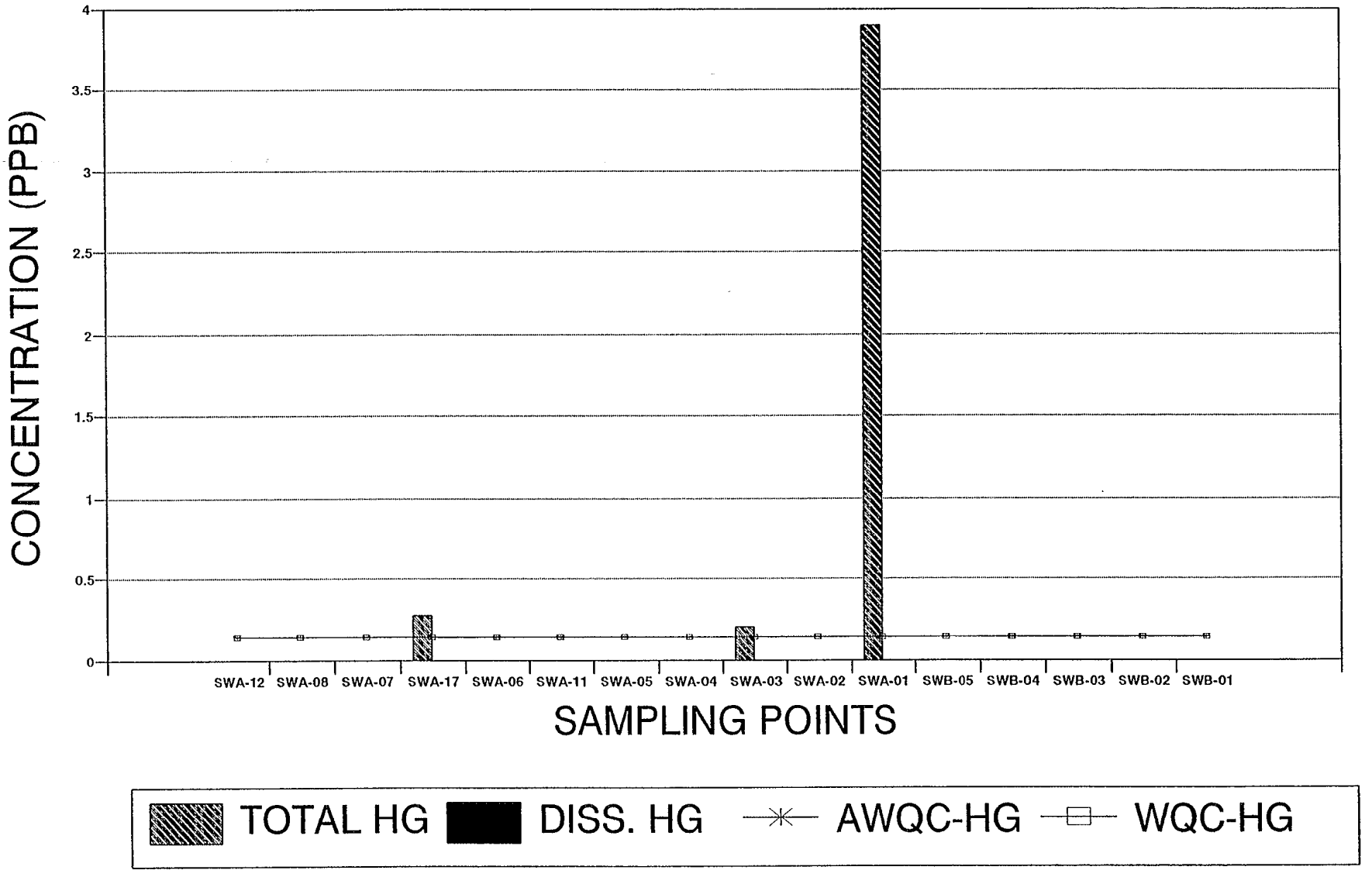
SURFACE WATER

LEAD - TOTAL VS DISSOLVED



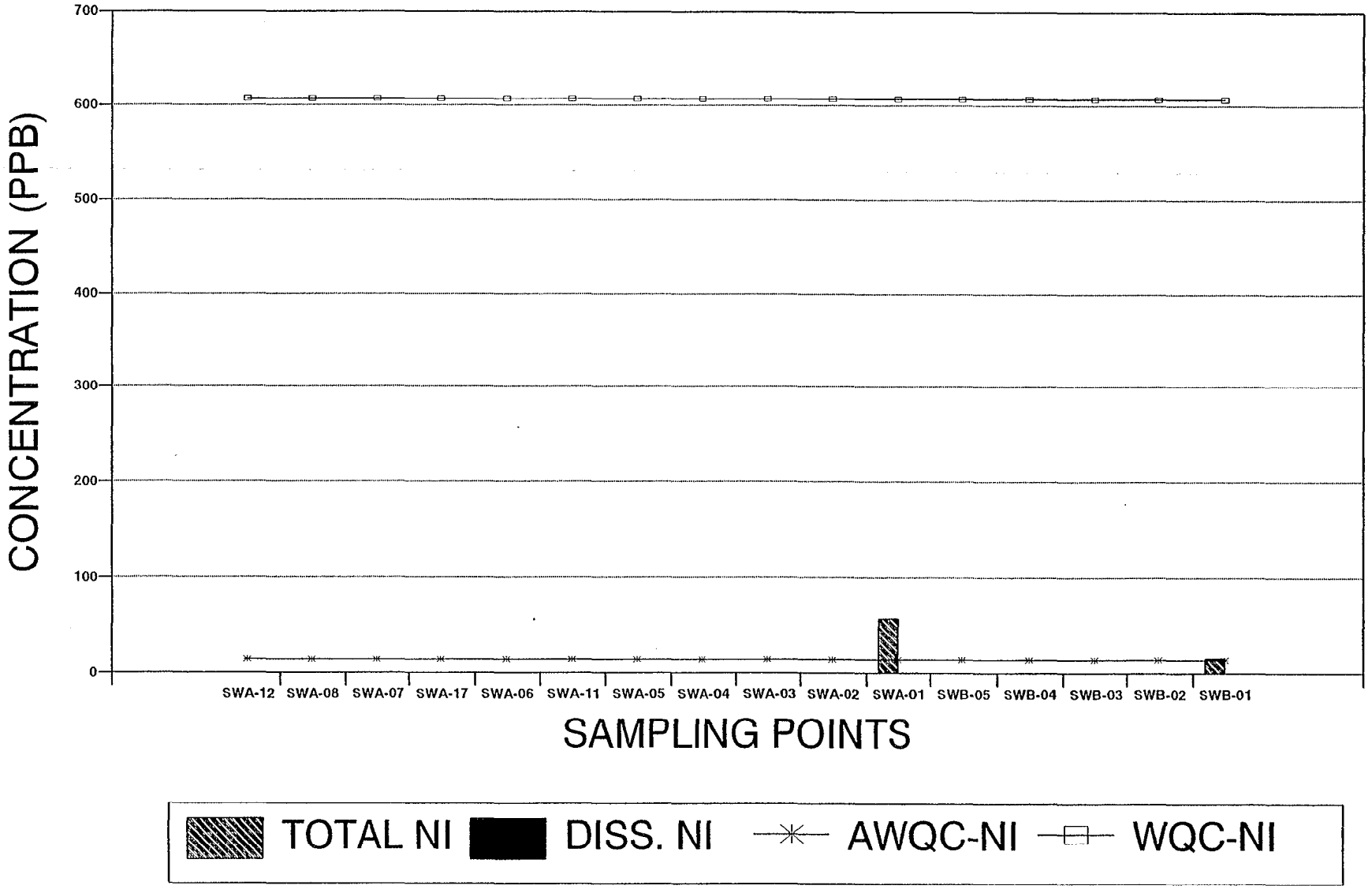
SURFACE WATER

MERCURY - TOTAL VS DISSOLVED



