**Idaho
National
Engineering
Laboratory**

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October 1995

**Storm Water
Monitoring Report for the**
1995 Reporting Period

APR 17 1996

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Lockheed
Idaho Technologies Company

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Storm Water Monitoring Report for the 1995 Reporting Period

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ABSTRACT

The *Storm Water Monitoring Report for the 1995 Reporting Period* includes sampling results and other relevant information gathered in the past year by LITCO's Environmental Monitoring and Water Resources Unit. The 1995 reporting period is October 1, 1994 through September 30, 1995. The storm water monitoring program tracks information about types and amounts of pollutants present. Data are required for the Environmental Protection Agency and are transmitted via Discharge Monitoring Reports. Additional information resulting from the program contributes to Best Management Practice to control pollution in runoff as well as Storm Water Pollution Prevention Plans.

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ACRONYMS

ANL	Argonne National Laboratory-West
CFA	Central Facility Area
cfm	cubic feet per minute
cfs	cubic feet per second
CTF	Containment Test Facility
DCG	Derived Concentration Guidelines
DOE	U.S. Department of Energy
ICPP	Idaho Chemical Processing Plant
INEL	Idaho National Engineering Laboratory
lpm	Liters per Minute
mrem/yr	Millirem per year
NA	not applicable
ND	nondetect
PBF	Power Burst Facility
ppb	parts per billion also ($\mu\text{g/L}$)
ppm	parts per million also (mg/L)
RCRA	Resource Conservation Recovery Act
RWMC	Radioactive Waste Management Complex
SDA	Subsurface Disposal Area
SDWA	Safe Drinking Water Act
SMC	Specific Manufacturing Capabilities
STP	Sewage Treatment Plant
SWEPP	Stored Waste Examination Pilot Plant
TSF	Technical Support Facility
USGS	United States Geological Survey

1994-1995 STORM WATER MONITORING REPORT

1. INTRODUCTION

This report presents analytical data collected from storm water discharges as a part of the Environmental Monitoring Storm Water Monitoring Program for 1994-1995 for facilities located on the Idaho National Engineering Laboratory (INEL). This monitoring is required by the *INEL Storm Water Pollution Prevention Plan for Industrial Activities* (DOE/ID-10431) and the *General Permit for Storm Water Discharges Associated with Industrial Activities* (57 FR 41236).

1.1 Sample Analysis

Samples were collected per requirements found in the *Environmental Monitoring Program Plan*, the draft *Sample and Analysis Plan for the Sampling of Storm Water* and referenced Standard Operating Procedures. Samples were analyzed by Weston, Inc., of Lionville, Pennsylvania and/or AccuLabs Research, Inc. of Golden Colorado, per the requirements identified in subcontract numbers (C92-170162 and C90-132792 Modification 6). Samples for radiological analyses were analyzed by AccuLabs Research, Inc. and/or Analytical Technology Incorporated of Fort Collins, Colorado, per the requirements in subcontract numbers C90-132792 Modifications 6, and C93-170306-057. All analytical work is performed according to Code of Federal Regulations (CFR) Part 40 Section 136 methods or acceptable equivalents, as a minimum.

1.2 Discussion

In the following sections, the data for 37 storm water events are discussed on a facility basis. Storm water events include samples from rainfall discharges, snow melt discharges and water sampled from the basins of underground injection wells. Table 1 presents a chronological sequence of all samples taken for the 1994-95 program.

Flow did not occur at the following monitoring points:

- CFA-MP-2/1 INEL Landfill #3 Extension
- TRA-MP-1/2 North Perimeter
- TRA-MP-2/2 Northeast corner.

Storm water discharges to the Big Lost River System occurred at the following monitoring points (Figure A1):

- RWMC-MP-1/2 Operations Area

- RWMC-MP-2/1 Subsurface Disposal Area
- RWMC-MP-3/2 Transuranic Storage Area
- SMC-MP-1/2 West Perimeter
- CTF-MP-1/2 Collection Basin.

A storm water discharge into a deep injection well occurred at PBF-MP-3/2 (SPERT DISP 2), the middle well at PBF. Other discharges into deep injection wells at PBF may have occurred and been sampled by the United States Geological Survey (USGS).

The report is presented in chronological sequence by facility. A map of the sample locations will follow each facility discussion. Tables for radiological and/or volatile data for each facility follow the inorganic summary tables. They are designated with the same table number followed by an "R" for radiological or a "V" for volatile. For example, the radiological table for the sample number CFA-MP-1/2 located in Table 2 would be Table 2R. The field logbook pages will be in Appendix A. Appendix B will list the volatile parameters analyzed for by the laboratories.

There are no storm water discharge limits specified in the General Storm Water Permit with the exception of the coal pile runoff. Therefore, storm water concentrations are compared to Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste criteria, Safe Drinking Water Act (SDWA) Standards, and the City of Idaho Falls Sewer Code limits. These limits are provided only as a point of reference. Radiological concentrations are compared to Derived Concentration Guidelines (DCGs) found in U.S. Department of Energy (DOE) Order 5400.5, and SDWA standards when available.

Abbreviations within the text will be expressed as follows: liters per minute (lpm), cubic feet per minute (cfm), cubic feet per second (cfs), parts per billion ($\mu\text{g/L}$) or (ppb), parts per million (mg/L) or (ppm), ND nondetect, and NA not applicable.

Table 1. Storm water sampling activities for the 1995 reporting period.

Sample ID #	Type	Time	Date
ICPP-MP-1/1G	SW	1330	10/04/94
ICPP-MP-1/1C	SW	1330	10/04/94
TSF011195-2/2G	SM	1007	01/11/95
CTF011195-1/2G	SM	1035	01/11/95
TSF011195-1/2G	SM	1105	01/11/95
SMC011195-1/2G	SM	1157	01/11/95
SMC-MP-1/2C	SM-B	1212	01/11/95
CPP011195-2/1G	SM	1307	01/11/95
RWMC-MP-1/2G	SM	1345	01/11/95
RWMC-MP-3/2G	SM	1409	01/11/95
CFA011295-1/2G	SM	1412	01/12/95
CFA011295-3/2G	SM	1422	01/12/95
RWMC020295-2/1G	SM	1645	02/02/95
RWMC020395-2/1G	SM	1536	02/03/95
ICPP020395-1/1G	SM	1615	02/03/95
PBF020395-1/2G	SM	1735	02/03/95
ANL020295-2/2G	SM	1613	02/02/95
SMC031095-1/2C	SW-B	1018	03/10/95
RWMC031195-2/1G	SW	1111	03/11/95
RWMC031195-2/1C	SW	1120	03/11/95
RWMC031195-3/2G	SW	1140	03/11/95
RWMC031195-1/2G	SW	1150	03/11/95
ICPP-MP-2/1G	SW-B	1305	03/11/95
ICPP031195-1/1G	SW	1335	03/11/95
TSF031195-1/2G	SW	1404	03/11/95
SMC031195-1/2G	SW	1425	03/11/95
SMC031195-1/2C	SW-B	1435	03/11/95
TSF032195-2/2G	SW-DW	1125	03/21/95
TSF032195-1/2G	SW-DW	1240	03/21/95
ICPP050395-1/1G	SW	1310	05/03/95
ICPP050395-1/1C	SW	1330	05/03/95
ANL050295-2/2G	SW	1604	05/02/95
ANL050295-1/2G	SW	1614	05/02/95
RWMC-MP-2/1G	SW	N/A	05/06/95
RWMC-MP-2/1C	SW	N/A	05/06/95

Table 1. (continued).

Sample ID #	Type	Time	Date
PBF060795-3/2 G	Well SW-DW	1350	06/07/95
CFA060795-1/2 G	SW	1420	06/07/95

C = composite sample.

G = grab sample, if a code is not present, a grab sample was taken.

SW = storm water.

SM = snow melt.

B = sample collected from standing water in a collection basin.

Well = sample of storm water flowing into an injection well

DW = sample parameters included drinking water parameters.

BIG LOST RIVER SYSTEM

Figure A1. The Big Lost River drainage system.

Birch Creek di
for hydropower
irrigation

With the exceptions noted below, all hydrological features are based on DLG electronic data for 1:24,000 scale maps obtained from the USGS.

1. Spreading areas A-D: Based on the 5,050-ft contour on "Topographic Map of the Reactor Testing Station" map (10-ft contour intervals.) Drawing Index codes 1010000 014 111117 - 111147.
2. Plays No. 1: The USGS 1:24,000 scale DLG electronic data for Plays No. 1 was arbitrarily extended over the INEL boundary on the west side of the plays to indicate that irrigation water is taken at this point.
3. Birch Creek Plays: Corresponds to the area below the 4,784-ft contour on a 2-ft contour interval topographic map of TAN, which was plotted from digital data from the 1990 aerial survey by Aerographics.
4. Hydrological features for the following areas were digitized by Lowell Williams and Merd Cook of EG&G Idaho in June of 1992:
 - A. Kettle Butte N.W.
 - B. Kettle Butte S.W.
 - C. Quaking Aspen Butte
 - D. Richards Butte
 - E. Terreton
 - F. Scoville
 - G. Big Southern Butte
5. Birch Creek Diversion: Survey data from Sorensen Engineering, Idaho Falls, Idaho, Feb. 1988, Birch Creek Hydroelectric Facility, Drawing No. D88-13429. Birch Creek Diversion includes the irrigation return flow from Reno Ranch.
6. Flow on north side of ICPP to Big Lost River: Based on digital data from Aerographics west of the railroad tracks and on inspection east of the tracks.

Roads and Facilities: Based on digital data obtained from K. W. Taylor (EG&G Idaho) and from 1:24,000 scale maps obtained from USGS.

Date Drawn : July 05, 1995

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LEGEND

- Big Lost River System
- Channels Tributary to Big Lost River System
- Channels Not Tributary to Big Lost River System
- Roads
- INEL Boundary
- Playas
- Spreading Areas that are part of the Big Lost River System
- Spreading Areas

2. ARGONNE NATIONAL LABORATORY (ANL)

2.1 ANL-MP-2/2 (GRAB)

Samples were collected on February 2, 1995 from snow melt at the culvert by the ditch northeast of building T-12. Flow information was not available. Chemical concentrations did not exceed the referenced guidelines for any of the parameters (Table 2).

Table 2. Comparison of ANL-MP-2/2-G Data on 02/02/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	121	NA	NA	NA
pH	6.5	2.5-12	6.5-8.5	5.5-9.0
Sulfuric Acid (mg/L)	4.7	NA	NA	NA
TOC (mg/L)	23.2	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	48.0	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	5.8	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	42.9	NA	5000	2610

Table 2R. ANL-MP-2/2-G radiological data from 02/02/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	3.57E-03	6.90E-04	0.050	--
K-40 (pCi/mL)	7.36E-02	1.93E-01	--	7.00E+00

2.2 ANL-MP-1/2 (GRAB)

Samples were collected on May 2, 1995 from storm water runoff where two ditches come together north of building 757. The rainfall recorded for this event was 0.22 inches. The duration of the event was 5 hours and 25 minutes. Lead was reported as 25.4 ppb and SDWA standard action level is 15.0 ppb (Table 3).

Table 3. Comparison of ANL-MP-1/2-G Data on 05/02/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	61.0	NA	NA	NA
pH	7.3	2.5-12	6.5-8.5	5.5-9.0
Sulfuric Acid (mg/L)	7.9	NA	NA	NA
TOC (mg/L)	14.7	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	121	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	11.6	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	25.4	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	234	NA	5000	2610

Table 3R. ANL-MP-1/2-G radiological data from 05/02/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	8.40E-03	1.30E-03	0.050	--
K-40 (pCi/mL)	4.94E-02	7.68E-02	--	7.00E+00

2.3 ANL-MP-2/2 (GRAB)

Samples were collected on May 2, 1995 from storm water runoff at the culvert by the ditch northeast of building T-12. The rainfall recorded for this event was 0.22 inches. The duration of the event was 5 hours and 25 minutes. Lead was reported to be 20.9 ppb and SDWA standard action level is 15.0 ppb (Table 4).

Table 4. Comparison of ANL-MP-2/2-G Data on 05/02/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	63.0	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
TOC (mg/L)	13.8	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	110	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	12.8	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	20.9	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	205	NA	5000	2610

Table 4R. ANL-MP-2/2-G radiological data from 05/02/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	8.20E-03	1.30E-03	0.050	--
K-40 (pCi/mL)	1.32E-01	4.84E-02	--	7.00E+00

Figure 1. ANL-W points for the Storm Water Monitoring Program.

3. CENTRAL FACILITIES AREA (CFA)

3.1 CFA-MP-1/2 (GRAB)

Samples were collected on January 12, 1995 from the culvert located at the corner of Lansing and Antenna Farm Road. The samples were from snow melt. Samples were collected using a peristaltic pump as the liquid was released from the culvert. The liquid was pumped directly into the sample containers. The weather was cloudy and approximately 35°F. The flow was recorded to be 5.63 cfm. Chemical concentrations did not exceed the reference guidelines for any of the parameters (Table 5).

Table 5. Comparison of CFA-MP-1/2-G Data on 01/12/95 to regulatory guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	432	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Surfactants (mg/L)	ND	NA	0.5	NA
TOC (mg/L)	12.8	NA	NA	NA
Total Oil & Grease (mg/L)	18.5	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	29.0	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	ND	5000	100	2770
Copper (µg/L)	ND	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	10.9	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	63.8	NA	5000	2610

Table 5R. CFA-MP-1/2-G radiological data from 01/12/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	5.90E-03	1.80E-03	0.050	--

3.2 CFA-MP-3/2 (GRAB)

Samples were collected on January 12, 1995 from snow melt at the Central Facilities Disposal Well. The flow was recorded at 1.25 cfm. Samples were collected as flow entered into the retention basin. A pump was used to collect samples. The weather was cloudy and the temperature was approximately 35°F. Chemical concentrations did not exceed the reference guidelines for any of the parameters (Table 6).

Table 6. Comparison of CFA-MP-3/2-G Data on 01/12/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	411	NA	NA	NA
pH	7.0	2.5-12	6.5-8.5	5.5-9.0
TOC (mg/L)	20.5	NA	NA	NA
TSS (mg/L)	38.0	NA	NA	NA
Silver (μg/L)	ND	5000	100	450
Arsenic (μg/L)	ND	5000	50	70
Barium (μg/L)	ND	100,000	2000	NA
Cadmium (μg/L)	ND	1000	5	690
Chromium (μg/L)	ND	5000	100	2770
Copper (μg/L)	ND	NA	1300	3380
Mercury (μg/L)	ND	200	2	250
Nickel (μg/L)	ND	NA	100	3980
Lead (μg/L)	10.6	5000	15	620
Selenium (μg/L)	ND	1000	50	50
Zinc (μg/L)	68.7	NA	5000	2610

Table 6R. CFA-MP-3/2-G radiological data from 01/12/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	8.60E-03	2.00E-03	0.050	--

3.3 CFA-MP-1/2 (GRAB)

Samples were taken on June 07, 1995 from storm water runoff at the culvert located at the intersection of Lansing and Antenna Farm Road. The rainfall recorded for this event was 1.83 inches and the duration of the event was 29 hours and 20 minutes. Samples were collected directly into the sample containers. A beaker was used to collect the 4-liter volume for radiochemistry. No flow measurements were taken because the ditch was full but was not flowing. Chemical concentrations did not exceed any of the referenced guidelines for any of the parameters (Table 7).

Table 7. Comparison of CFA-MP-1/2-G Data on 06/07/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	113	NA	NA	NA
pH	7.8	2.5-12	6.5-8.5	5.5-9.0
Surfactants (mg/L)	0.24	NA	0.5	NA
TOC (mg/L)	5.5	NA	NA	NA
Total Oil & Grease (mg/L)	2.4	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	1.2	NA	NA	100
TSS (mg/L)	520	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	11.9	5000	15	620
Antimony (μ g/L)	ND	NA	6	NA
Selenium (μ g/L)	ND	1000	50	50
Thallium (μ g/L)	ND	NA	2	NA
Vanadium (μ g/L)	ND	NA	NA	NA

Table 7R. CFA-MP-1/2-G radiological data from 06/07/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	2.95E-03	6.30E-04	0.050	--
K-40 (pCi/mL)	8.62E-02	4.26E-02		7.00E+00

Figure 2. CFA points and wells for the Storm Water Monitoring Program.

4. RADIOACTIVE WASTE MANAGEMENT COMPLEX (RWMC)

4.1 RWMC-MP-1/2 (GRAB)

Samples were taken on January 11, 1995 from snow melt at the inlet or outlet of culvert # 16. The outlet is right before the bridge to the Stored Waste Examination Pilot Plant (SWEPP). Samples were collected from the culvert as it discharged into the ditch. It was sunny and windy with the temperature at 45°F. Flow was estimated to be 78 lpm. Chemical concentration for Total Dissolved Solids (TDS) was 693 ppm (mg/L) (Table 8). The SDWA secondary drinking water standard for TDS is 500 ppm. Lead was reported as 30.1 ppb and SDWA standard lead action level is 15 ppb. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride (MgCl₂) salts applied as dust suppressant to roads. This practice was discontinued in 1993. The remaining concentrations were below guidelines.

Table 8. Comparison of RWMC-MP-1/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	627	NA	NA	NA
pH	7.0	2.5-12	6.5-8.5	5.5-9.0
Chemical Oxygen Demand (mg/L)	42.5	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.14	NA	NA	NA
TDS (mg/L)	693	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	1.3	NA	NA	NA
TOC (mg/L)	4.3	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	592	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	41.0	5000	100	2770
Copper (µg/L)	55.9	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Magnesium (µg/L)	19700	NA	NA	NA
Magnesium, Soluble (µg/L)	17200	NA	NA	NA
Nickel (µg/L)	48.6	NA	100	3980
Lead (µg/L)	30.1	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	229	NA	5000	2610

Table 8R. RWMC-MP-1/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	8.30E-03	2.40E-03	0.050	--

4.2 RWMC-MP-3/2 (GRAB)

Samples were collected on January 11, 1995 from snow melt at the inlet or outlet of culvert # 23, northeast of WMF-635. Flow was estimated to be 42 lpm. The usual sample point was under snow, so this sample was taken approximately 50 feet upstream. The samples were collected using a bucket and dipper. The weather was sunny and windy with the temperature around 45°F. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993. Chemical concentrations did not exceed the reference guidelines for any parameters (Table 9).

Table 9. Comparison of RWMC-MP-3/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	179	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Chemical Oxygen Demand (mg/L)	18.7	NA	NA	NA
TDS (mg/L)	263	NA	500	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	ND	5000	50	70
Barium ($\mu g/L$)	ND	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	ND	5000	100	2770
Copper ($\mu g/L$)	ND	NA	1300	3380
Mercury ($\mu g/L$)	ND	200	2	250
Nickel ($\mu g/L$)	ND	NA	100	3980
Lead ($\mu g/L$)	3.8	5000	15	620
Selenium ($\mu g/L$)	ND	1000	50	50
Zinc ($\mu g/L$)	138	NA	5000	2610

Table 9R. RWMC-MP-3/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	5.17E-03	8.70E-04	0.050	--

4.3 RWMC-MP-2/1 (GRAB)

Samples were collected on February 2, 1995 from snow melt just inside Subsurface Disposal Area (SDA) upstream from sump, at culvert C-12. The flow information for this report was not available and field parameters were not taken. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993. Chemical concentrations did not exceed the referenced guidelines for any parameters (Table 10).

Table 10. Comparison of RWMC-MP-2/1-G Data on 02/02/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Cyanide ($\mu g/L$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	21.6	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	ND	NA	NA	NA
TDS (mg/L)	126	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	1.5	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	ND	5000	50	70
Barium ($\mu g/L$)	ND	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	ND	5000	100	2770
Copper ($\mu g/L$)	ND	NA	1300	3380
Mercury ($\mu g/L$)	ND	200	2	250
Magnesium ($\mu g/L$)	8520	NA	NA	NA
Nickel ($\mu g/L$)	ND	NA	100	3980
Lead ($\mu g/L$)	ND	5000	15	620
Selenium ($\mu g/L$)	ND	1000	50	50
Zinc ($\mu g/L$)	98.8	NA	5000	2610

Table 10R. RWMC-MP-2/1-G radiological data from 02/02/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	2.25E-03	3.50E-04	--	3.00E-02
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Pu-239/240 (pCi/mL)	9.00E-05	4.00E-05	--	--
Strontium-90 (pCi/mL)	1.49E-03	7.70E-05	0.008	1.00E+00
Th-230 (pCi/mL)	1.70E-04	6.00E-05	--	3.00E-01
Th-232	4.00E-05	3.00E-05	--	5.00E-02
U-234 (pCi/mL)	3.30E-04	8.00E-05	--	5.00E-01
U-238 (pCi/mL)	2.40E-04	7.00E-05	--	6.00E-01

Table 10V. Volatile organics data for RWMC-MP-2/1-G on 02/03/95.

Parameter	Results	Units	Qualifier Flag	SDWA
Toluene	1.00	µg/L	J	100

J = Indicates an estimated value. This flag is used under the following circumstances: (1) when estimating a concentration for tentatively identified compounds (TIC) where a 1:1 response is assumed; or (2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 µg/L and a concentration of 3 µg/L is calculated, it is reported as 3J.

4.4 RWMC-MP-2/1 (GRAB)

Samples were collected on February 3, 1995 from snow melt just inside the SDA upstream from the sump at culvert # C-12. Water was flowing from the west in the ditch into the culvert leading to the sump. Water was collected at the point where the water enters the culvert to the sump. Flow was not determined due to the ice and snow covering the ditch and culvert. Volatile organic analyses were performed and no detects were reported. The weather was sunny and warm with the temperature around 48°F. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993. Chemical concentrations did not exceed the referenced guidelines for any parameters (Table 11).

Table 11. Comparison of RWMC-MP-2/1-G Data on 02/03/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	127	NA	NA	NA
pH	7.4	2.5-12	6.5-8.5	5.5-9.0
Cyanide ($\mu g/L$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	30.2	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.23	NA	NA	NA
TDS (mg/L)	160	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	0.97	NA	NA	NA
TOC (mg/L)	15.3	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	ND	5000	50	70
Barium ($\mu g/L$)	ND	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	ND	5000	100	2770
Copper ($\mu g/L$)	ND	NA	1300	3380
Mercury ($\mu g/L$)	0.29	200	2	250
Magnesium ($\mu g/L$)	11600	NA	NA	NA
Magnesium, Soluble ($\mu g/L$)	10800	NA	NA	NA
Nickel ($\mu g/L$)	ND	NA	100	3980
Lead ($\mu g/L$)	ND	5000	15	620
Antimony ($\mu g/L$)	ND	NA	6	NA
Selenium ($\mu g/L$)	ND	1000	50	50
Thallium ($\mu g/L$)	ND	NA	2	NA
Vanadium ($\mu g/L$)	ND	NA	NA	NA
Zinc ($\mu g/L$)	27.0	NA	5000	2610

Table 11R. RWMC-MP-2/1-G radiological data from 02/03/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	1.00E-03	1.90E-04	--	3.00E-02
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Pu-239/240 (pCi/mL)	7.00E-05	4.00E-05	--	--
Strontium-90 (pCi/mL)	9.00E-04	6.70E-04	0.008	1.00E+00
Th-230 (pCi/mL)	2.20E-04	7.00E-05	--	3.00E-01
U-234 (pCi/mL)	2.30E-04	7.00E-05	--	5.00E-01
U-238 (pCi/mL)	1.80E-04	6.00E-05	--	6.00E-01

4.5 RWMC-MP-2/1 (GRAB)

Samples were collected on March 11, 1995 from storm water runoff at the SDA upstream from the sump located at culvert No. C-12. The rainfall recorded for this event was 0.24 inches. The duration of the event was 16 hours and 25 minutes. Lead was reported at 31.6 ppb and the SDWA action level is 15 ppb (Table 12). Volatile organic samples were taken; however, no detections were reported. The volatile organic compound (VOC) grab sample was not taken within 30 minutes of the storm beginning as the permit requires. Therefore, the sample does not represent the first thirty minutes of discharge. The duration of the previous period of less than 0.1 inch of rain was 7 hours and 20 minutes. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride (MgCl_2) salts applied as dust suppressant to roads. This practice was discontinued in 1993.

Table 12. Comparison of RWMC-MP-2/1-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	103	NA	NA	NA
pH	7.6	2.5-12	6.5-8.5	5.5-9.0
Cyanide ($\mu\text{g/L}$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	42.6	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.51	NA	NA	NA
TDS (mg/L)	196	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	2.9	NA	NA	NA
TOC (mg/L)	10.0	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	16.4	5000	50	70
Barium ($\mu\text{g/L}$)	481	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	58.0	5000	100	2770
Copper ($\mu\text{g/L}$)	57.2	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Magnesium ($\mu\text{g/L}$)	21100	NA	NA	NA
Magnesium, Soluble ($\mu\text{g/L}$)	5020	NA	NA	NA
Nickel ($\mu\text{g/L}$)	46.7	NA	100	3980
Lead ($\mu\text{g/L}$)	31.6	5000	15	620
Antimony ($\mu\text{g/L}$)	ND	NA	6	NA
Selenium ($\mu\text{g/L}$)	ND	1000	50	50

Table 12. (continued).

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Thallium (µg/L)	ND	NA	2	NA
Vanadium (µg/L)	54.3	NA	NA	NA
Zinc (µg/L)	439	NA	5000	2610

Table 12R. RWMC-MP-2/1-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	8.80E-03	1.10E-03	--	3.00E-02
H-3 (pCi/mL)	8.40E-01	4.50E-01	20	2.00E+03
K-40 (pCi/mL)	6.91E-02	4.36E-02	--	7.00E+00
Pu-239/240 (pCi/mL)	1.60E-04	6.00E-05	--	--
Strontium-90 (pCi/mL)	1.02E-03	6.80E-04	0.008	1.00E+00
Th-228 (pCi/mL)	2.90E-04	8.00E-05	--	4.00E-01
Th-230 (pCi/mL)	1.30E-04	6.00E-05	--	3.00E-01
U-234 (pCi/mL)	3.70E-04	9.00E-05	--	5.00E-01
U-238 (pCi/mL)	3.50E-04	9.00E-05	--	6.00E-01
Zn-65 (pCi/mL)	3.83E-03	3.73E-03	--	9.00E+00

4.6 RWMC-MP-2/1 (COMPOSITE)

Samples were collected on March 11, 1995 from storm water runoff just inside the SDA, upstream from the sump at culvert # C-12. Weather was cold, wet and windy. Total flow for the monitoring period was 94,690 liters. The rainfall for this event was 0.24 inches. The duration of the event was 16 hours and 25 minutes. Volatile organic samples were taken; however, no detections were reported. The VOC sample was collected as a grab and represents the conditions at the time the sample was taken. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride (MgCl_2) salts applied as dust suppressant to roads. This practice was discontinued in 1993. Chemical concentrations did not exceed for the referenced guidelines (Table 13).

Table 13. Comparison of RWMC-MP-2/1-C Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	97.0	NA	NA	NA
pH	7.8	2.5-12	6.5-8.5	5.5-9.0
Cyanide ($\mu\text{g/L}$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	22.5	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.38	NA	NA	NA
TDS (mg/L)	139	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	1.7	NA	NA	NA
TOC (mg/L)	6.2	NA	NA	NA
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	ND	5000	50	70
Barium ($\mu\text{g/L}$)	ND	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	20.1	5000	100	2770
Copper ($\mu\text{g/L}$)	ND	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Magnesium ($\mu\text{g/L}$)	7940	NA	NA	NA
Magnesium, Soluble ($\mu\text{g/L}$)	ND	NA	NA	NA
Nickel ($\mu\text{g/L}$)	ND	NA	100	3980
Lead ($\mu\text{g/L}$)	9.8	5000	15	620
Antimony ($\mu\text{g/L}$)	ND	NA	6	NA
Selenium ($\mu\text{g/L}$)	ND	1000	50	50
Thallium ($\mu\text{g/L}$)	ND	NA	2	NA
Vanadium ($\mu\text{g/L}$)	ND	NA	NA	NA
Zinc ($\mu\text{g/L}$)	185	NA	5000	2610

Table 13R. RWMC-MP-2/1-C radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	2.15E-03	3.30E-04	--	3.00E-02
K-40 (pCi/mL)	1.04E-01	9.84E-02	--	7.00E+00
Th-228 (pCi/mL)	2.10E-04	8.00E-05	--	4.00E-01
Th-230 (pCi/mL)	1.30E-04	7.00E-05	--	3.00E-01
U-234 (pCi/mL)	2.30E-04	7.00E-05	--	5.00E-01
U-238 (pCi/mL)	1.50E-04	5.00E-05	--	6.00E-01

4.7 RWMC-MP-3/2 (GRAB)

Samples were collected on March 11, 1995 from storm water runoff at the inlet/outlet of culvert # 23, northeast of WMF-635. Samples were collected into a bucket. Liquid was transferred from the bucket to the sample containers. The weather was wet, cold, and windy. The flow was recorded at 102.56 lpm. The rainfall for this event was 0.24 inches. The duration of the event was 16 hours and 25 minutes. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride (MgCl_2) salts applied as dust suppressant to roads. This practice was discontinued in 1993. Chemical concentrations did not exceed for the referenced guidelines (Table 14).

Table 14. Comparison of RWMC-MP-3/2-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	66.0	NA	NA	NA
pH	7.1	2.5-12	6.5-8.5	5.5-9.0
Chemical Oxygen Demand (mg/L)	9.5	NA	NA	NA
TDS (mg/L)	89.0	NA	500	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	ND	5000	50	70
Barium ($\mu\text{g/L}$)	ND	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	10.8	5000	100	2770
Copper ($\mu\text{g/L}$)	ND	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Nickel ($\mu\text{g/L}$)	ND	NA	100	3980
Lead ($\mu\text{g/L}$)	4.2	5000	15	620
Antimony ($\mu\text{g/L}$)	ND	NA	6	NA
Selenium ($\mu\text{g/L}$)	ND	1000	50	50
Thallium ($\mu\text{g/L}$)	ND	NA	2	NA
Vanadium ($\mu\text{g/L}$)	ND	NA	NA	NA
Zinc ($\mu\text{g/L}$)	52.2	NA	5000	2610

Table 14R. RWMC-MP-3/2-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Th-230 (pCi/mL)	8.00E-05	4.00E-05	--	3.00E-01
U-234 (pCi/mL)	2.00E-04	7.00E-05	--	5.00E-01
U-238 (pCi/mL)	1.40E-04	5.00E-05	--	6.00E-01

4.8 RWMC-MP-1/2 (GRAB)

Samples were collected March 11, 1995 from storm water runoff at the inlet or outlet of culvert #16, just before the bridge to SWEPP. The rainfall for this event was 0.24 inches. The duration of the event was 16 hours and 25 minutes. The field measurement of pH was recorded to be 6.4 (Table 15). The SDWA recommends a range of 6.5-8.5. Lead was reported to be 18.8 ppb and the SDWA standard action level is 15 ppb. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993.

Table 15. Comparison of RWMC-MP-1/2-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	331	NA	NA	NA
pH	6.4	2.5-12	6.5-8.5	5.5-9.0
Cyanide ($\mu g/L$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	25.0	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.13	NA	NA	NA
TDS (mg/L)	376	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	1.0	NA	NA	NA
TOC (mg/L)	24.0	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	10.6	5000	50	70
Barium ($\mu g/L$)	304	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	28.6	5000	100	2770
Copper ($\mu g/L$)	33.5	NA	1300	3380
Mercury ($\mu g/L$)	ND	200	2	250
Magnesium ($\mu g/L$)	20900	NA	NA	NA
Magnesium, Soluble ($\mu g/L$)	13600	NA	NA	NA
Nickel ($\mu g/L$)	ND	NA	100	3980
Lead ($\mu g/L$)	18.8	5000	15	620
Selenium ($\mu g/L$)	ND	1000	50	50
Zinc ($\mu g/L$)	133	NA	5000	2610

Table 15R. RWMC-MP-1/2-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--
K-40 (pCi/mL)	6.00E-02	4.32E-02	--	7.00E+00

4.9 RWMC-MP-2/1 (GRAB)

Samples were collected on May 6, 1995 from storm water runoff and sent to the laboratories on May 10, 1995. The rainfall for this event was 0.56 inches. The duration of the event was 19 hours and 20 minutes. Lead was reported at a concentration of 47.9 ppb and the guidelines per the SDWA standard is 15.0 ppb as an action level (Table 16). No field notes were available for this sample. Information was obtained from the chain of custody. The duration of the previous period of less than 0.1 inch of rain was 11 hours. VOC samples were obtained, although it can not be verified that the samples were representative of the storm. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993.