SURFACE WATER

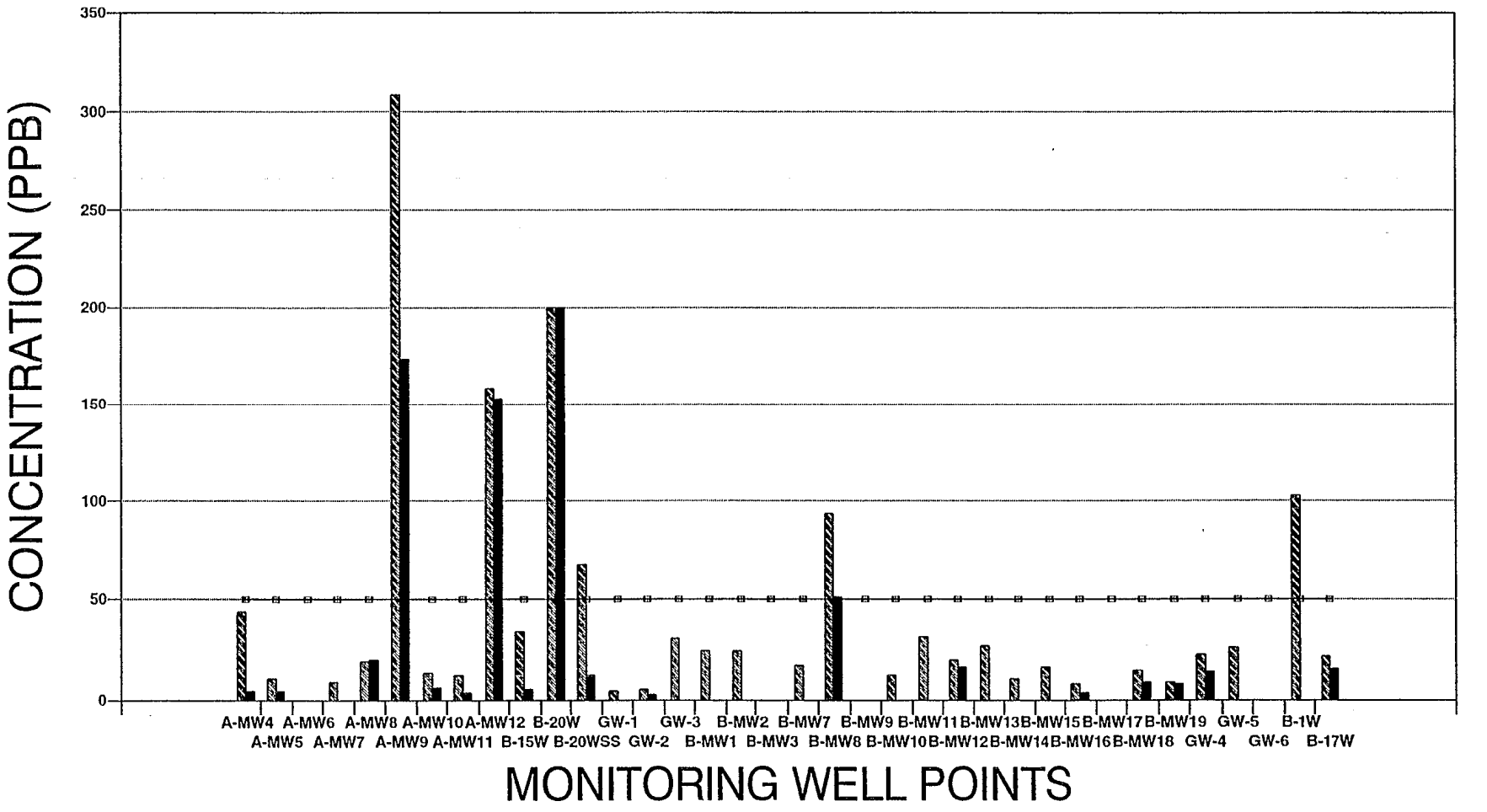
NICKEL - TOTAL VS DISSOLVED



COMPARISONS OF SHALLOW GROUNDWATER SAMPLE RESULTS - TOTAL & DISSOLVED (AREAS A & B)

SHALLOW GROUNDWATER

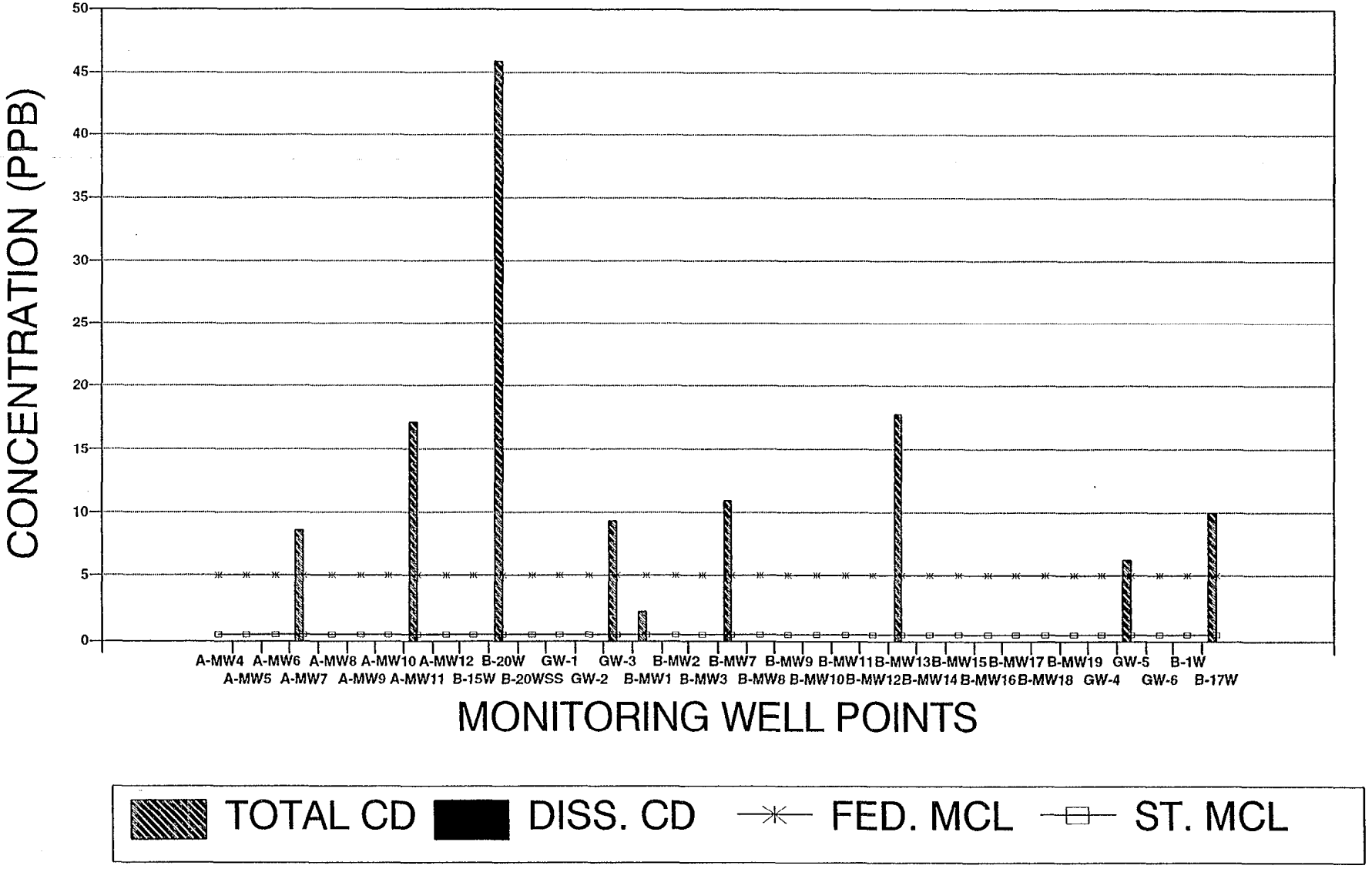
ARSENIC - TOTAL VS DISSOLVED



TOTAL AS | DISS. AS | FED. MCL | ST. MCL

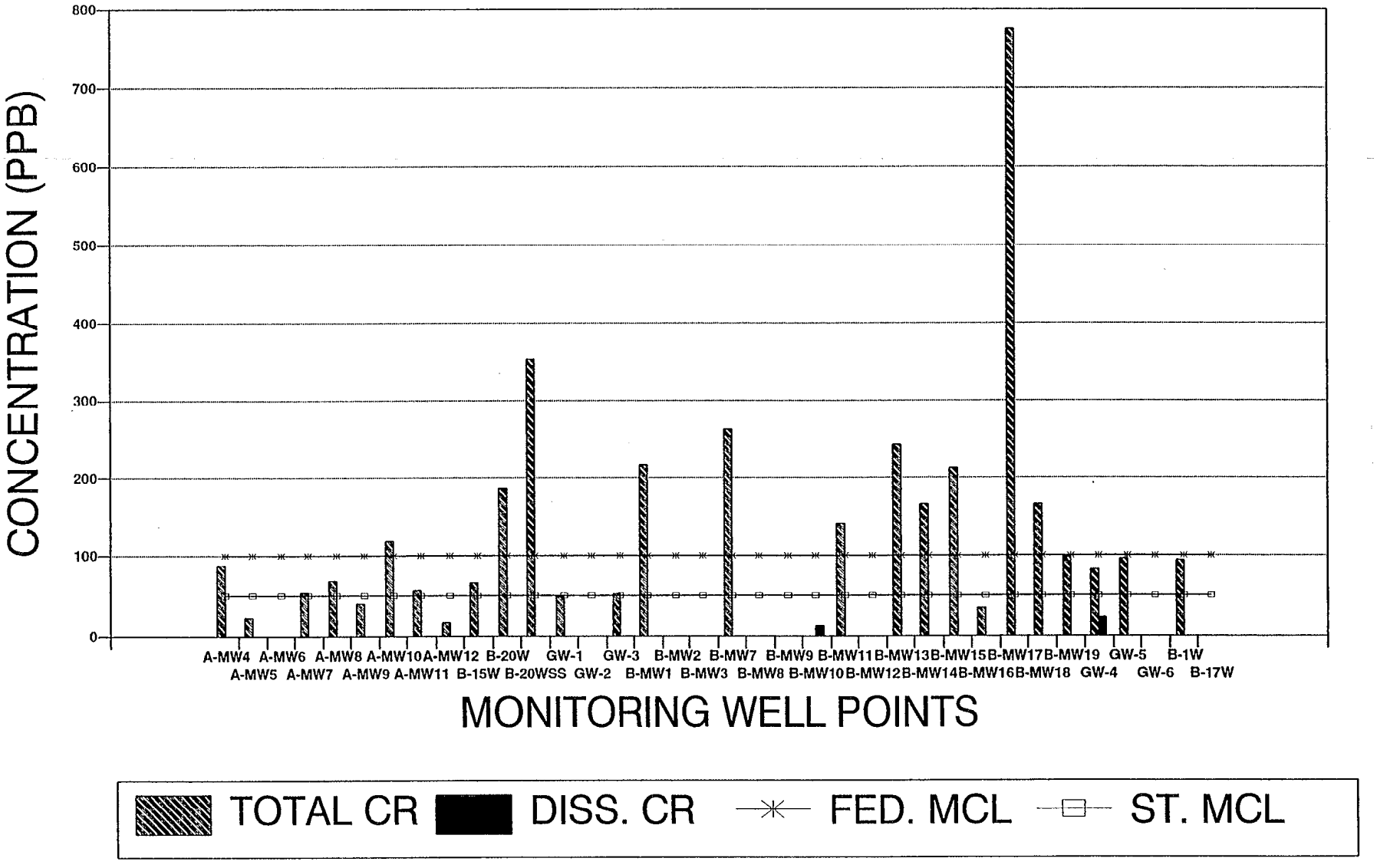
SHALLOW GROUNDWATER

CADMIUM - TOTAL VS DISSOLVED