Table 16. Comparison of RWMC-MP-2/1-G Data on 05/06/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Cyanide ($\mu g/L$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	108	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.41	NA	NA	NA
TDS (mg/L)	376	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	3.0	NA	NA	NA
TOC (mg/L)	12.1	NA	NA	NA
Total Oil & Grease (mg/L)	5.2	NA	NA	250
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	17.2	5000	50	70
Barium ($\mu g/L$)	828	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	66.6	5000	100	2770
Copper ($\mu g/L$)	77.3	NA	1300	3380
Mercury ($\mu g/L$)	ND	200	2	250
Magnesium ($\mu g/L$)	37100	NA	NA	NA
Magnesium, Soluble ($\mu g/L$)	18,700	NA	NA	NA
Nickel ($\mu g/L$)	72.5	NA	100	3980
Lead ($\mu g/L$)	47.9	5000	15	620
Antimony ($\mu g/L$)	ND	NA	6	NA
Selenium ($\mu g/L$)	ND	1000	50	50
Thallium ($\mu g/L$)	ND	NA	2	NA
Vanadium ($\mu g/L$)	73.6	NA	NA	NA
Zinc ($\mu g/L$)	298	NA	5000	2610

Table 16R. RWMC-MP-2/1-G radiological data from 05/06/95.

Parameter	Sample results	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	3.02E-03	4.30E-04	--	3.00E-02
H-3 (pCi/mL)	3.72E+00	6.80E-01	20	2.00E+03
K-40 (pCi/mL)	2.60E-01	5.07E-02	--	7.00E+00
Pu-239/240 (pCi/mL)	2.80E-04	9.00E-05	--	--
Sr-90 (pCi/mL)	8.40E-04	7.20E-04	0.008	1.00E+00
Th-228 (pCi/mL)	3.50E-04	8.00E-05	--	4.00E-01
Th-230 (pCi/mL)	6.40E-04	1.30E-04	--	3.00E-01
Th-232 (pCi/mL)	6.00E-05	3.00E-05	--	5.00E-02
U-234 (pCi/mL)	1.01E-03	1.70E-04	--	5.00E-01
U-238 (pCi/mL)	5.20E-04	1.10E-04	--	6.00E-01

Table 16V. Volatile organics data for RWMC-MP-2/1-G on 05/06/95.

Parameter	Results	Units	Qualifier Flag
Methyl Acetate (TIC)	20.00	µg/L	NJ
Methylene Chloride	5.00	µg/L	B

N = Indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

J = indicates an estimated value. This flag is used under the following circumstances: (1) when estimating a concentration for TICs where 1:1 response is assumed; or (2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 µg/L and a concentration of 3 µg/L is calculated, it is reported at 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as a positively identified TCL compound.

4.10 RWMC-MP-2/1 (COMPOSITE)

Samples were collected on May 6, 1995 from storm water runoff and sent to the laboratory on May 10, 1995. The rainfall recorded from this event was 0.56 inches. The duration of the event was 19 hours and 20 minutes. Chemical concentrations did not exceed any referenced guidelines for any parameters (Table 17). No field notes were available for this sample. Information was obtained from the chain of custody. Field measurements were not recorded. Permit requires pH be measured. VOC samples were obtained, although it can not be verified that the samples were representative of the storm. Elevated magnesium levels were identified at all RWMC locations. This was a result of magnesium chloride ($MgCl_2$) salts applied as dust suppressant to roads. This practice was discontinued in 1993.

Table 17. Comparison of RWMC-MP-2/1-C Data on 05/06/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Cyanide ($\mu g/L$)	ND	NA	200	1200
Chemical Oxygen Demand (mg/L)	23.8	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.26	NA	NA	NA
TDS (mg/L)	346	NA	500	NA
Nitrogen, Total Kjeldahl (mg/L)	1.2	NA	NA	NA
TOC (mg/L)	9.5	NA	NA	NA
Silver ($\mu g/L$)	ND	5000	100	450
Arsenic ($\mu g/L$)	ND	5000	50	70
Barium ($\mu g/L$)	298	100,000	2000	NA
Cadmium ($\mu g/L$)	ND	1000	5	690
Chromium ($\mu g/L$)	19.7	5000	100	2770
Copper ($\mu g/L$)	28.7	NA	1300	3380
Mercury ($\mu g/L$)	ND	200	2	250
Magnesium ($\mu g/L$)	38000	NA	NA	NA
Magnesium, Soluble ($\mu g/L$)	31200	NA	NA	NA
Nickel ($\mu g/L$)	ND	NA	100	3980
Lead ($\mu g/L$)	13.2	5000	15	620
Antimony ($\mu g/L$)	ND	NA	6	NA
Selenium ($\mu g/L$)	ND	1000	50	50
Thallium ($\mu g/L$)	ND	NA	2	NA
Vanadium ($\mu g/L$)	ND	NA	NA	NA
Zinc ($\mu g/L$)	139	NA	5000	2610

Table 17R. RWMC-MP-2/1-C radiological data from 05/06/95.

Parameters	Sample results	Uncertainty	SDWA	DCG
Am-241 (pCi/mL)	9.10E-03	1.10E-03	--	3.00E-02
K-40 (pCi/mL)	1.75E-01	7.74E-02	--	7.00E+00
Th-228 (pCi/mL)	1.00E-04	3.00E-05	--	4.00E-01
Th-230 (pCi/mL)	2.40E-04	6.00E-05	--	3.00E-01
Th-232 (pCi/mL)	6.00E-05	2.00E-05	--	5.00E-02
U-234 (pCi/mL)	1.00E-03	1.50E-04	--	5.00E-01
U-235 (pCi/mL)	3.00E-05	2.00E-05	--	6.00E-01
U-238 (pCi/mL)	5.20E-04	9.00E-05	--	6.00E-01

Table 17V. Volatile organics data for RWMC-MP-2/1-C on 05/06/95.

Parameter	Results	Units	Qualifier Flag
Methylene Chloride	5.00	µg/L	B

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as a positively identified TCL compound.

Figure 3. RWMC points for the Storm Water Monitoring Program.

5. TEST AREA NORTH (TAN) TECHNICAL SUPPORT FACILITY (TSF)

5.1 TSF-MP-2/2 (GRAB)

Samples were collected on January 11, 1995 from snow melt at the TAN drainage disposal 02 in basin #782 off of Snake Avenue. Samples were collected using a beaker to collect the flow as it discharged from the inlet pipe into the pond. The liquid was cloudy. The weather was sunny and windy with a temperature of approximately 35°F. Flow was estimated to be 10 lpm from the inlet pipe into the pond. Chemical concentrations did not exceed the recommended guideline concentrations for any of the parameters (Table 18).

Table 18. Comparison of TSF-MP-2/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	109	NA	NA	NA
pH	6.4	2.5-12	6.5-8.5	5.5-9.0
Chemical Oxygen Demand (mg/L)	ND	NA	NA	NA
Surfactants (mg/L)	ND	NA	0.5	NA
TOC (mg/L)	4.8	NA	NA	NA
TSS (mg/L)	13.0	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	ND	5000	100	2270
Copper (µg/L)	ND	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	6.0	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	64.7	NA	5000	2610

Table 18R. TSF-MP-2/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	5.92E-03	9.60E-04	0.050	--

5.2 TSF-MP-1/2 (GRAB)

Samples were collected on January 11, 1995 from snow melt at the TAN drainage disposal 01 in basin #1720 at Nile and Lincoln. The flow was recorded to be 0.625 cfs. Samples were collected at the mouth of the pond. Lead was reported to be 17.3 ppb ($\mu\text{g/L}$) (Table 19). The SDWA standard action level for lead is 15 ppb.

Table 19. Comparison of TSF-MP-1/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	127	NA	NA	NA
pH	7.6	2.5-12	6.5-8.5	5.5-9.0
Alkalinity (mg/L)	64.0	NA	NA	NA
TOC (mg/L)	11.2	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	ND	5000	50	70
Barium ($\mu\text{g/L}$)	ND	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	16.8	5000	100	2770
Copper ($\mu\text{g/L}$)	35.2	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Nickel ($\mu\text{g/L}$)	ND	NA	100	3980
Lead ($\mu\text{g/L}$)	17.3	5000	15	620
Selenium ($\mu\text{g/L}$)	ND	1000	50	50
Zinc ($\mu\text{g/L}$)	180	NA	5000	2610

Table 19R. TSF-MP-1/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	2.42E-03	9.00E-04	0.015	--
Gross Beta (pCi/mL)	8.10E-03	1.20E-03	0.050	--

5.3 TSF-MP-1/2 (GRAB)

Samples were collected on March 11, 1995 from storm water runoff. A grab sample was collected manually from the culvert approximately 60 to 70 feet upstream from Basin #1720 at Nile and Lincoln. TAN drainage disposal 01 is located there. Flow was 60 lpm. The rainfall for this event was 0.09 inches. The duration of the event was 21 hours and 50 minutes. Chemical concentrations did not exceed any of the referenced guidelines for any parameters (Table 20).

Table 20. Comparison of TSF-MP-1/2-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	309	NA	NA	NA
pH	7.9	2.5-12	6.5-8.5	5.5-9.0
Alkalinity (mg/L)	56.0	NA	NA	NA
TOC (mg/L)	5.1	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	15.5	5000	100	2770
Copper (µg/L)	29.3	NA	1300	3880
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	14.3	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	113	NA	5000	2610

Table 20R. TSF-MP-1/2-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	3.73E-03	7.4E-04	0.050	--
K-40 (pCi/mL)	6.87E-02	7.72E-02	--	7.00E+00

5.4 TSF-MP-2/2 (GRAB)

Samples were collected on March 21, 1995 from storm water runoff at the TAN drainage disposal 02 in basin #782 off of Snake Avenue. Storm water samples were taken from water flowing into the basin and analyzed by Weston laboratory for storm water analytes. Additional samples were taken from the basin and analyzed by AccuLabs for drinking water parameters. The rainfall for the event was 0.10 inches and the duration of the event was 45 minutes. Flow was recorded at 4.71 lpm. The Color indicator index was reported at 5.0 while the SDWA standard is 3.0 (Table 21).

Table 21. Comparison of TSF-MP-2/2-G Data on 03/21/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µmhos/cm)	370	NA	NA	NA
Field Conductivity (µS)	271	NA	NA	NA
Alkalinity (mg/L)	140	NA	NA	NA
Chloride (mg/L)	16.0	NA	250	NA
Cyanide (µg/L)	ND	NA	200	1200
Color (C.U.)	5.0	NA	3	NA
Fluoride (mg/L)	ND	NA	4	NA
Hardness (as CaCO ₃) (mg/L)	170	NA	NA	NA
Langelier Index	0.49	NA	NA	NA
Surfactants (mg/L)	ND	NA	0.5	NA
Nitrite, as Nitrogen (mg/L)	ND	NA	NA	NA
Nitrate, as Nitrogen (mg-N/L)	1.1	NA	10	NA
Odor (T.O.N.)	1.0*	NA	15	NA
Salinity (g/kg)	ND	NA	NA	NA
Silica (mg/L)	8.8	NA	NA	NA
Sulfate (mg/L)	33.0	NA	250	NA
TDS (mg/L)	220*	NA	500	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Turbidity (NTU)	1.2	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Aluminum (µg/L)	ND	NA	NA	NA
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	80.0	100,000	2000	NA
Beryllium (µg/L)	ND	NA	4	NA
Calcium (µg/L)	49000	NA	NA	NA
Cadmium (µg/L)	0.80	1000	5	690
Chromium (µg/L)	5.0	5000	100	2770
Copper (µg/L)	ND	NA	1300	3380
Iron (µg/L)	60.0	NA	300	NA

Table 21. (continued).

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Mercury (µg/L)	ND	200	2	250
Potassium (µg/L)	2500	NA	NA	NA
Magnesium (µg/L)	12000	NA	NA	NA
Manganese (µg/L)	ND	NA	50	NA
Sodium (µg/L)	7300	NA	20000	NA
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	ND	5000	15	620
Antimony (µg/L)	ND	NA	6	NA
Selenium (µg/L)	ND	1000	50	50
Thallium (µg/L)	ND	NA	2	NA
Zinc (µg/L)	20.0	NA	5000	2610

* - This result was assigned a data useability level of 'failed' as a result of the validation assessment.

Analyses performed by AccuLabs Research, Inc.

Table 21A. Comparison of TSF-MP-2/2-G Data on 03/21/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Field Conductivity (µS)	271	NA	NA	NA
pH	8.4	2.5-12	6.5-8.5	5.5-9.0
Chemical Oxygen Demand (mg/L)	ND	NA	NA	NA
Surfactants (mg/L)	ND	NA	0.5	NA
TOC (mg/L)	1.4	NA	NA	NA
TSS (mg/L)	ND	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	21.0	5000	100	2770
Copper (µg/L)	30.5	NA	1300	3880
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	19.0	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	156	NA	5000	2610

Analyses performed by Weston Laboratories.

Table 21R. TSF-MP-2/2-G radiological data from 03/21/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Cs-134+137 (pCi/mL)	4.00E-04	8.00E-04	--	--
Gross Alpha (pCi/mL)	2.00E-03	1.00E-03	0.015	--
Gross Beta (pCi/mL)	2.00E-03	2.00E-03	0.050	--
H-3 (pCi/mL)	3.70E-01	2.20E-01	20	2.00E+03
K-40 (pCi/mL)	-1.60E-03	6.30E-02	--	7.00E+00
Ra-226 (pCi/mL)	2.00E-04	4.00E-04	--	1.00E-01
Ra-228 (pCi/mL)	1.00E-04	4.00E-04	--	1.00E-01
Strontium-89/90 (pCi/mL)	1.00E-04	5.00E-04	0.008	--
U-233+234 (pCi/mL)	1.90E-03	5.00E-04	--	--
U-235 (pCi/mL)	1.00E-04	1.00E-04	--	6.00E-01
U-238 (pCi/mL)	8.00E-04	3.00E-04	--	6.00E-01

Analyses performed by AccuLabs Research, Inc.

Table 21RA. TSF-MP-2/2-G radiological data from 03/21/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--
K-40 (pCi/mL)	3.43E-02	7.61E-2	--	7.00E+00

Analyses performed by Analytical Technology, Inc.

Table 21SV. Semivolatile organics data for TSF-MP-2/2-G on 03/21/95.

Parameter	Results	Units	SDWA	Qualifier flag
Di(2-ethylhexyl)phthalate	1.50	µg/L	6	None

5.5 TSF-MP-1/2 (GRAB)

Samples were collected on March 21, 1995 from storm water runoff at the TAN drainage disposal 01 in basin #1720 at Nile and Lincoln. The field team took two sets of samples which were sent to two laboratories. The rainfall recorded for this event was 0.10 inches and the duration of this event was 45 minutes. Lead was reported as 19.0 ppb and the action level per the SDWA is 15.0 ppb (Table 22).

Table 22. Comparison of TSF-MP-1/2-G Data on 03/21/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ mhos/cm)	380	NA	NA	NA
Conductivity (μ S)	151	NA	NA	NA
Alkalinity (mg/L)	95.0	NA	NA	NA
Chloride (mg/L)	27.0	NA	250	NA
Cyanide (μ g/L)	ND	NA	200	1200
Color (C.U.)	25.0	NA	3	NA
Fluoride (mg/L)	ND	NA	4	NA
Hardness (as CaCO_3) (mg/L)	110	NA	NA	NA
Langelier Index	-0.34	NA	NA	NA
Surfactants (mg/L)	ND	NA	0.5	NA
Nitrogen, Nitrate-Nitrite (mg-N/L)	0.12	NA	10	NA
Nitrite, as Nitrogen (mg/L)	ND	NA	NA	NA
Nitrate, as Nitrogen (mg-N/L)	0.12	NA	10	NA
Odor (T.O.N.)	3.0*	NA	15	NA
Salinity (g/kg)	ND	NA	NA	NA
Silica (mg/L)	20.0	NA	NA	NA
TDS (mg/L)	220*	NA	500	NA
Total Oil & Grease (mg/L)	1.0	NA	NA	250
Turbidity (NTU)	200	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Aluminum (μ g/L)	8900	NA	NA	NA
Arsenic (μ g/L)	12.0	5000	50	70
Barium (μ g/L)	180	100,000	2000	NA
Beryllium (μ g/L)	ND	NA	4	NA
Calcium (μ g/L)	33000	NA	NA	NA
Cadmium (μ g/L)	0.70	1000	5	690
Chromium (μ g/L)	17.0	5000	100	2770
Copper (μ g/L)	27.0	NA	1300	3380
Iron (μ g/L)	9000	NA	300	NA
Mercury (μ g/L)	0.10	200	2	250
Potassium (μ g/L)	5600	NA	NA	NA
Magnesium (μ g/L)	6300	NA	NA	NA

Table 22. (continued).