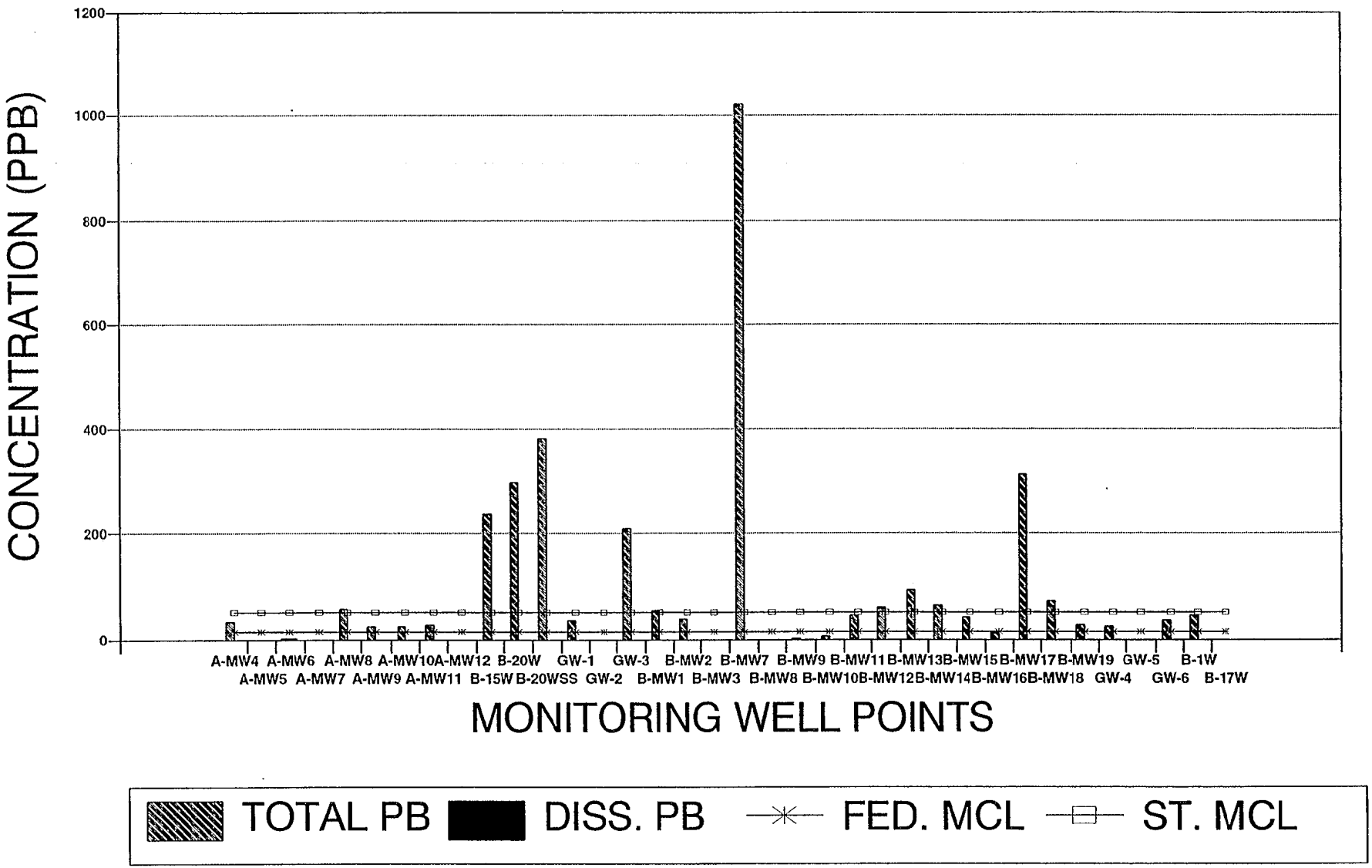
SHALLOW GROUNDWATER

CHROMIUM - TOTAL VS DISSOLVED



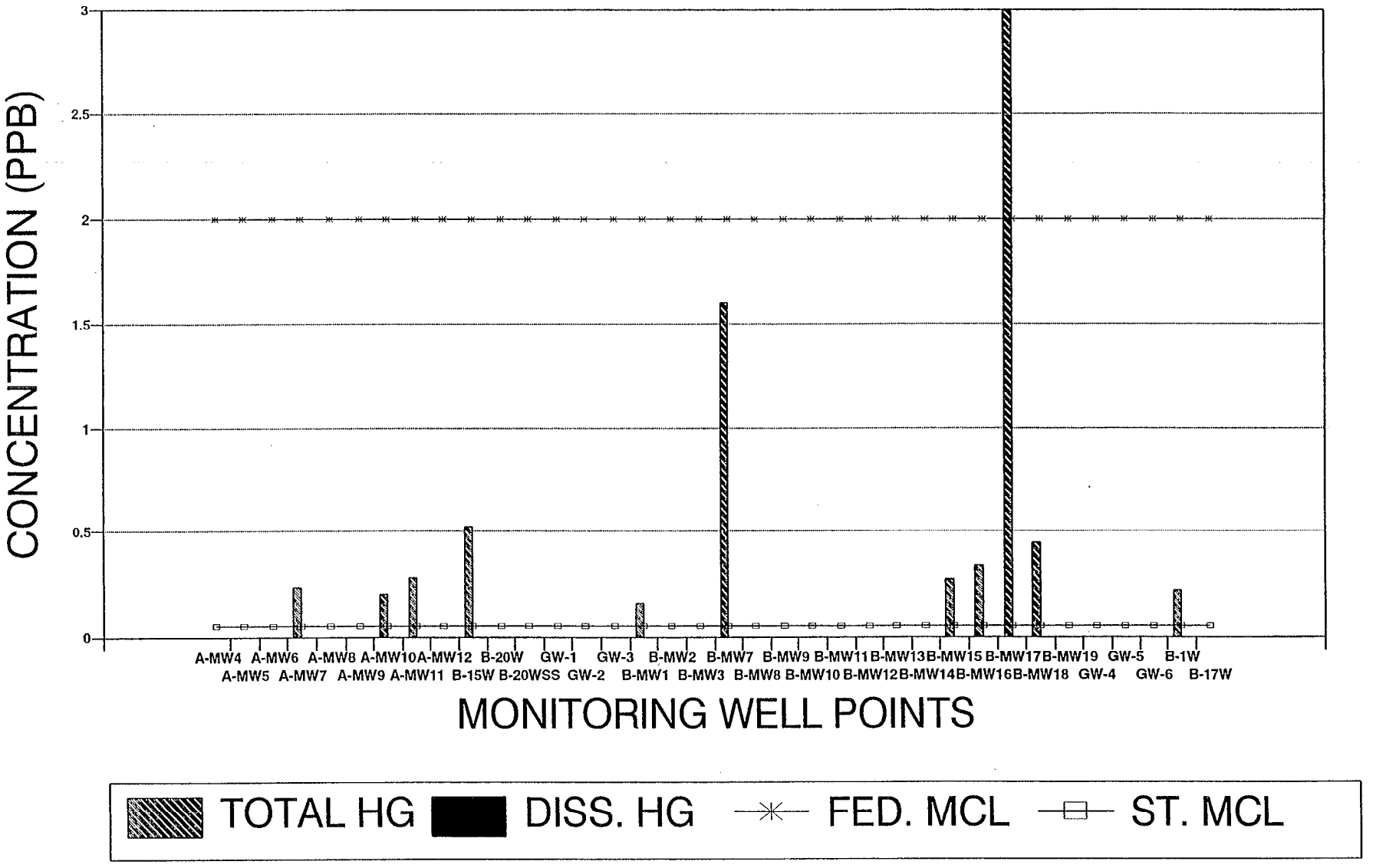
SHALLOW GROUNDWATER

LEAD - TOTAL VS DISSOLVED



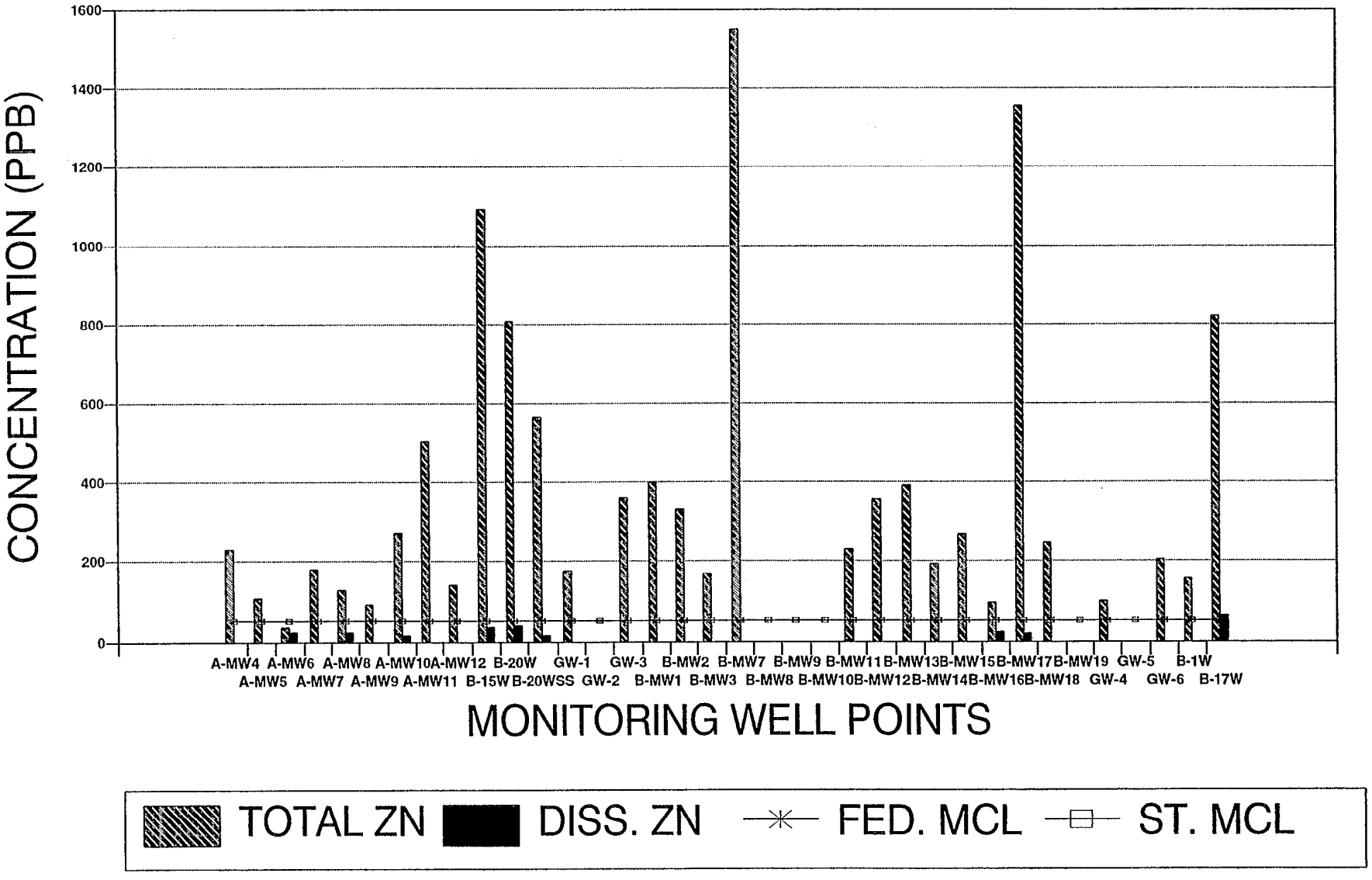