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Manganese (µg/L)	130	NA	50	NA
Sodium (µg/L)	30000	NA	20000	NA
Nickel (µg/L)	22.0	NA	100	3980
Lead (µg/L)	13.0	5000	15	620
Antimony (µg/L)	ND	NA	6	NA
Selenium (µg/L)	ND	1000	50	50
Thallium (µg/L)	ND	NA	2	NA
Zinc (µg/L)	88.0	NA	5000	2610

* - This result was assigned a data useability level of 'failed' as a result of the validation assessment.

Analyses performed by AccuLabs Research, Inc.

Table 22A. Comparison of TSF-MP-1/2-G Data on 03/21/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	151	NA	NA	NA
pH	7.6	2.5-12	6.5-8.5	5.5-9.0
Alkalinity (mg/L)	117	NA	NA	NA
TOC (mg/L)	7.4	NA	NA	NA
Total Oil & Grease (mg/L)	5.0	NA	NA	250
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	5.5	1000	5	690
Chromium (µg/L)	ND	5000	100	2770
Copper (µg/L)	ND	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	ND	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	82.4	NA	5000	2610

Analyses performed by Weston Laboratories.

Table 22R. TSF-MP-1/2-G radiological data from 03/21/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Cs-134 (pCi/mL)	-5.20E-03	8.80E-03	--	2.00E+00
Cs-137 (pCi/mL)	-1.20E-03	1.50E-02	--	3.00E+00
Gross Alpha (pCi/mL)	7.00E-03	3.00E-03	0.015	--
Gross Beta (pCi/mL)	1.20E-02	3.00E-03	0.050	--
H-3 (pCi/mL)	2.00E-01	2.10E-01	20	2.00E+03
K-40 (pCi/mL)	3.80E-02	7.30E-02	--	7.00E+00
Ra-226 (pCi/mL)	3.00E-04	5.00E-04	--	1.00E-01
Ra-228 (pCi/mL)	8.00E-04	5.00E-04	--	1.00E-01
Strontium-89/90 (pCi/mL)	-3.00E-03	6.00E-04	0.008	--
U-233+234 (pCi/mL)	5.00E-04	2.00E-04	--	--
U-235 (pCi/mL)	1.00E-04	1.00E-04	--	6.00E-01
U-239 (pCi/mL)	4.00E-04	2.00E-04	--	6.00E-01

Analyses performed by AccuLabs Research, Inc.

Table 22RA. TSF-MP-1/2-G radiological data from 03/21/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--
Pb-214 (pCi/mL)	1.03E-03	4.03E-04	--	2.00E+02
Ra-226 (pCi/mL)	1.03E-03	4.03E-04	--	1.00E-01

Analyses performed by Analytical Technology, Inc.

Figure 4. TSF points and wells for the Storm Water Monitoring Program.

6. POWER BURST FACILITY (PBF)

6.1 PBF-MP-1/2 (GRAB)

Samples were collected on February 03, 1995 from snow melt at the outlet of the culvert on Navajo road, south of PBF-614. The samples were collected with a bucket. The flow was recorded to be 0.062 cfs. Chemical concentrations did not exceed the referenced guidelines for any parameters (Table 23). The weather was sunny and warm with temperatures approximately 40pF.

Table 23. Comparison of PBF-MP-1/2-G Data on 02/03/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	81.0	NA	NA	NA
pH	6.9	2.5-12	6.5-8.5	5.5-9.0
TOC (mg/L)	13.6	NA	NA	NA
TSS (mg/L)	43.0	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	ND	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	45.6	NA	5000	2610

Table 23R. PBF-MP-1/2-G radiological data from 02/03/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	7.20E-03	1.30E-03	0.050	--

6.2 PBF-MP-3/2 (GRAB)

Samples were collected on June 7, 1995 from storm water runoff located near the SPERT Disposal Well number 2. Water was up to and flowing into the well. Samples were collected at the area near the opening of the well. Flow into the well casing at the time of sampling was approximately 1.7 cfm. The rainfall recorded for this event was 1.83 inches and the duration of the event was 29 hours and 20 minutes. Results are reported in Table 24. Lead was recorded at 17.0 ppb and the SDWA standard action level is 15.0 ppb. Manganese was recorded at 950 ppb and the SDWA guideline is 50 ppb. Iron was at 66,000 ppb and 300 ppb is the referenced concentration per the SDWA. Chromium was reported to be 110 ppb and the SDWA referenced concentrations is 100 ppb. Both Beryllium and Arsenic were reported at the referenced SDWA guideline of 4.0 ppb (Be) and 50 ppb (As).

Table 24. Comparison of PBF-MP-3/2-G Data on 06/07/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	140	NA	NA	NA
Field Conductivity (μ S)	70.0	NA	NA	NA
pH	7.8	2.5-12	6.5-8.5	5.5-9.0
Field pH	8.5	2.5-12	6.5-8.5	5.5-9.0
Alkalinity (mg/L)	85.0	NA	NA	NA
Chloride (mg/L)	ND	NA	250	NA
Cyanide (μ g/L)	ND	NA	200	1200
Carbonate (mg/L)	ND	NA	NA	NA
Color (C.U.)	500	NA	3	NA
Fluoride (mg/L)	ND	NA	4	NA
Bicarbonate (mg/L)	100.0	NA	NA	NA
Hardness (as CaCO_3) (mg/L)	230	NA	NA	NA
Langelier Index (mg/L)	-0.17	NA	NA	NA
Surfactants (mg/L)	ND	NA	0.5	NA
Nitrite, as Nitrogen (mg/L)	ND	NA	NA	NA
Nitrate, as Nitrogen (mg-N/L)	0.10	NA	10	NA
Odor (T.O.N.)	3.0	NA	15	NA
Hydroxide (mg/L)	ND	NA	NA	NA
Salinity (g/kg)	ND	NA	NA	NA
Silica (mg/L)	71.0	NA	NA	NA
TDS (mg/L)	810*	NA	500	NA
Total Oil & Grease (mg/L)	2.0	NA	NA	250
Turbidity (NTU)	1800	NA	NA	NA

Table 24. (Continued).

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Silver (µg/L)	ND	5000	100	450
Aluminum (µg/L)	52000	NA	NA	NA
Arsenic (µg/L)	50.0	5000	50	70
Barium (µg/L)	990	100,000	2000	NA
Beryllium (µg/L)	4.0	NA	4	NA
Calcium (µg/L)	48000	NA	NA	NA
Cadmium (µg/L)	2.1	1000	5	690
Chromium (µg/L)	110	5000	100	2770
Copper (µg/L)	96.0	NA	1300	3380
Iron (µg/L)	66000	NA	300	NA
Mercury (µg/L)	0.20	200	2	250
Potassium (µg/L)	17000	NA	NA	NA
Magnesium (µg/L)	27000	NA	NA	NA
Manganese (µg/L)	950	NA	50	NA
Sodium (µg/L)	4500	NA	20000	NA
Nickel (µg/L)	120	NA	100	3980
Lead (µg/L)	17.0	5000	15	620
Antimony (µg/L)	ND	NA	6	NA
Selenium (µg/L)	ND	1000	50	50
Thallium (µg/L)	ND	NA	2	NA
Zinc (µg/L)	490	NA	5000	2610

Analyses performed by AccuLabs Research, Inc.

* - This result was assigned a data useability level of 'failed' as a result of the validation assessment.

Table 24R. PBF-MP-3/2-G radiological data from 06/07/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Cs-134+137 (pCi/mL)	1.00E-03	1.10E-03	--	--
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	5.00E-02	1.30E-02	0.015	--
Gross Beta (pCi/mL)	7.70E-02	1.30E-02	0.050	--
H-3 (pCi/mL)	1.10E-01	2.00E-01	20	2.00E+03
Ra-226 (pCi/mL)	2.60E-03	0.90E-03	--	1.00E-01
Ra-228 (pCi/mL)	4.30E-03	0.80E-03	--	1.00E-01
Strontium-89/90 (pCi/mL)	1.10E-03	0.70E-03	0.008	--
U-233+234 (pCi/mL)	1.50E-03	0.30E-03	--	--
U-235 (pCi/mL)	4.00E-04	1.00E-04	--	6.00E-01
U-238 (pCi/mL)	1.80E-03	0.30E-03	--	6.00E-01

Figure 5. WERF points and wells for the Storm Water Monitoring Program.

7. IDAHO CHEMICAL PROCESSING PLANT (ICPP)

7.1 ICPP-MP-1/1 (GRAB)

Samples were collected on October 4, 1994 from storm water runoff at the East Perimeter Road near the culvert south of the Sewage Treatment Plant (STP). The average flow for this event was 388.07 lpm. The total cumulative volume discharged was 168,030 Liters. The total rainfall for this event was 0.45 inches and the duration of the event was 12 hours and 40 minutes. Volatile organic analyses (Table B-1) were performed and no detections were reported. Chemical concentrations did not exceed the referenced standards for any parameters (Table 25). The grab sample was not taken within the first thirty minutes of the storm.

Table 25. Comparison of ICPP-MP-1/1-G Data on 10/04/94 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	79.0	NA	NA	NA
pH	8.03	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	5.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	38.6	NA	NA	NA
Nitrate, as Nitrogen (mg-N/L)	1.1	NA	10	NA
Total Phosphorus (mg/L)	0.33	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.88	NA	NA	NA
Total Oil & Grease (mg/L)	210	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	152	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	7.1	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	681	NA	5000	2610

Table 25R. ICPP-MP-1/1-G radiological data from 10/04/94.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	5.00E-02	3.00E-02	0.015	--
Gross Beta (pCi/mL)	7.00E-03	1.80E-02	0.050	--

7.2 ICPP-MP-1/1 (COMPOSITE)

Samples were collected on October 4, 1994 from storm water runoff at the East Perimeter Road near the culvert south of the STP. A grab sample was taken manually because of equipment malfunction. The grab sample was taken from water in the collection basin. The sample will be used to represent a composite of the event. The average flow for this event was the same as the previous sample. Volatile organic analyses (Table B-1) were performed and no detections were reported. Chemical concentrations did not exceed the reference standards for any parameters (Table 26).

Table 26. Comparison of ICPP-MP-1/1-C Data on 10/04/94 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	74.0	NA	NA	NA
pH	7.95	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	6.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	40.2	NA	NA	NA
Nitrate, as Nitrogen (mg-N/L)	0.86	NA	10	NA
Total Phosphorus (mg/L)	0.20	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.78	NA	NA	NA
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	88.0	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	6.6	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	482	NA	5000	2610

Table 26R. ICPP-MP-1/1-C radiological data from 10/04/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	3.00E-02	2.00E-02	0.015	--
Gross Beta (pCi/mL)	2.00E-02	2.00E-02	0.050	--

7.3 ICPP-MP-2/1 (GRAB)

Samples were collected on January 11, 1995 from snow melt at the southwest side of the coal pile as liquid enters the ditch. The flow was estimated to be 1.25 cfm. It was noted that the runoff was black colored due to the coal pile. Chemical concentrations did not exceed the reference standards for any parameters (Table 27). Weather was sunny and windy with an approximate temperature of 40°F. The coal pile has numeric limits for TSS (50 mg/L) and pH (5.4-9.0). The concentration for TSS was 245 mg/L. However, this does not exceed permit limits because the water was retained within the basin.

Table 27. Comparison of ICPP-MP-2/1-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	83.0	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Nitric Acid (mg/L)	2.4	NA	NA	NA
Salinity (g/kg)	ND	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	1.8	NA	NA	NA
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	245	NA	NA	NA
Silver (μg/L)	ND	5000	100	450
Arsenic (μg/L)	ND	5000	50	70
Barium (μg/L)	ND	100,000	2000	NA
Cadmium (μg/L)	ND	1000	5	690
Chromium (μg/L)	ND	5000	100	2770
Copper (μg/L)	ND	NA	1300	3380
Mercury (μg/L)	ND	200	2	250
Nickel (μg/L)	ND	NA	100	3980
Lead (μg/L)	9.2	5000	15	620
Selenium (μg/L)	ND	1000	50	50
Zinc (μg/L)	118	NA	5000	2610

Table 27R. ICPP-MP-2/1-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	6.37E-03	9.70E-04	0.050	--

7.4 ICPP-MP-1/1 (GRAB)

Samples were collected on February 3, 1995 from snow melt as it exited the culvert. The flow was recorded at 0.09 cfs. Volatile organic analysis was run by Method 624 and there was no detects for the parameters. Chemical concentrations did not exceed the reference guidelines for any parameters (Table 28). The numeric limits for TSS is 50 mg/L. However, this does not exceed permit limits because the water was retained within the basin. The weather was sunny, clear, and approximately 45°F. The chain of custody sample identification number was ICPP020395-2/1, so the results were reported as ICPP-MP-2/1 but the location sampled was actually ICPP-MP-1/1 according to the field logbook.

Table 28. Comparison of ICPP-MP-2/1-G Data on 02/03/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	148	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	3.0*	NA	NA	NA
Chemical Oxygen Demand (mg/L)	9.2	NA	NA	NA
Nitric Acid (mg/L)	5.6*	NA	NA	NA
Total Phosphorus (mg/L)	0.23	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	6.8	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	52.0	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	ND	5000	100	2770
Copper (µg/L)	ND	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	4.1	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	96.2	NA	5000	2610

* - The result was assigned a data useability level of 'failed' as a result of the validation assessment.

Table 28R. ICPP-MP-2/1-G radiological data from 02/03/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	1.68E-02	3.00E-03	0.050	--

7.6 ICPP-MP-1/1 (GRAB)

Samples were collected on March 11, 1995 from storm water runoff at the culvert on the East Perimeter Road directly south of the STP. Discharge was minimal and only enough flow was allowed for a grab sample during the first thirty minutes. The flow was recorded at 8.22 lpm. The total volume for the event was 7,070 Liters. The rainfall recorded for this event was 0.61 inches. The duration of the event was 21 hours and 35 minutes. Lead was reported at 26.0 ppb and the SDWA standard action level is 15 ppb (Table 30). Volatile organic analyses (Table B-1) were performed and no detects were reported.

Table 30. Comparison of ICPP-MP-1/1-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	147	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	5.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	50.5	NA	NA	NA
Nitric Acid (mg/L)	2.8*	NA	NA	NA
Total Phosphorus (mg/L)	1.3	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	2.6	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	710	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	446	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	39.4	5000	100	2770
Copper (μ g/L)	46.8	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	26.0	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	291	NA	5000	2610

* - This result was assigned a data useability level of 'failed' as a result of the validation assessment.

Table 30R. ICPP-MP-1/1-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	2.80E-02	1.10E-02	0.015	--
Gross Beta (pCi/mL)	9.70E-02	1.30E-02	0.050	--
K-40 (pCi/mL)	1.08E-01	7.86E-02	--	7.00E+00

7.7 ICPP-MP-1/1 (GRAB)

Samples were collected on May 3, 1995 from storm water runoff at the East Perimeter Road culvert located south of the STP. The samples were taken from the compositor and represent the first thirty minutes of the storm. The rainfall recorded for this event was 0.15 inches. The total volume was 30,780 Liters for the event. The duration of the event was 1 hour and 55 minutes. Lead was reported to be a concentration of 79.5 ppb and SDWA standard action level is 15.0 ppb (Table 31).

Table 31. Comparison of ICPP-MP-1/1-G Data on 05/03/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	47.0	NA	NA	NA
pH	7.9	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	ND	NA	NA	NA
Chemical Oxygen Demand (mg/L)	46.1	NA	NA	NA
Nitric Acid (mg/L)	2.3	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.13	NA	NA	NA
Total Phosphorus (mg/L)	0.56	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.85	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	348	NA	NA	NA
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	ND	5000	50	70
Barium ($\mu\text{g/L}$)	205	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	22.5	5000	100	2770
Copper ($\mu\text{g/L}$)	ND	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Nickel ($\mu\text{g/L}$)	ND	NA	100	3980
Lead ($\mu\text{g/L}$)	79.5	5000	15	620
Antimony ($\mu\text{g/L}$)	ND	NA	6	NA
Selenium ($\mu\text{g/L}$)	ND	1000	50	50
Thallium ($\mu\text{g/L}$)	ND	NA	2	NA
Vanadium ($\mu\text{g/L}$)	ND	NA	NA	NA
Zinc ($\mu\text{g/L}$)	471	NA	5000	2610

Table 31R. ICPP-MP-1/1-G radiological data from 05/03/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--
K-40 (pCi/mL)	9.82E-02	7.68E-02	--	7.00E+00

Table 31V. Volatile organics data for ICPP-MP-1/1-G on 05/03/95.