SHALLOW GROUNDWATER

MERCURY - TOTAL VS DISSOLVED



SHALLOW GROUNDWATER

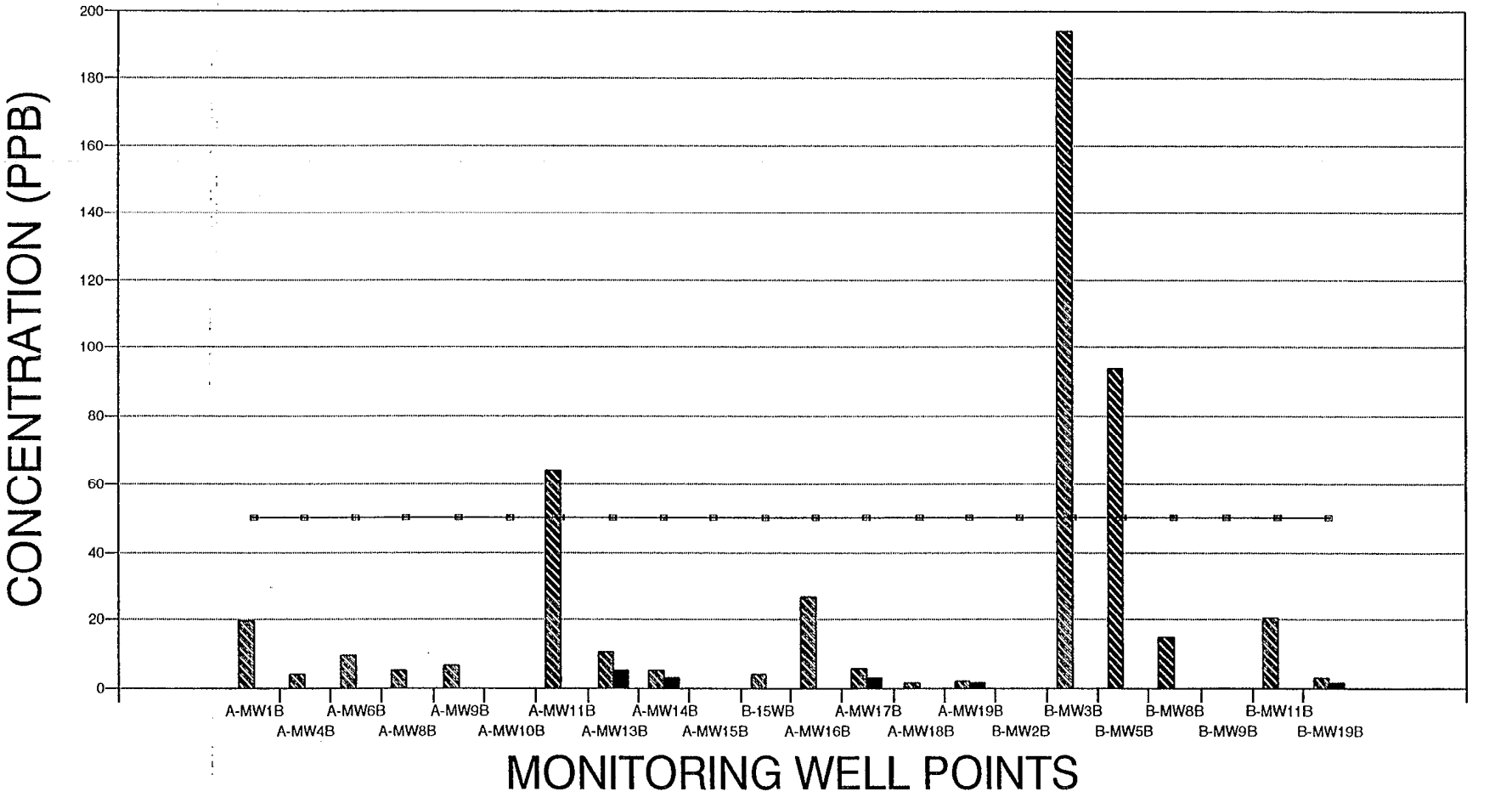
ZINC - TOTAL VS DISSOLVED



COMPARISONS OF DEEP GROUNDWATER SAMPLE RESULTS - TOTAL & DISSOLVED (AREAS A & B)