Parameter	Results	Units	Qualifier Flag	SDWA
Methylene Chloride	2.00	µg/L	JB	--

J = Indicates an estimated value. This flag is used under the following circumstances: (1) when estimating a concentration for TICs where a 1:1 response is assumed; or (2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 µg/L and a concentration of 3 µg/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as a positively identified compound.

7.8 ICPP-MP-1/1 (COMPOSITE)

Samples were collected on May 3, 1995 from storm water runoff at the culvert located on the East Perimeter Road south of the STP. Samples were taken from the compositor. The rainfall recorded for this event was 0.15 inches. The duration of the event was 1 hour and 55 minutes. Lead was reported to be 37.1 ppb and the SDWA standard action level is 15.0 ppb (Table 32).

Table 32. Comparison of ICPP-MP-1/1-C Data on 05/03/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	42.0	NA	NA	NA
pH	8.5	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	ND	NA	NA	NA
Chemical Oxygen Demand (mg/L)	13.8	NA	NA	NA
Nitric Acid (mg/L)	1.8	NA	NA	NA
Nitrogen, as Ammonia (mg/L)	0.13	NA	NA	NA
Total Phosphorus (mg/L)	0.57	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	1.0	NA	NA	NA
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	402	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	212	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	23.1	5000	100	2770
Copper (μ g/L)	29.1	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	37.1	5000	15	620
Antimony (μ g/L)	ND	NA	6	NA
Selenium (μ g/L)	ND	1000	50	50
Thallium (μ g/L)	ND	NA	2	NA
Vanadium (μ g/L)	ND	NA	NA	NA
Zinc (μ g/L)	510	NA	5000	2610

Table 32R. ICPP-MP-1/1-C radiological data from 05/03/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--

Table 32V. Volatile organics data for ICPP-MP-1/1-C on 05/03/95.

Parameter	Results	Units	Qualifier Flag
Methylene Chloride	5.00	µg/L	B

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as a positively identified compound.

Figure 6. ICPP points for the Storm Water Monitoring Program.

8. TEST AREA NORTH (TAN)

8.1 CTF-MP-1/2 (GRAB)

Samples were collected on January 11, 1995 from snow melt in the ditch south of TAN-631. The flow was running into the holding pond. Samples were collected at the culvert at Snake Avenue, approximately 40 feet from the mouth of the holding pond. Samples were collected using a dipper to collect the liquid into a bucket. Flow was estimated to be 6 lpm. Lead was reported to be 18.6 ppb ($\mu\text{g/L}$) (Table 33). The SDWA standard action level for lead is 15 ppb.

Table 33. Comparison of CTF-MP-1/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μS)	465	NA	NA	NA
pH	7.7	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	17.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	66.2	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	1.5	NA	NA	NA
TOC (mg/L)	20.6	NA	NA	NA
Total Oil & Grease (mg/L)	6.7	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	195	NA	NA	NA
Silver ($\mu\text{g/L}$)	ND	5000	100	450
Arsenic ($\mu\text{g/L}$)	ND	5000	50	70
Barium ($\mu\text{g/L}$)	229	100,000	2000	NA
Cadmium ($\mu\text{g/L}$)	ND	1000	5	690
Chromium ($\mu\text{g/L}$)	17.3	5000	100	2770
Copper ($\mu\text{g/L}$)	28.7	NA	1300	3380
Mercury ($\mu\text{g/L}$)	ND	200	2	250
Nickel ($\mu\text{g/L}$)	ND	NA	100	3980
Lead ($\mu\text{g/L}$)	18.6	5000	15	620
Selenium ($\mu\text{g/L}$)	ND	1000	50	50
Zinc ($\mu\text{g/L}$)	135	NA	5000	2610

Table 33R. CTF-MP-1/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	9.60E-03	2.40E-03	0.050	--
Zn-65 (pCi/mL)	6.46E-03	6.63E-03	--	9.00E+00

8.2 SMC-MP-1/2 (GRAB)

Samples were collected on January 11, 1995 from snow melt on the west side of Specific Manufacturing Capabilities (SMC) on Taylor Creek Road. Grab samples were taken from the inlet pipe and flow was estimated to be 48 lpm. Chemical concentrations did not exceed the reference guidance concentrations for any parameters (Table 34). The weather was sunny and windy with an approximate temperature of 37°F.

Table 34. Comparison of SMC-MP-1/2-G Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (µS)	1382	NA	NA	NA
pH	6.9	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	5.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	36.0	NA	NA	NA
Total Phosphorus (mg/L)	0.11	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.90	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	16.0	NA	NA	NA
Silver (µg/L)	ND	5000	100	450
Arsenic (µg/L)	ND	5000	50	70
Barium (µg/L)	ND	100,000	2000	NA
Cadmium (µg/L)	ND	1000	5	690
Chromium (µg/L)	ND	5000	100	2770
Copper (µg/L)	ND	NA	1300	3380
Mercury (µg/L)	ND	200	2	250
Nickel (µg/L)	ND	NA	100	3980
Lead (µg/L)	3.2	5000	15	620
Selenium (µg/L)	ND	1000	50	50
Zinc (µg/L)	186	NA	5000	2610

Table 34R. SMC-MP-1/2-G radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--

8.3 SMC-MP-1/2 (COMPOSITE)

Samples were collected on January 11, 1995 from snow melt on the west side of SMC on Taylor Creek Road. Flow was estimated to be 48 lpm from the inlet pipe. The sample was taken from the basin water. Chemical concentrations did not exceed any of the reference guidelines for any parameters (Table 35). A composite sample was taken from the ponded liquid in the basin

Table 35. Comparison of SMC-MP-1/2-C Data on 01/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	1146	NA	NA	NA
pH	7.1	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	27.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	41.8	NA	NA	NA
Total Phosphorus (mg/L)	0.10	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	1.0	NA	NA	NA
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	12.0	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	ND	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	139	NA	5000	2610

Table 35R. SMC-MP-1/2-C radiological data from 01/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	1.70E-02	4.40E-03	0.050	--

8.4 SMC-MP-1/2 (COMPOSITE)

Samples were collected on March 10, 1995 from storm water runoff on the west side of SMC on Taylor Creek Road. Water was running at a low volume from the discharge pipe and had started to pond in the retention basin. A grab sample was collected manually from the water in the basin, but will be referred to as a composite because it represents a composite of what was discharged into the basin. Flow was 13 lpm. Sample identifier for the sample recorded on the chain of custody was SMC031095-1/2G. The weather was cool, cloudy, and approximately 50°F (Table 36)

Table 36. Comparison of SMC-MP-1/2-G Data on 03/10/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	446	NA	NA	NA
pH	7.2	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	3.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	28.1	NA	NA	NA
Total Phosphorus (mg/L)	0.19	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.66	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	47.0	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	50	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	ND	5000	100	2770
Copper (μ g/L)	ND	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	5.0	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	85.9	NA	5000	2610

Table 36R. SMC-MP-1/2-G radiological data from 03/10/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	7.20E-03	1.30E-03	0.050	--
K-40 (pCi/mL)	7.81E-02	7.74E-02	--	7.00E+00

8.5 SMC-MP-1/2 (GRAB)

Samples were collected on March 11, 1995 from storm water runoff on the west side of SMC on Taylor Creek Road. These were grab samples collected by the compositor. Total Oil & Grease was collected directly into the sample container. Flow information could not be collected because the flow meter malfunctioned during the discharge. Lead was reported to be 38.5 ppb and SDWA standard action level is 15.0 ppb (Table 37). The remaining concentrations were below guidelines.

Table 37. Comparison of SMC-MP-1/2-G Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	133	NA	NA	NA
pH	7.5	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	7.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	75.5	NA	NA	NA
Total Phosphorus (mg/L)	1.2	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	1.9	NA	NA	NA
Total Oil & Grease (mg/L)	ND	NA	NA	250
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	744	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	12.0	5000	50	70
Barium (μ g/L)	239	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	37.9	5000	100	2770
Copper (μ g/L)	45.7	NA	1300	3380
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	40.0	NA	100	3980
Lead (μ g/L)	38.5	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	369	NA	5000	2610

Table 37R. SMC-MP-1/2-G radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gamma Spec (pCi/mL)	ND	--	4 (mrem/yr)	--
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--

8.6 SMC-MP-1/2 (COMPOSITE)

Samples were collected on March 11, 1995 from storm water runoff on the west side of SMC on Taylor Creek Road (Table 38). The rainfall recorded for this event was 0.09 inches. The duration of the event was 21 hours and 50 minutes. Lead was reported to be 22.5 ppb and SDWA standard action level is 15.0 ppb. The remaining chemical concentrations did not exceed any of the referenced guidelines for any parameters.

Table 38. Comparison of SMC-MP-1/2-C Data on 03/11/95 to Regulatory Guidelines.

Parameter	Sample Result	RCRA Guidelines	SDWA Guidelines	City Sewer Code
Conductivity (μ S)	80	NA	NA	NA
pH	7.0	2.5-12	6.5-8.5	5.5-9.0
Biological Oxygen Demand (5-day) (mg/L)	3.0	NA	NA	NA
Chemical Oxygen Demand (mg/L)	25.0	NA	NA	NA
Total Phosphorus (mg/L)	0.80	NA	NA	NA
Nitrogen, Total Kjeldahl (mg/L)	0.87	NA	NA	NA
Total Petroleum Hydrocarbons (mg/L)	ND	NA	NA	100
TSS (mg/L)	766	NA	NA	NA
Silver (μ g/L)	ND	5000	100	450
Arsenic (μ g/L)	ND	5000	5070	70
Barium (μ g/L)	ND	100,000	2000	NA
Cadmium (μ g/L)	ND	1000	5	690
Chromium (μ g/L)	26.3	5000	100	2770
Copper (μ g/L)	32.3	NA	1300	3880
Mercury (μ g/L)	ND	200	2	250
Nickel (μ g/L)	ND	NA	100	3980
Lead (μ g/L)	22.5	5000	15	620
Selenium (μ g/L)	ND	1000	50	50
Zinc (μ g/L)	139	NA	5000	2610

Table 38R. SMC-MP-1/2-C radiological data from 03/11/95.

Parameter	Sample result	Uncertainty	SDWA	DCG
Gross Alpha (pCi/mL)	ND	--	0.015	--
Gross Beta (pCi/mL)	ND	--	0.050	--
K-40 (pCi/mL)	9.79E-02	7.81E-02	--	7.00E+00

Figure 7. LOFT points for the Storm Water Monitoring Program.

9. TEST REACTOR AREA

Flow did not occur at the two monitoring points at TRA.

Figure 8. TRA points for the Storm Water Monitoring Program.

Appendix A

Field Logbook

10-4-94 (1330) (ICPP)

Storm occurred last night in a significant amount to cause a discharge.

Compositor at ICPP was checked to determine if a discharge had taken place had to check if a sample had been collected. The area where the flow actuator and the collection tubing are located was covered with mud and other debris. The weight on the end of the tubing was checked. I cleared the area and it was then noted that the flow actuator was broken. The rubber gasket that holds the float was broken. I returned back to the office and obtained a new gasket and returned to CPP and repaired the actuator.

I checked the compositor to determine if (per chance) the compositor had collected a sample. — NO sample collected. This would be due to both factors listed above.

The compositor information was down loaded to the data transfer unit (DTU). File name - CPP00494, CPP100494

BKX
10/11/94

Continued on Page

Read and Understood By

Signed

10/4/94
Date

Signed

Date

10-4-94 (1430) RWMC

Checked Compositor - Discharge had occurred on
9-30-94 at approximately 7:03 pm.

Pulled Samples on 10-4-94 and sent to Weston LAB
on 10-5-94.

Samples LABLED RWMC-2-G and RWMC-2-C
Sample DATE 9-30-94 AT 10:00 pm.

Cleaned Compositor and Bottles. ^{Jay 10/4} and ~~Restarted~~
Couldn't Restart Compositor. AREA WHERE TUBING AND ACTUATOR
IS LOCATED (AT DRAIN) IS UNDER WATER. System Not Draining. Will check
tomorrow.

JAY
10/4

Continued on Page

Read and Understood By

10/4/94

Date

10-4-94 (1630) SMC

Checked Compositor - Discharge had occurred on
9-30-94 at approximately 7:12 pm

Pulled samples on 10-4-94 and sent to Weston Lab
on 10-5-94

Sampled LABLED SMC-1-G and SMC-1-C
Sampled on 9-30-94 at 10:00 pm

Cleaned Compositor and Bottles and Restarted

JK
10/5/94

Continued on Page

Read and Understood By

Signed

10/4/94
Date

Signed

Date

10-4-94

ICRP-HP-1 (Composit)

Samples Pilled From Composit

ER. Johnson

ID	Time	Analysis	Container	Lot #	Preserv
1-C	2200	REPA Metals + (C, Ni, Zn)	1000 mL (P)	4104130	H ₂ O ₂
		TPH	1000 mL (G)	4195010	H ₂ SO ₄
		BOD	1000 mL (P)	4104130	4°C
		TSS	250 mL (P)	20501354	4°C
		COD	500 mL (P)	4159060	H ₂ SO ₄
		Nitrate (as Nitric Acid)	250 mL (P)	40301354	H ₂ SO ₄
		TKN	1000 mL (P)	4104130	H ₂ SO ₄
		Phosphorus (Total)	500 mL (P)	4159060	H ₂ SO ₄
		MEBK	(3) 40 mL Vials	B3273080	4°C
		TOLX	1000 mL (G)	4195010	H ₂ SO ₄
		Gravimetric / Loss of H ₂ O	500 mL (P)	41111	H ₂ O ₂

All samples were collected by composite. On 10-4-94.
 All put in containers on 10-5-94 From bottles 3 & 4.

0.45
 10/5/94
 10/9/94

Continued on Page _____

Read and Understood By
 Signed _____ Date 10/5/94
 Signed _____ Date 10-5-94

COMMENTS:

Samples were collected using a beaker to collect the flow as it discharged from the inlet pipe into the pond. Flow rate at sample collection time was at 10 liters per min. Flow (liquid) was cloudy. Samples were placed directly into the sample containers from the beaker.

Weather: Mostly Sunny - Windy - Approx. 35° F.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

1/11/95
DATE

READ AND UNDERSTOOD BY:

DATE

STORM WATER SAMPLE LOGBOOK

COC(s) $\frac{H}{T}$: _____

SAMPLERS: Jay, Steve

LOCATION: CTP-MP-1/2

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

CTF0111951/2	1035	BOD	1000 mL (P)	4101020	4°C
		COD	500 mL (P)	4159060	H ₂ SO ₄
		GAMMA - Gross A/B	4 Liter (P)	4039010	HNO ₃
		TKN	1000 mL (P)	4101020	H ₂ SO ₄
		TOL	1000 mL (L)	4346030	H ₂ SO ₄
		TCL	250 mL (L)	4316010	H ₂ SO ₄
		TPH	1000 mL (L)	4346030	H ₂ SO ₄
		RCRA METALS Zn (U)	1000 mL (P)	4101020	HNO ₃
V	V	TSS	250 mL (P)	4172100	4°C
<hr/>					
JAN 1/95					

INSTRUMENT ID: YSI model 350 ^{Cond.} = 1.435 STANDARDIZED BY: SG
S# 92E038946

QUALITY CONTROLLED MATERIALS: BUCKET # B22
BUCKET # BKT 03
DIGGER # 314

SAMPLE COLLECTION: SAMPLES COLLECTED PER

<u>FIELD DATA</u>	<u>TIME</u>	<u>TEMP.</u>	<u>pH</u>	<u>CONDUCT. (mS)</u>	<u>ADJUSTED</u>
GRAB 1	1035	20°C	7.73	0.472	0.465

~~GRAB 2 N/A~~
Jan 1/75

RECORDED BY:

1/11/95
DATE

READ AND UNDERSTOOD BY: [Signature]

1-11-95
DATE

Flow was noted to be running into Holding Pond. Samples were collected at the Culvert at Snake Avenue, approx. 40 feet from the mouth of the holding pond. Samples were collected using a dipper to collect the liquid into a bucket (with the exception of the TOL which was collected directly into the sample container) The material was transferred into the sample containers from the bucket using a beaker. Flow was 1.1 liters per min. at sample collection time.