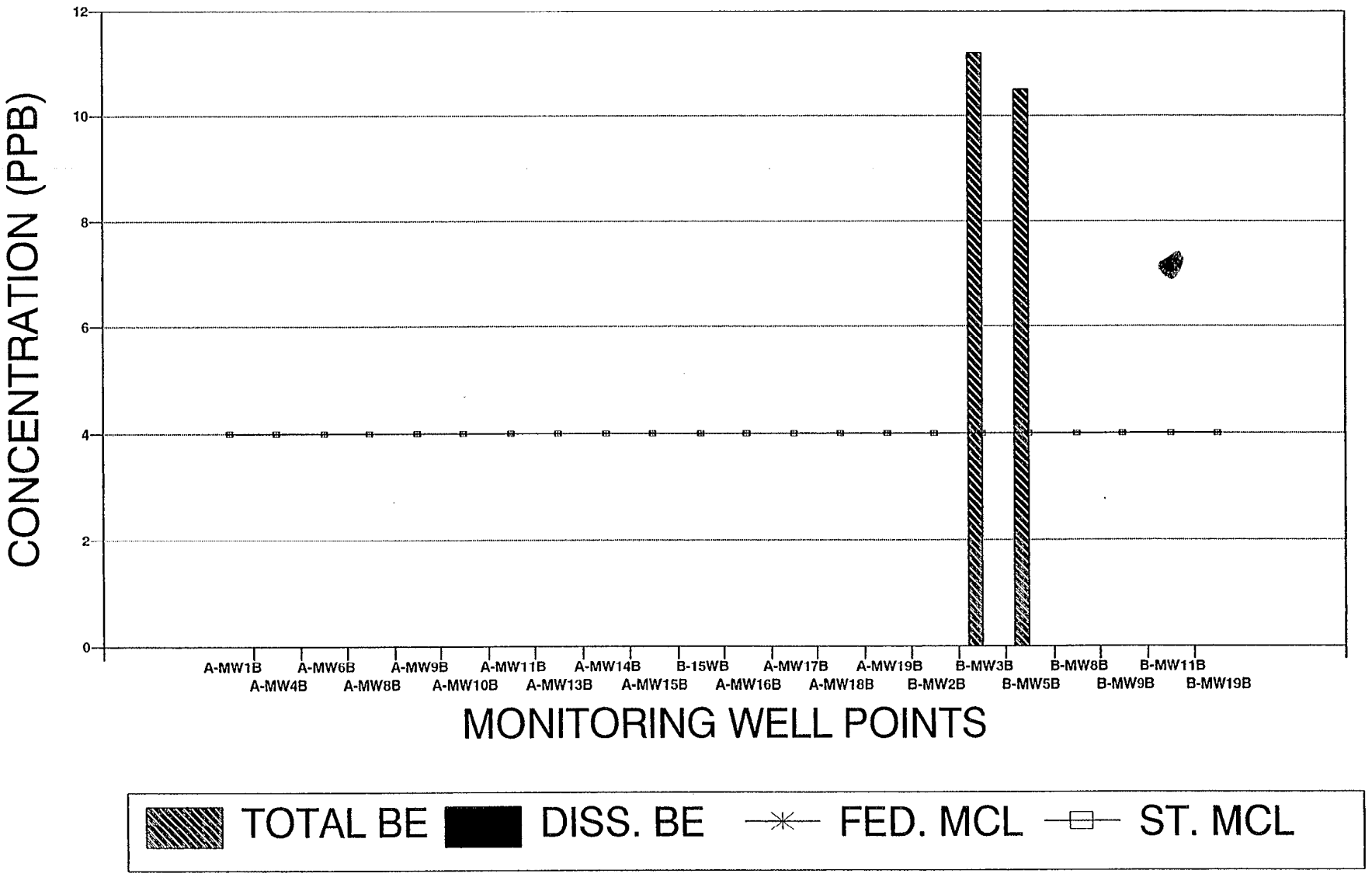
DEEP GROUNDWATER

ARSENIC - TOTAL VS DISSOLVED

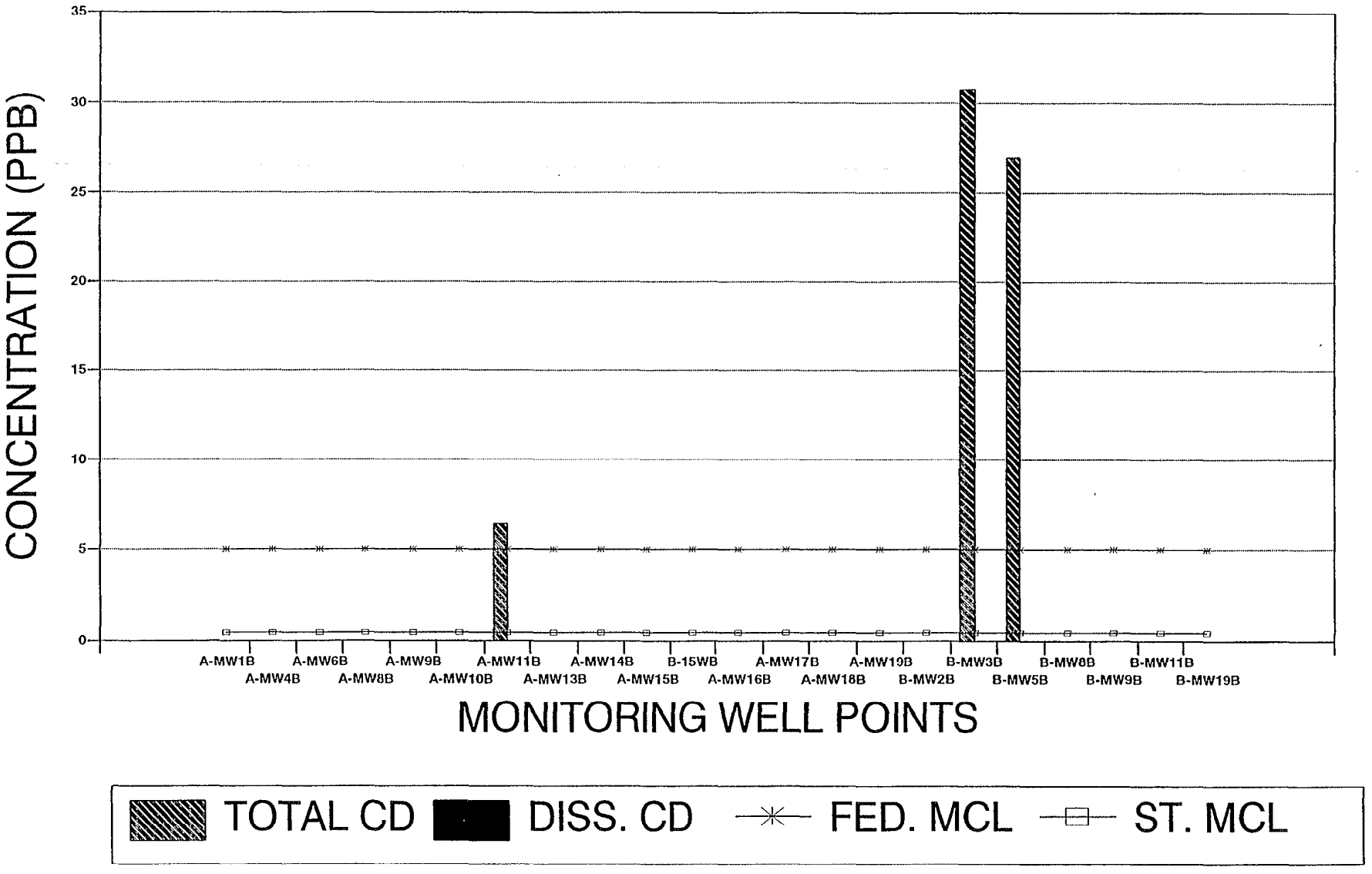


DEEP GROUNDWATER

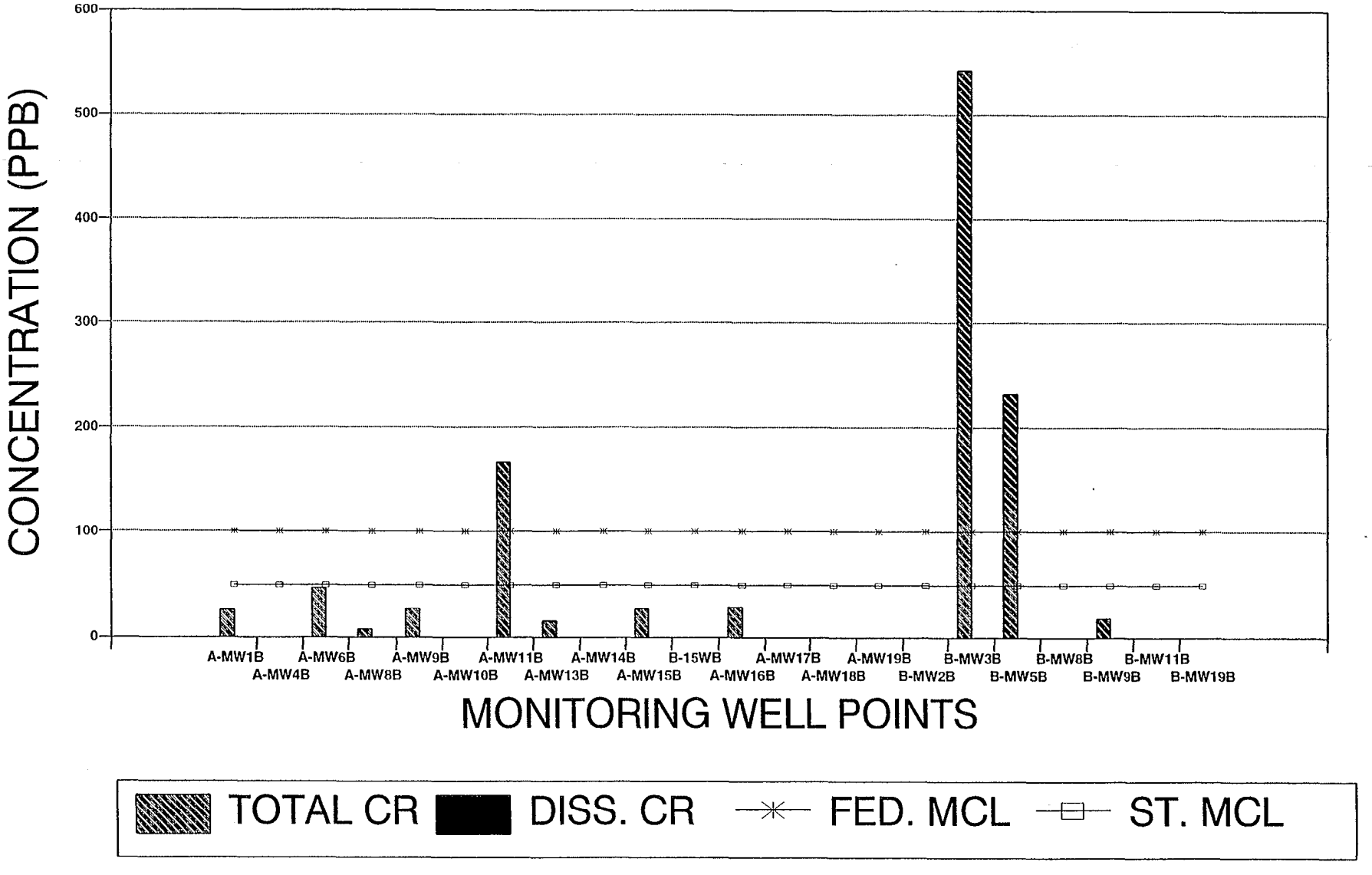