Wednesday - Mostly Sunny - Windy - Approx. 35° F

4

STORM WATER SAMPLE LOGBOOK

COC(s) #: _____

COC(s) #: _____

COC(s) #: _____

COC(s) #: _____

COC(s) #: _____

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

TSFO11195-1/2	1105	Alkalinity	250 mL (P)	4172100	4°C
↓	↓	GAMMA - Gross AIB	41.100 (P)	4039010	HNO ₃
		TOL	1000 mL (G)	4346030	H ₂ SO ₄
		TOL	250 mL (G)	4316010	H ₂ SO ₄
		RCRA METALS + Ni, Zn ^{Cu}	1000 mL (P)	4101020	HNO ₃
<div> <div>July</div> <div>1995</div> </div>					

INSTRUMENT ID: VSI MODEL 3500 = Cond.
S# 92E038946 1.435 STANDARDIZED BY: SG

QUALITY CONTROLLED MATERIALS: Breaker # 315 B-41
Bucket # BKT07
Dipper # 315

SAMPLE COLLECTION: SAMPLES COLLECTED PER

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS) ADJUSTED
GRAB 1	11:05	-0.03°C	7.55	0.129 0.127
GRAB 2 - NA				

34413
GRAB 2 NA

RECORDED BY: [Signature] 11/11/95 DATE

READ AND UNDERSTOOD BY: [Signature] 1-11-95 DATE

COMMENTS:

Samples were collected at the mouth of the Pond. Flow rate was calculated using the float method. A float traveled 5 feet in 5.005 seconds. The depth of the water was 4 inches. The width of the flow was 15 inches. Flow = $\frac{3.75 \times 10^{-3} \times 37.5}{5.005} = 37.5$ CFM. Samples were collected using a dipper to collect sample into a bucket. The sample material was then poured into the sample containers. The TOL was collected directly into the container.

Weather - Sunny - Windy - Temp Approx. 35°F.

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)
1-11-95		1-11-95
RECORDED BY:	DATE	READ AND UNDERSTOOD BY:	DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 Snowmelt

COC(s) #: _____

DATE (MM/DD/YY): 01/11/95

SAMPLERS: Jan, Steve G

LOCATION: SMC-MP-1/2 (GEAB)

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

SMC011195-1/24 1/57	BOD	1000 mL (P)	4101020	4°C
	COD	500 mL (P)	4159060	H ₂ SO ₄
	GAMMA-GROSS A/B	4 1:100 (P)	4039010	HNO ₃
	TKN	1000 mL (P)	4101020	H ₂ SO ₄
	TDG	1000 mL (Lr)	4346030	H ₂ SO ₄
	TPH	1000 mL (Lr)	4346030	H ₂ SO ₄
	TOTAL P	500 mL (P)	4159060	H ₂ SO ₄
	ZINC METALS + ^{Cu} XI: ZN	1000 mL (P)	4101020	HNO ₃
	TSS	250 mL (P)	4172100	4°C

Jay

1/11/95

INSTRUMENT ID: YSI MODEL 3500 : Cond.
50926038940 : 1.435

STANDARDIZED BY: SG

QUALITY CONTROLLED MATERIALS: Bucket # - 325
Bucket # - 173

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT.(mS) ADJUSTED
GRAB 1	1157	2.3	6.88	1.404 1.382
GRAB 2				

RECORDED BY:

1/11/95
DATE 7

READ AND UNDERSTOOD BY: 1-11-95
DATE

DATE _____

COMMENTS:

GRAB Samples were collected from the inlet pipe using a 10 liter bucket. The sampled material was then poured into the sample containers. TDS was collected directly into the sample container. The flow rate at collection time was 48 ltrs per min.

Weather - Sunny, Windy - Temp. Approx 37°F

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)
1/11/95		1-11-95
RECORDED BY:	DATE	READ AND UNDERSTOOD BY:	DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 SNOWMELT
 DATE (MM/DD/YY): 01/11/95
 SAMPLERS: Jay, Steve G
 LOCATION: SMC-MP-1/2 (Composit)

COC(s) #: _____

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
SMC01195-1/2C	1212	BOD	1000 mL (P)	4101020	4°C
		COD	500 mL (P)	4159060	H ₂ SO ₄
		Gamma - Gross A/B	4 liter (P)	4039010	HNO ₃
		TKN	1000 ml (P)	4101020	H ₂ SO ₄
		TPH	1000 ml (G)	4346030	H ₂ SO ₄
		TOTAL P	500 ml (P)	4159060	H ₂ SO ₄
		2CRA Metals + Ni, ^{Cu} Zn	1000 ml (P)	4101020	HNO ₃
		TSS	250 mL (P)	4172100	4°C
			JAN		
			1/95		

INSTRUMENT ID: YSI Model 350B ^{Cond.} 1.435 STANDARDIZED BY: SG
ST 92E038946

QUALITY CONTROLLED MATERIALS: Beaker # B 50
Bucket # BKT 10
Dipper # LD 5

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS) ADJUSTED
GRAB 1	<u>1212</u>	<u>1.2</u>	<u>7.12</u>	<u>1.164</u> <u>1.146</u>
GRAB 2	_____	_____	_____	_____

RECORDED BY: [Signature] DATE: 1/11/95 READ AND UNDERSTOOD BY: [Signature] DATE: 1-11-95

COMMENTS:

A Composite Sample was collected from the liquid in the pond. Samples were collected using a dipper. Liquid was collected into a Bucket ~~and~~ ^{using} the dipper. The liquid was then poured into the Sample Containers. Flow for this location was not taken because the samples are from ponded water. Since this is the same location as the Grab, the flow for the Grab can be used. Flow = 48 liters per min. (See page 8)

WEATHER - Sunny, Windy - Temp Approx 37°F

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)
			NORTH
SEE DRAWING ON PAGE 8			
JAY 1/95
RECORDED BY:	1/11/95 DATE	READ AND UNDERSTOOD BY:	1-11-95 DATE

STORM WATER SAMPLE LOGBOOK

COC(s) $\frac{H}{H}$: _____

PROJECT:

DATE (MM/DD/YY):

SAMPLERS:

LOCATION:

$$COC(s) \stackrel{H}{\neq} :$$
[illegible]

INSTRUMENT ID:

QUALITY CONTROLLED MATERIALS:

SAMPLE COLLECTION: SAMPLES COLLECTED PER

FIELD DATA

GRAB 1

~~3 Aug 1995~~ ~~GRAB~~ NA

TIME

1307

TEMP.

~~0.000°C~~ 195
0.60°C

pH

7.48

CONDUCT. (mS) ADJUSTED

0.084 | 0.083

DATE _____

READ AND UNDERSTOOD BY:

DATE _____

COMMENTS:

Samples were collected from the Southwest Corner of the Coal Pile Area as it ran into the Containment ditch. Samples were collected using a Dipper and Bucket. ~~After~~ ^{Just} After the Bucket was filled, the water was poured into the Sample Containers. Water was Blackish in color. Flow was measured at 125 ~~gpm~~ ^{gpm} CFM, at the point of discharge using the Float Method.

Weather - Sunny, Windy - Temp Approx. 40° F

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

COMMENTS:

Not

Sampled

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

NORTH

No

Flow

Jay

1/95

RECORDED BY:

1/11/95
DATE

Karen M. Smith
READ AND UNDERSTOOD BY:

1/18/95
DATE

STORM WATER SAMPLE LOGBOOK

COC(S) #: _____

SAMPLERS: Jay, Steve G

LOCATION: RWMC-MP-1/2

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

[illegible]

INSTRUMENT ID: YSI Model 3500 ^{Cond.} = 1.435 STANDARDIZED BY: SLT

QUALITY CONTROLLED MATERIALS: Beaker # 1/2
Bucket # (No Number)
Dipper # 145

SAMPLE COLLECTION: SAMPLES COLLECTED PER

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS) ADJUSTED	
GRAB 1 JAN 11/15	1345	1.1 °C	7.01	0.637	0.627
GRAB 2 N/A					

RECORDED BY:

DATE _____

READ AND UNDERSTOOD BY:

DATE _____

RECORDED BY _____

DATE 1/11/55

~~READ AND UNDERSTOOD BY~~
~~Rachel M Smith~~

DATE 1-18-95

MAP OF SAMPLING LOCATION
(N/A if not applicable)

STORM WATER SAMPLE LOGBOOK

Weather - Sunny, Windy - Temp Approx 45°F

Samples were collected from the culvert as it discharged into the ditch. Collected Samples using a DIPPER AND BUCKET. AFTER WATER WAS PLACED INTO THE BUCKET, THE WATER WAS TRANSFERRED TO THE SAMPLE CONTAINERS. TOL WAS COLLECTED DIRECTLY INTO THE CONTAINER FLOW WAS AT 78 LITERS PER MIN. AT COLLECTION TIME.

COMMENTS:

STORM WATER SAMPLE LOGBOOK

COC(s) #: 2247
2251

[illegible]

QUALITY CONTROLLED MATERIALS: Beaker # N/A
Bucket # BKT-12
Dipper # 149

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1409	1.9 °C	7.54	0.182	0.179
GRAB 2	NA				

DATE _____

1-18-95

COMMENTS:

Samples were collected using a dipper and bucket. The bucket was filled using the dipper. Water was collected from the culvert. After the bucket was filled, the water was poured into the sample containers. TCG was collected directly into the container. The normal sample point was under snow, so we went up-stream to the next opening (approx 50 feet upstream). Flow was measured at 42 liters per min at sample collection time.

Weather - Sunny, Windy - Temp approx 45 °F.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

1/11/95
DATE

READ AND UNDERSTOOD BY:

1-18-95
DATE

STORM WATER SAMPLE LOGBOOK

COC(s) #: _____

PROJECT: 1995 SNOWMELT
DATE (MM/DD/YY): 01/12/95
SAMPLERS: Jay STEVE G.
LOCATION: CFA-MP-1/2

COC(s) #: _____

[illegible]

INSTRUMENT ID: VSI Model 3500 ^{Cond.} = 1.431 STANDARDIZED BY: SG
S# 92E038946

QUALITY CONTROLLED MATERIALS: Beaked# B48

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT.(mS) ADJUSTED
GRAB 1	1412	0.8 °C	7.54	0.438 / 0.432
GRAB 2 NA

1/12/95 Karen M. Smith 1-18-95
 (RECORDED BY: _____) DATE READ AND UNDERSTOOD BY: DATE

COMMENTS:

SAMPLES WERE COLLECTED USING A PERISTALTIC PUMP AS THE LIQUID WAS RELEASED FROM THE CULVERT. THE CULVERT IS LOCATED AT THE JUNCTION OF LANSING AND ANTENNA FARM ROAD. THE LIQUID WAS PUMPED DIRECTLY INTO THE SAMPLE CONTAINERS. OIL + GREASE WAS COLLECTED DIRECTLY INTO THE CONTAINER WITHOUT A TRANSFER DEVICE. FLOW WAS RECORDED AT 4 SEC./FOOT. THE DEPTH OF THE WATER WAS 3 INCHES & THE WIDTH WAS 18 INCHES = ~~56.3~~ ^{5.63} CFM

WEATHER - Cloudy Temp = Approx - 35°F

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

[Signature]
RECORDED BY:

1/12/95
DATE

Karen M. Smith
READ AND UNDERSTOOD BY:

1-18-95
DATE

COMMENTS:

Flow is entering into the RETENTION BASIN. SAMPLES were collected at the mouth of the Basin. A pump was used to ~~take~~^{use} collect samples. WATER WAS pumped directly into the Containers. Flow was Recorded, AT SAMPLE TIME, AT 1 FT/SEC. Flow WAS 3 inches wide and 1 inch deep. ≈ 1.25 CFM

WEATHER - Cloudy - Temp Approx. 35°F

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)			
<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: 0; right: 0; width: 10px; height: 10px; background: white;"></div> </div> <p style="margin: 0;">NORTH</p>			
<p>The map shows a street layout with Main St. running diagonally from the bottom left to the top right. Kearney Ave. intersects Main St. from the bottom. Lawrence Ave. intersects Main St. from the top right. Lincoln Blvd. runs vertically, intersecting Main St. and Kearney Ave. A dashed rectangle labeled 'BASIN' is located between Lincoln Blvd. and Main St. A 'SAMPLE Point' is marked with an asterisk at the mouth of the basin. Arrows indicate flow direction: 'Flow' enters the basin from the top, 'TO 1009 (PT)' points left from the top of the basin, 'TO 1009 CF' points left from the bottom of the basin, and 'MOUNTAIN AVE' points left from the bottom of the basin. A lightning bolt symbol points to 'LAWRENCE AVE.' on the right.</p>			
<p>RECORDED BY: <u>[Signature]</u></p>	<p>DATE: <u>1/12/95</u></p>	<p>READ AND UNDERSTOOD BY: <u>Karen M. Smith</u></p>	<p>DATE: <u>1-18-95</u></p>

STORM WATER SAMPLE LOGBOOK

SUBJECT: RWMC SDA Run-off
 DATE (MM/DD/YY): 2/2/95
 ANALYSTS: Kelly, Bryan, Curtis
 LOCATION: RWMC 2/2/95 2/1
2/2/95

COC(s) #: 2261

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
M020295-2/1	1645	Dissolved ^{ass} Total ^{ass} Mg	500ml HDPE	L2329020	HNO ₃
		COD	500ml HDPE	4255020	H ₂ SO ₄
		Nitrogen, Ammonia	500ml HDPE	L2329020	H ₂ SO ₄
		TKN	1000ml HDPE	C 4101020	H ₂ SO ₄
		Total Cyanide	1000ml HDPE	A 3200589	NaOH
		RCRA metals - Cu, Zn, Ni, mg	1000ml HDPE	D 792340 ^{KC} 4164030	HNO ₃
		Oil & Grease	1000 ml Amber glass	H 4319080	H ₂ SO ₄
		Gamma & Radiochemistry	4000ml Cubi	M 4039010	HNO ₃
		TDS	250ml HDPE	L/2 4172100	4°C
		VOA	2- 40ml Amber glass	3096023	4°C
		Organic carbon	250ml Amber glass	1177632	4°C

INSTRUMENT ID: NA

STANDARDIZED BY: NA

QUALITY CONTROLLED MATERIALS: Beaker # B-9

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS) ADJUSTED
AB 1		<u>Not Collected</u>		
AB 2				

RECORDED BY: Kelly C Wright DATE: 2/3/95
 READ AND UNDERSTOOD BY: [Signature] DATE: 2/3/95

COMMENTS:

Samples had parafilm placed around opening on bottles. Sometimes ^{new} between 7:45 am and 8:30, parafilm had been removed. Security was notified and their report will be written & documented.

No field data was gathered at the time. Instrumentation could not be located. One 40 ml vial bottle was broken and the 250 ml Amber glass bottle was broken when we returned back on 2/3/95.