BERYLLIUM - TOTAL VS DISSOLVED



DEEP GROUNDWATER
CADMIUM - TOTAL VS DISSOLVED

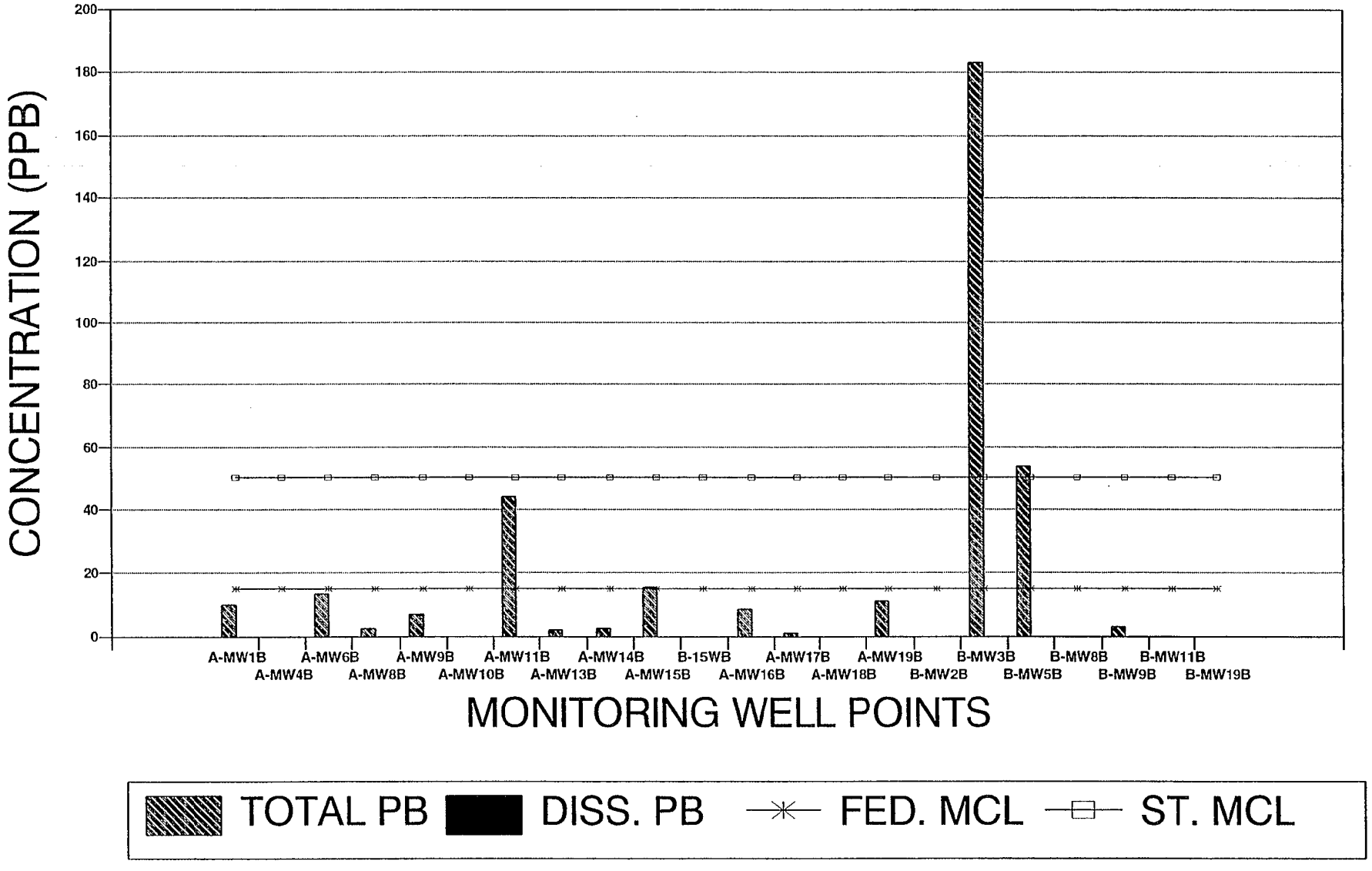


DEEP GROUNDWATER
CHROMIUM - TOTAL VS DISSOLVED

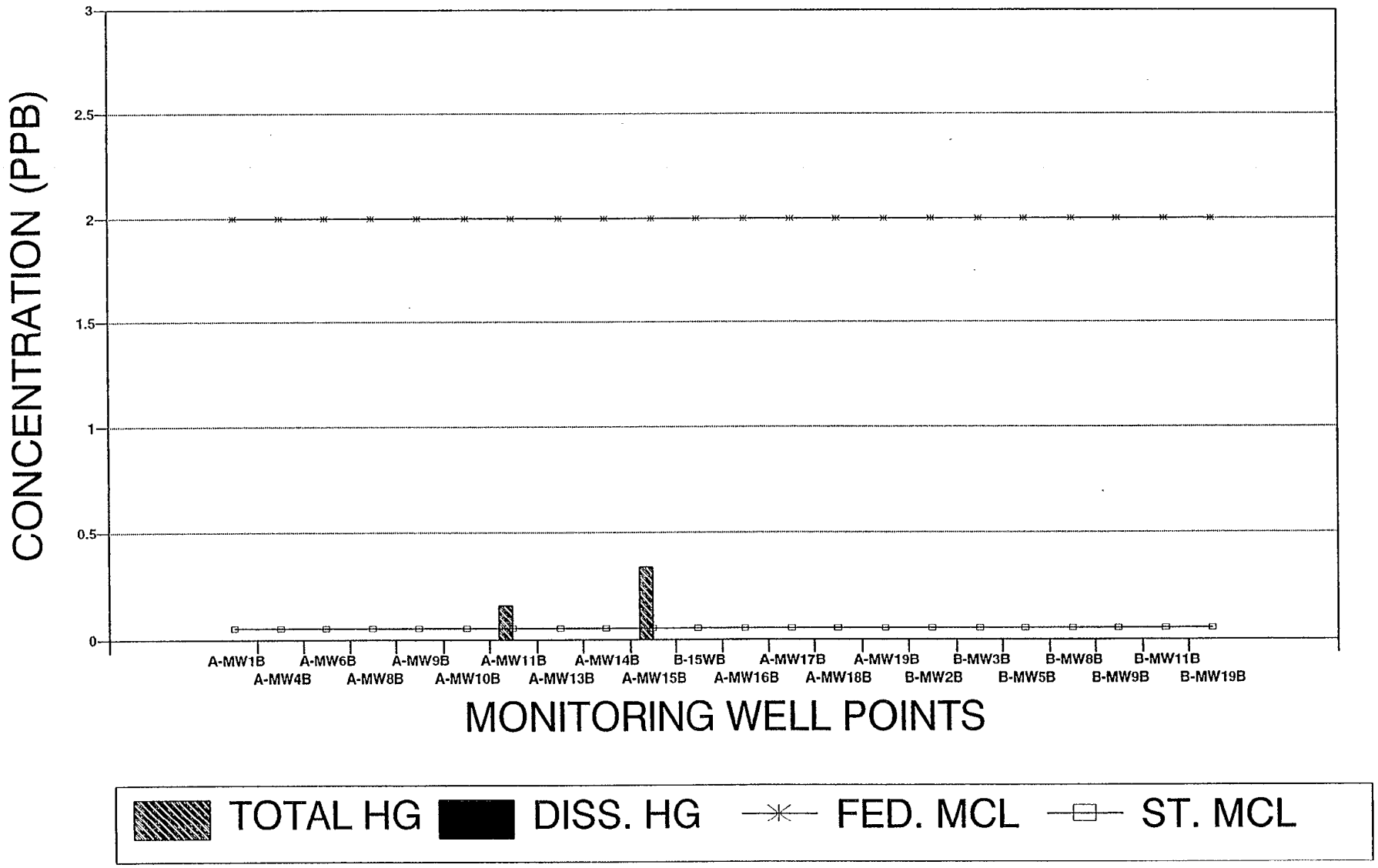