SDA Run-off water sample collection. 2/2/95 1 of 2

SAMPLE LOGBOOK

IPLING LOCATION
(if applicable)

NORTH

Samplers collecting SDA run-off water. 2/2/95 2 of 2

Kelly C. Wright
RECORDED BY:

2/3/95
DATE

READ AND UNDERSTOOD BY:

2/3/95
DATE

STORM WATER SAMPLE LOGBOOK

COC(s) #: 2266

DATE (MM/DD/YY): 2-3-95

SAMPLERS: Jay Steve

LOCATION: RWMC-MP-2/1

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
RWMCD20375-2/1	1536	VOA	(3) 40 ML (G)	B4129010	4°C
		TOC	250 ML (G)	Z 4136010	H ₂ SO ₄
		TDS	250 ML (P)	LJZ 4172100	4°C
		PCRA METALS + Cu, Ni, Zn, Sh, TL, V, MG	1000 ML (P)	C 4101020	HNO ₃
		Nitrogen, Ammonia	500 ML (P)	L 4159060	H ₂ SO ₄
		COD	500 ML (P)	L 4159060	H ₂ SO ₄
		MG (Dissolved)	500 ML (P)	L 4159060	NONE
		TOTAL Cyanide	1000 ML (P)	C 4101020	NaOH
		TKN	1000 ML (P)	C 4101020	H ₂ SO ₄
		TOLG	1000 ML (G)	H 4319080	H ₂ SO ₄
		GAMMA Spec., Alpha Spec. H-3, SR-50, SR-85	4 liter (P)	M 4284020	HNO ₃
		JAY			
		2/95			

INSTRUMENT ID: YSI Model 350 STANDARDIZED BY: JAY
5# 92E038940
 QUALITY CONTROLLED MATERIALS: Funnel = #315 Dipper = #315
Beaker = ^{Jay #15} ~~SSB-01~~ 223
Bucket = SSD 01

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT.(mS)	ADJUSTED
GRAB 1	5:36	0.2 °C	7.38	0.127	0.127
GRAB 2 ⁴¹⁶					⁴¹⁶ 0.175
RECORDED BY:		2/3/95 DATE	Karen M. Smith READ AND UNDERSTOOD BY:		3/14/95 DATE

COMMENTS:

Water was flowing from the west in the ditch into the Culvert leading to the Sump. Water was collected at the point where the water enters the Culvert to the Sump. Flow was not determined due to the ice and snow covering the ditch and Culvert. A hole was broken into the ice to collect samples. Samples were collected using a dipper to collect the water into a bucket. VOA Samples were collected directly into the bottles as well as Oil & Grease. Weather Sunny Warm Temp = Approx 48°F.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 Snow Melt
 DATE (MM/DD/YY): 2-3-95
 SAMPLERS: Jay, Steve
 LOCATION: ICPP-MP-1/1

COC(s) #: _____

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
ICPP020395-2/1	1615	TOTAL Phosphorus	500 ML (P)	L2329020	H ₂ SO ₄
		Nitrite, AS Nitric Acid	250 ML (P)	L123156020	H ₂ SO ₄
		TOTAL Oil & Grease	100 ML (G)	H 4195010	H ₂ SO ₄
		COD	500 ML (P)	L2329020	H ₂ SO ₄
		TOTAL Petroleum Hydrocarbons	1000 ML (G)	H3333030	H ₂ SO ₄
		TKN	1000 ML (P)	C4152040	H ₂ SO ₄
		RCRA Metals + Cu, Ni, Zn	1000 ML (P)	C4152040	HNO ₃
		BOD	1000 ML (P)	C4164030	4°C
		GAMMA SPEC. / Gross A/B	4 liter (P)	C3349040	HNO ₃
		MEBK	(3) 40 ML (G)	B3278080	4°C
		TSS	250 ML (P)	L123156020	4°C
			JAY		
			2/95		

INSTRUMENT ID: YSI MODEL 350
S# 92E038946

STANDARDIZED BY: Jay

QUALITY CONTROLLED MATERIALS: Bucket # 55B 2 Beaker # B-35
Dipper # 149
Funnel # 313

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1615	0.20	7.53	0.148	0.147

GRAB 2 NA

RECORDED BY: [Signature]

2/3/95
DATE

27

READ AND UNDERSTOOD BY: [Signature]

2-3-95
DATE

COMMENTS:

Flow was Exiting From CPP. Samples were collected using a dipper into a Bucket. The liquid was collected as it exited the Culvert. VOA and Oil & Grease Samples were collected ^{on 2/15} ~~as~~ directly from the Stream. Flow was Recorded at Sample time at 1 Ft / Sec. The Stream was 1 inch deep and 13 inches wide = 5.40 CFM

Weather Sunny, Clear - Temp. Approx. 45°F

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

2/3/95
DATE

READ AND UNDERSTOOD BY:

2-3-95
DATE

STORM WATER SAMPLE LOGBOOK

COC(s) #: 2265

DATE (MM/DD/YY): 2-3-95

SAMPLERS: Jay, Steve

LOCATION: PBF- mp- 1/2

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

[illegible]

STANDARDIZED BY: SA

QUALITY CONTROLLED MATERIALS: Bucket # 271
Blaker # 345

SAMPLE COLLECTION: SAMPLES COLLECTED PER

FIELD DATA	TIME	TEMP.	pH	CONDUCT.(mS) ADJUSTED	
GRAB 1	1735	0.1	6.88	0.081	0.081
GRAB 2
RECORDED BY:		2/3/95 DATE	READ AND UNDERSTOOD BY:		2-

COMMENTS:

WATER WAS Flowing Through the Culvert UNDER the Road. Samples WERE Collected By dipping the Bucket Directly into the Stream then transferring the Sample into the Sample Containers.

Flow AT the time of Sampling = $6 \frac{\text{Sec.}}{\text{min}} \times 10 \text{ Feet}$, Stream WAS 1 inch deep and the channel WAS AT 15 inches wide = 10.4 CFM

Weather Sunny Warm - Temp = Approx 40 °F

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

RECORDED BY:

2/3/15
DATE

READ AND UNDERSTOOD BY:

2-3-95
DATE

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COC(s) #: 2267

PROJECT: 1995 SNOW MELT

DATE (MM/DD/YY): 2-2-95

SAMPLERS: C. MARTIAL

LOCATION: ANLAMP-2/2

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
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ANALYST	DATE	TIME	LOCATION	DEPTH	PARAMETER	UNIT	VALUE	REMARKS
AW020295-2/2	10/13	1413	TSS	250 ML (P)		423294050	4°C	
	10/13	1413	TDC	250 ML (G)		Z3116020	H ₂ SO ₄	
	10/13	1413	TPH	1000 ML (G)		H3224010	H ₂ SO ₄	
	10/13	1413	TDC	1000 ML (G)		H3224010	H ₂ SO ₄	
	10/13	1413	RCCRA Metals + Cu, Ni, Zn	1000 ML (P)		C3139020	HNO ₃	
	10/13	1413	GAMMA Spec. / Gross A/B	540 ML (P)		N/A	HNO ₃	
	10/13	1413	Sulfite AS Sulfuric Acid	250 ML (P)		423294050	4°C	

INSTRUMENT ID: YSI Model 3500
S# 92E038746

STANDARDIZED BY: Jay

QUALITY CONTROLLED MATERIALS: *Beaker # 225*

SAMPLE COLLECTION: SAMPLES COLLECTED PER

(performed on 2/3/95)

<u>FIELD DATA</u>	<u>TIME</u>	<u>TEMP.</u>	<u>pH</u>	<u>CONDUCT.(mS) ADJUSTED</u>	
GRAB 1	1619	5.7	6.41	0.121	0.120

~~GRAB 2~~ → NA

May 2/95

RECORDED BY:

DATE _____

READ AND UNDERSTOOD BY:

DATE _____

COMMENTS:

Samples Collected By C. MARTIN AT ANL. COC WAS Found To Be incomplete. RCRA Metals And TOC WAS Omitted From COC. PH And RAD ANALYSIS had to be deleted From COC.

IdE Performed PH (see Field DATA) RAD ANALYSIS will be sent to Another LAB.

A New COC Will be Filled out with the Correct ANALYSIS And Complete Sample ID #'s.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

Sag

2/95

RECORDED BY:

2/3/95
DATE

READ AND UNDERSTOOD BY:

DATE

**E
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COC(S) #: 2288

SAMPLERS: Jay Steve G.

LOCATION: SMS- SMC-MP-1/2

JAY
3/95

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
--------------------	-------------	-----------------	------------------	--------------	--------------

SMC031095-1/2G	1018	BOD	1000 ML (P)	C4101020	4°C
		COD	500 ML (P)	4159060	H ₂ SO ₄
		GAMMA Spec. / Gross A/B	4 liter (P)	M4039010	HNO ₃
		TKN	1000 MI (P)	4066052	H ₂ SO ₄
		TOL	1000 MI (G)	4139080	H ₂ SO ₄
		TPH	1000 MI (G)	4139080	H ₂ SO ₄
		RCRA METALS + Cu, Ni, Zn	1000 MI (P)	C4101020	HNO ₃
		TSS	250 MI (P)	4124172100	4°C
		TOTAL Phosphorous	500 MI (P)	4255020	H ₂ SO ₄
			JAY		
			3/95		

INSTRUMENT ID: YSI #92E038946

STANDARDIZED BY: JAY
(SEE YSI CALIB. BK., p. 29)
Cond. = 1.414

QUALITY CONTROLLED MATERIALS: NONE

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

<u>FIELD DATA</u>	<u>TIME</u>	<u>TEMP.</u>	<u>pH</u>	<u>CONDUCT. (mS)</u>	<u>ADJUSTED</u>
GRAB 1	1018	4.8 °C	7.21	0.448	0.446
GRAB 2 NA					

~~GRAB 2~~ NA
JAY 2/99

RECORDED BY:

3/10/95
DATE

READ AND UNDERSTOOD BY:

3/10/95
DATE

COMMENTS:

Rain Fall occurred over Night and into the Morning - WATER WAS NOTED TO BE RUNNING AT A LOW VOLUME FROM THE DISCHARGE PIPE. WATER HAD STARTED TO POND IN THE RETENTION BASIN. IT WAS DECIDED THAT GRAB SAMPLES WOULD BE COLLECTED FROM THE PONDING WATER. ALL SAMPLES WERE COLLECTED DIRECTLY INTO THE SAMPLE CONTAINERS. FIELD MEASUREMENTS WERE COLLECTED ALSO, FROM THE PONDING WATER. BY THE TIME SAMPLING WAS COMPLETED, THE DISCHARGE FROM THE PIPE HAD ENDED. FLOW METER HAD BEEN ENSTALLED THE DAY BEFORE. THE INFORMATION WAS DOWNLOADED TO THE DATA TRANSFER UNIT. FLOW WAS AT 13 LITERS PER MIN. WEATHER - COOL, CLOUDY, CALM. TEMP - 50°F.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

NORTH

SEE drawing ON
PAGE 8

RECORDED BY:

3/10/95
DATE

READ AND UNDERSTOOD BY:

3/10/95
DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 03/11/95
 SAMPLERS: J. JOHNSON, S. GARCIA
 LOCATION: RWMC-MP-2/1 (GRAB)

COC(s) #: 2296

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
RWMC031195-2/16 III		TOC	1000 mL (G)	H3224010	H ₂ SO ₄
		TKN	1000 mL (HDPE)	C4101020	H ₂ SO ₄
		TOC	250 mL (G)	Z3116020	H ₂ SO ₄
		Mg, dissolved	500 mL (HDPE)	4159060	4°C
		COD	500 mL (HDPE)	4159060	H ₂ SO ₄
		RCRA METALS ⁺			
		Cu, Ni, Zn, Mg, V, } Ti, Sb	1000 mL (HDPE)	C4101020	HNO ₃
		Cn, TOTAL	1000 mL (HDPE)	C4101020	NaOH
		TDS	250 mL (HDPE)	H/24172100	4°C
		Nitrogen ^{AS} , Ammonia	500 mL (HDPE)	4159060	H ₂ SO ₄
		VOA	(3)x40 mL (G)	B4129010	HCL

INSTRUMENT ID: YST 92E038946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS:
BEAKER# B32 BUCKET (P) # BKT08
FUNNEL# F-03

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	<u>1111</u>	<u>6.1°C</u>	<u>7.61</u>	<u>0.104</u>	<u>0.103</u>
GRAB 2	<u>N/A</u>

 RECORDED BY:

3/11/95
 DATE

35

Karen M. Smith
 READ AND UNDERSTOOD BY:

4-20-95
 DATE

COMMENTS:

WATER WAS BACKED UP IN THE DITCH. FLOOD HAD ALREADY OCCURRED
 BY THE TIME THE SAMPLES ARRIVED. SAMPLES WERE COLLECTED ANYWAY.
 SAMPLES WERE COLLECTED FROM THE COMPOSITOR (BOTTLIES 1 & 2). FIELD
 MEASUREMENTS WERE TAKEN THEN THE LIGN WAS TRANSFERRED TO THE SAMPLE
 CONTAINERS. THE 100 SAMPLE WAS COLLECTED OUT OF THE WATER IN
 THE DITCH. AM SAMPLES WERE PLACED ON ICE AFTER COLLECTION.
 WEATHER WAS COLD, WET, AND WINDY. ALL SAMPLE EQUIP. WAS RIGID
 WITH 25 WATER AT THE SITE PRIOR TO RETURNING TO CFA FOR DELIVERY.
 MIN. DAILEY FLOW RATE: 4.139 LPSA CUMULATIVE TOT VOLUME - 94690 LITERS
 AVE DAILEY FLOW RATE: 603.15 LPM

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
 (N/A if not applicable)

3/95
 J49

RECORDED BY: *[Signature]*

DATE 3/11/95

READ AND UNDERSTOOD BY: *[Signature]*

DATE 4-20-95

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 03/11/95
 SAMPLERS: J. JOHNSON, S. GARCIA
 LOCATION: RWMC031195-2/1 (MP-2/1)

COC(s) #: 2299
2302

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
RWMC031195-2/1c	1120	CO ₂ D	500 mL (HDPE)	4159060	H ₂ SO ₄
		Cn, TOTAL	1000 mL (HDPE)	C4101020	NaOH
		GAMMA SPEC, SR	4 LITER Cubie	M4039010	HNO ₃
		89,90 ALPHA SPEC.			
		H-3	250 mL (HDPE)	L/24172100	None
		MAGNESIUM, Dis.	500 mL (HDPE)	4159060	None
		Nitrogen, AS Ammonia	↓		H ₂ SO ₄
		RCRA METALS + Cu, Ni, Zn, Mg, V, Ti, Sb }	1000 mL (HDPE)	C4101020	HNO ₃
		TOC	250 mL (G)	Z3116020	H ₂ SO ₄
		TDS	250 mL (HDPE)	L/24172100	4°C
		TKN	1000 mL (HDPE)	C4101020	H ₂ SO ₄
RWMC031195-2/c	1120	VOA	(3)x40 mL (G)	B4129010	HCL
RWMC03119501	1100	VOA (TRIP BLANK)	(3)x40 mL (G)	B4129010	HCL

INSTRUMENT ID: YSI 92E038946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS:

BEAKER# - B37

BUCKET# 08

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (MS)	ADJUSTED
GRAB 1	1120	11.5	7.80	0.097	0.097
GRAB 2	N/A				

RECORDED BY:

3/11/95
DATE

37

READ AND UNDERSTOOD BY: Karen M. Smith

4-20-95
DATE

COMMENTS:

RWMC031195-2/C VOA SAMPLE WAS COLLECTED AS A GRAB. ALL OTHER SAMPLES WERE COLLECTED FROM THE COMPOSITOR (BOTTLERS 3 & 4).
WEATHER WAS COLD, WET, AND WINDY. FLOW WAS: 603.15 LPM. TOTAL FLOW FOR MONITORING PERIOD WAS 94690 LITERS.
ALL SAMPLES WERE PLACED ON ICE AFTER COLLECTION.
ALL EQUIPMENT WAS RINSED WITH DI WATER PRIOR TO RETURNING TO CFA.
SAMPLES WERE SENT TO WESTON LAB AND ATI LAB VIA FED EX ON 3-11-95.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

JAY

3/95

RECORDED BY:

3/11/95
DATE

READ AND UNDERSTOOD BY:

4-20-95
DATE

COMMENTS:

FLOW = 10 LITERS - 5.85 SECONDS. SAMPLES WERE COLLECTED INTO A BUCKET. THE FLOW WAS ALSO DETERMINED USING A BUCKET. THE LIQUID WAS TRANSFERRED TO THE SAMPLE BOTTLES FROM THE BUCKET. THE TOL WAS COLLECTED DIRECTLY INTO THE SAMPLE BOTTLE.

WEATHER WAS: WET, COLD, and Windy

Flow = 102.56 liters PER min.