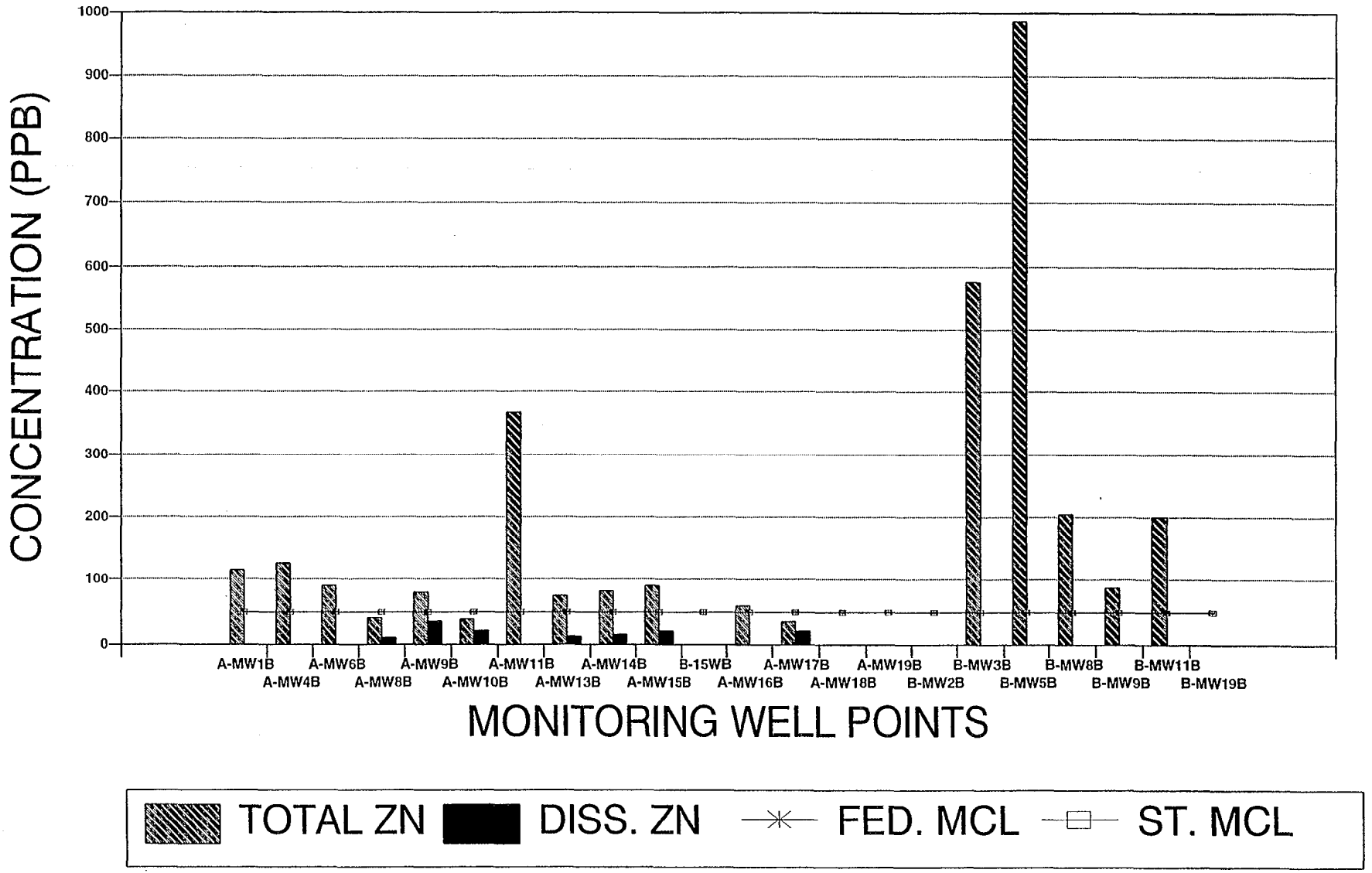
DEEP GROUNDWATER

LEAD - TOTAL VS DISSOLVED



DEEP GROUNDWATER
MERCURY - TOTAL VS DISSOLVED



DEEP GROUNDWATER

ZINC - TOTAL VS DISSOLVED