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)
			NORTH
<p>3/95</p> <p>JAG</p>
RECORDED BY:	3/11/95 DATE	READ AND UNDERSTOOD BY:	4-20-95 DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 3/11/95
 SAMPLERS: J. JOHNSON; S. GARCIA
 LOCATION: RWMC-MP-1/2

COC(s) #: 2291

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
RWMC031195-1/2	1150	COD	500 mL (HDPE)	4159060	H ₂ SO ₄
		Cn, TOTAL	1000 mL (HDPE)	C4101020	NaOH
		8 SPEC; GROSS α/B	4 LITER CUBI	M4039010	HNO ₃
		Mg, DISSOLVED	500 mL (HDPE)	4159060	4°C
		NITROGEN, AMMONIA	500 mL (HDPE)	↓	H ₂ SO ₄
		RCRA METALS + CU, } Ni, Zn, Mg	1000 mL (HDPE)	C4101020	HNO ₃
		TOG	1000 mL (G)	H3224010	H ₂ SO ₄
		TOC	250 mL (G)	Z3116020	H ₂ SO ₄
		TDS	250 mL (HDPE)	L/24172100	4°C
		TKN	1000 mL (HDPE)	C4101020	H ₂ SO ₄
			JAN		
			3/95		

INSTRUMENT ID: (YSI) 92E038946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS:

BEAKER-225 BUCKET- BKT-16

FUNNEL- 305

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1150	4.1°C	6.40	0.333	0.331
GRAB 2	N/A				

RECORDED BY:

DATE

3/11/95

41

READ AND UNDERSTOOD BY: Karen M. Smith

DATE

4-20-95

COMMENTS:

FLOW AT THE TIME OF SAMPLING WAS 5 FEET IN 9.59 SECONDS.
 STREAM WAS 24" WIDE AND 8" DEEP, FLOW = 2.4 CFS.
 TOL Sample WAS Filled Directly into the Sample Bottle From
 the Stream. All other samples were collected using a Bucket.
 All samples were placed on ice as they were collected.
 Samples were LABELED and COC WAS DEVELOPED. Samples
 were sent to Klosson and ATI LAB VIA FED EX ON 3/11/95.
 All Sampling Equip. WAS Rinsed with D/E WATER prior to
 returning to CEA. WEATHER WAS: COLD, wet & Windy

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
 (N/A if not applicable)

$$A = \frac{1}{2} b h = \frac{1}{2} (24)(8) = 96 \text{ in}^2$$

$$= (96 \text{ in}^2) \left(\frac{1 \text{ ft}^2}{144 \text{ in}^2} \right) = 0.67 \text{ ft}^2$$

$$V = 5 \text{ ft} / 9.59 \text{ s} = 0.52 \text{ ft/s}$$

$$Q = VA = (0.52 \text{ ft/s})(0.67 \text{ ft}^2) = 0.34 \text{ cfs}$$

$$= \left(\frac{0.34 \text{ ft}^3}{\text{sec}} \right) \left(\frac{7.48 \text{ gal}}{\text{ft}^3} \right) \left(\frac{60 \text{ sec}}{\text{min}} \right) = 153 \text{ gpm}$$

DR Brown
 10/23/95

$$A = b h = (24)(8) = 192 \text{ in}^2 = 1.33 \text{ ft}^2$$

$$Q = VA = (0.52 \text{ ft/s})(1.33 \text{ ft}^2) = 0.69 \text{ cfs} = 311 \text{ gpm}$$

DR Brown
 1/8/96

3/95

$$A = b h = (24)(\frac{1}{8}) = 3 \text{ in}^2 = 0.02 \text{ ft}^2$$

$$Q = VA = (0.52 \text{ ft/s})(0.02 \text{ ft}^2) = 0.011 \text{ cfs} = 4.86 \text{ gpm}$$

$h = \frac{1}{8}$ $b = 24$

$$A = \frac{1}{2} b h = \frac{1}{2} (24)(\frac{1}{8}) = 1.5 \text{ in}^2 = 0.01 \text{ ft}^2$$

$$Q = VA = (0.52 \text{ ft/s})(0.01 \text{ ft}^2) = 0.005 \text{ cfs} = 2.43 \text{ gpm}$$

Flow was probably in concrete valley drain and 1/8 inch deep. DR Brown 1/8/96

RECORDED BY:

3/11/95
 DATE

READ AND UNDERSTOOD BY:

4-20-95
 DATE

COMMENTS:

FLOW AT THE TIME OF SAMPLING WAS 1' PER SECOND. STREAM WAS 6" WIDE AND 1/4" DEEP. FLOW = 0.0624 ^{3.73/95} ~~CFM~~ CFM
 Samples were collected from the ponded liquid using a Dipper and a Bucket. The TOL was collected directly from the pond into the Bottle. Samples were LABELED and PLACED on ICE. Field measurements were taken. Samples were shipped VIA Fed Ex to WESTON & ATE on 3/16/95. All Equip WAS RINSED WITH DI WATER prior to returning to CFA. WEATHER WAS: Cold, wet, windy

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
 (N/A if not applicable)

$$A = bh = (6)(1/4) = 1.5 \text{ in}^2$$

$$= 1.5 \text{ in}^2 \left(\frac{1 \text{ ft}^2}{144 \text{ in}^2} \right) = 0.01 \text{ ft}^2$$

$$V = 1 \text{ ft/s}$$

$$Q = VA = \left(\frac{1 \text{ ft}}{\text{s}} \right) (0.01 \text{ ft}^2) = 0.01 \text{ cfs} = 0.60 \text{ cfm}$$

$$= \left(\frac{0.01 \text{ ft}^3}{\text{sec}} \right) \left(\frac{7.48 \text{ gal}}{\text{ft}^3} \right) \left(\frac{60 \text{ sec}}{\text{min}} \right) = 4.7 \text{ gpm}$$

DR Brown
 10/23/95

Jay
 3/11/95

 RECORDED BY:

3/11/95
 DATE

Karen M. Smith
 READ AND UNDERSTOOD BY:

4-20-95
 DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 3/11/95
 SAMPLERS: J. JOHNSON; S. GARCIA
 LOCATION: ICPP-MP-1/1

COC(s) #: 2298

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
ICPP031195-1/1G	1335	BOD	1000 ml (HDPE)	4101020	4°C
		COD	500 ml (HDPE)	4159060	H ₂ SO ₄
		NATRITE AS HNO ₃	250 ml (HDPE)	L/24172100	↓
		METHYL Isobutyl ketone (3) x 40 ml (G)	B4249020		HCL
		8 SPEC; GROSS =/B	4 LITER CUBIE	M4039010	HNO ₃
		TKN	1000 mL (HDPE)	4101020	H ₂ SO ₄
		TOG	1000 mL (G)	H3224010	↓
		TDH	1000 mL (G)	↓	↓
		RCRA METALS + } Cu, Ni, Zn	1000 mL (HDPE)	4101020	HNO ₃
		TSS	250 mL (HDPE)	L/24172100	4°C
		PHOSPHORUS, total	1000 mL (HDPE)	4101020	

INSTRUMENT ID: (YSI) 92ED38946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS: BUCKET # - BKT-12

BEAKER # - B35

FUNNEL # - 314

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (MS)	ADJUSTED
GRAB 1	1335	8.4	7.51	0.148	0.147
GRAB 2	N/A				

RECORDED BY:

3/11/95
DATE

45

READ AND UNDERSTOOD BY:

4-20-95
DATE

COMMENTS:

Flow = 8.228 LPM - Total Flow = 7070 l.fees - Discharge AT
 This sample point was minimal Duration of the Flow only
 Allowed time to pull the grab portion (30 min. Flush) of the
 Sample Event. All grab samples were collected in the
 sample containers. Samples were loaded and COC was
 filled out. All sampling equipment was rinsed with DI
 water prior to returning to CFA. Samples were prepped
 for shipment to the lab at 689. Samples were sent
 via FedEx to Weston on 3-11-95. Weather - Cold, wet, cloudy

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
 (N/A if not applicable)

3/11/95
 Jay

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

3/11/95

Kevin H. Smith

4-20-95

COMMENTS:

FLOW AT TIME OF SAMPLING = 4 LITERS IN 4 SECONDS = 60 L/min.
Samples were collected as it discharged from the culvert approx.
60 to 70 feet upstream from the pond. Water was collected
into a bucket, then transferred to the sample containers. The
TDS was collected directly into the sample container. All
samples were labeled and CCL fill out. All Equip. was
raised at the site prior to taking back to CFA. Samples
were shipped Fed Ex to Weston on 3-11-95.
Weather: Cold, Windy, Wet —

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

A4

3/95

RECORDED BY:

3-11-95
DATE

READ AND UNDERSTOOD BY:

4-20-95
DATE

COMMENTS:

Grab Samples - GLOB samples were collected from the liquid that was collected by the compressor. TOL was collected directly into the sample container. This sample came from the liquid that collected in the pond. The force of the discharge forced the floatometer and sample tube out of the Calvert. And information could not be collected. All Equip was Rinsed Drip to Return to CEA. Samples were Shipped TO Weston via Fed Ex. on 3-11-95 - weather was cold, windy and wet.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

3/95 JAY

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORM WATER
 DATE (MM/DD/YY): 3/11/95
 SAMPLERS: J. JOHNSON, S. GARCIA
 LOCATION: SMC-MP-1/2 (composite)

COC(s) #: 2293

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
SMC031195-1/2C	1435	BOD	1000 ml (HDPE)	4101020	4°C
		COD	500 ml (HDPE)	4159060	H ₂ SO ₄
		GAMMA SPEC	4 LITER Cubic	M4039010	HNO ₃
		GROSS α/B			
		TKN	1000 mL (HDPE)	4101020	H ₂ SO ₄
		TPH	1000 mL (G)	H3224010	↓
		RCRA METALS+	1000 mL (HDPE)	4101020	HNO ₃
		Cu, Ni, Zn			
		TSS	250 mL (HDPE)	L24172100	4°C
		PHOSPHORUS, total	500 mL (HDPE)	4159060	H ₂ SO ₄

INSTRUMENT ID: 92E038946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS: BUCKET# - BKT-15

FUNNEL# - F02

BEAKER# - B48

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP. °C	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1435	7.7	7.02	0.080	0.080
GRAB 2	N/A				

RECORDED BY:

3/11/95
DATE

Karen M. Smith
READ AND UNDERSTOOD BY:

4-20-95
DATE

COMMENTS:

Composite Samples - Due to failure of the compositor
Composite samples were collected out of the liquid that
was ponded in the basin. A Bucket was used to collect the
liquid. The water was then placed in the sample containers.
All sampling equipment was rinsed with DI water prior
to returning to CFA. All samples ^{and} were labeled and a CAC was
filled out. Samples were shipped via Fed Ex. to Weston
on 3-11-95. Weather - Cold, Wet, Windy

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

3/95 JAY

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 3/21/95
 SAMPLERS: J. JOHNSON
 LOCATION: TSF-MP-2/2

COC(s) #: 2311
2313
2314
2317

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
TSF032195-2/2	1125	TOC	250 ML (G)	23116020	H ₂ SO ₄
		RCRA METALS + Cu, Ni, Zn	1000 ML (P)	C4101020	HNO ₃
		SURFACTANTS	500 ML (P)	4159060	4°C
		COD	500 ML (P)	4159060	H ₂ SO ₄
		TSS	250 ML (P)	424172100	4°C
TSF032195-2/2	1125	SWDA General Inorganics	LAB Supplied Bottles	N/A	^{Jan 7/95} AS ^{Jan 7/95} AS
		Oil & GREASE			As indicated
		SWDA Metals			By LAB
		SWDA Nutrients			
		Cyanide			
		SWDA Organics			
		H-3, ^{Jan 4/95} SR-90	250 ML (P)	424172100	NONE
		GAMMA SPEC, SR-90	4 liter (P)	M4039210	HNO ₃
		GROSS A/B, RA-226, 228			

INSTRUMENT ID: YSI 92E038946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS: Bucket - BKT-15

Beaker - B-51

Funnel - F-4

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (MS) ADJUSTED
GRAB 1	1125	4.1°C	8.41	0.286 / 0.271

GRAB 2 N/A

^{Jan 7/95}

RECORDED BY:

3/21/95
DATE

53

Karen M. Smith
READ AND UNDERSTOOD BY:

4-20-95
DATE

COMMENTS:

WATER WAS NOTED TO BE FLOWING INTO THE POND. IT WAS DECIDED TO COLLECT SAMPLES FOR D.W. ANALYSIS. SAMPLES WERE COLLECTED WITH A ^{14L 3/95} ~~5L~~ BUCKET AFTER THE BUCKET WAS FILLED THE LIQUID WAS POURED INTO THE SAMPLE CONT. SWDA ORGANISM WAS COLLECTED DIRECTLY OUT OF THE POND. FLOW AT THE TIME OF SAMPLE COLLECTION WAS 4.71 LITERS PER MIN. ALL SAMPLES WERE COLLECTED WITH NO PROBLEMS. EQUIP. WAS RINSED WITH DI WATER PRIOR TO RETURNING TO CFA. SAMPLES WERE SHIPPED TO WESTON AND ACCU-LAB VIA FED EX. - WEATHER - PARTLY CLOUDY, COOL, WINDY

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

NORTH

JA1

3/95

RECORDED BY:

3/21/95

DATE

Karen M. Smith

READ AND UNDERSTOOD BY:

4-20-95

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 3-21-95
 SAMPLERS: J. JOHNSON
 LOCATION: TSE-MP-1/2

COC(s) #: 2311
2314
2313
2315
2316

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
<u>TSE032195-1/2</u>	<u>1204</u>	<u>SWDA General Inorganics</u>	<u>LAB Supplied Bottles</u>	<u>NA</u>	<u>AS INDICATED BY</u>
		<u>OIL & GREASE</u>			<u>LAB</u>
		<u>SWDA Metals</u>			
		<u>Nutrients</u>			
		<u>Cyanide</u>			
		<u>SWDA Organics</u>			
		<u>H-3</u>	<u>250 mL (P)</u>	<u>424172100</u>	<u>4°C (VINE)</u>
		<u>GROSS ALB, SR-90</u>	<u>4 liter (P)</u>	<u>M4039010</u>	<u>HNO₃</u>
		<u>GAMMA SPC, RA-226, 228</u>			
		<u>TOL</u>	<u>1000 ML (G)</u>	<u>H3224110</u>	<u>H₂SO₄</u>
		<u>ALKALINITY</u>	<u>1000 ML (P)</u>	<u>424172100</u>	<u>4°C</u>
		<u>TDC</u>	<u>1000 ML (G)</u>	<u>2292316020</u>	<u>H₂SO₄</u>
<u>✓</u>	<u>✓</u>	<u>PCRA Metals + Ca, Ni, Zn</u>	<u>1000 ML (P)</u>	<u>C4106020</u>	<u>HNO₃</u>

INSTRUMENT ID: 1/SE 92ED38946

STANDARDIZED BY: J. JOHNSON

QUALITY CONTROLLED MATERIALS: Bucket # -BKT-03

Funnel # 302

Beaker # B-48

SAMPLE COLLECTION: SAMPLES COLLECTED PER _____

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	<u>1240</u>	<u>1.0°C</u>	<u>7.55</u>	<u>0.159</u>	<u>0.151</u>
GRAB 2 <u>NA</u>					

RECORDED BY: _____

3/11/95
DATE

55

READ AND UNDERSTOOD BY: _____

4-20-95
DATE

COMMENTS:

A Small Amount of Liquid was discharging into the pond. Samples were collected for both the normal stormwater parameters and also for SWDA parameters due to the injection well. Samples were collected using a bucket as it discharges from the culvert at approx. 60 to 70 feet north of the pond. TOC and Organics were collected directly into the sample containers. Flow at the time of sampling was - 6.69 liters per min. All Equip was rinsed with DI water prior to returning to CFD. Samples were shipped to Weston + Arneson via Fed Ex on 3-21-95. (Weather - Cool, Partly Cloudy and Windy)

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)
			NORTH
day 3/95
RECORDED BY:	3/21/95 DATE	Karen M. Smith READ AND UNDERSTOOD BY:	4-20-95 DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORMWATER
 DATE (MM/DD/YY): 5-3-95
 SAMPLERS: S. GARCIA
 LOCATION: ICPP050395-1/1G (CRAB)

COC(s) #: 2358/2357

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
ICPP050395/1G	1310	BOD	1000 ml (P)	4101020	48
		COD	500 ml (P)	153468	50 48 H ₂ SO ₄
		NITRATE AS Nitric Acid	250 ml (P)	4172100	H ₂ SO ₄
		Methyl Isobutyl Ketone (MIK)	(3) 40 ml Vials	4129010	48
		Gamma Spec, Gross	4 L Cubi	4284020	HNO ₃
		Alpha/beta			
		TKN	1000 ml (P)	4101020	H ₂ SO ₄
		NITrogen, AS ammonia	500 ml (P)	153468	H ₂ SO ₄
		TOD	1000 ml (G)	4346030	H ₂ SO ₄
		TPH	1000 ml (G)	4346030	H ₂ SO ₄
		RCRA Metals + Cu, } Ni, Zn, Sb, Ti, V }	1000 ml (P)	4101020	HNO ₃
		TSS	250 ml (P)	4172100	48
✓	✓	TOTAL Phosphorus	500 ml (P)	153468	H ₂ SO ₄

INSTRUMENT ID: YSI 92 E038946

STANDARDIZED BY: SG
 COND. = 1.415, See YSI Calib
 Log BK, p. 33!

QUALITY CONTROLLED MATERIALS: TEFLON Dipper - TD-7, Bucket - BKT-03

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS) ADJUSTED
GRAB 1	1310	6.1	7.93	.047 .047
GRAB 2	N/A			

S. Garcia
 RECORDED BY:

5-3-95
 DATE

57

Karen M. Smedley
 READ AND UNDERSTOOD BY:

8-10-95
 DATE

COMMENTS:

GRAB Samples - GRAB Samples were Collected From The Liquid Collected by the Compositor. All Samples were Shipped to Weston Lab, With the exception of the Gamma Spec. Gross Alpha/beta. These Samples were Shipped TO ATI Lab. All Sample Equipment WAS Rinsed PRIOR to Returning to CFA. The weather was windy, wet and cold. MAX Daily Flow Rate = 929.06 Lpm. AVG Daily Flow Rate = 79.7%. TOT Daily Volume = 30780 LIT. Cum AVG Flow Rate = 79.757 LIT. Cum TOT Volume = 30780 LIT.

STORM WATER SAMPLE LOGBOOK			
MAP OF SAMPLING LOCATION (N/A if not applicable)		NORTH	
SC 5-3-95
RECORDED BY:	5-3-95 DATE	READ AND UNDERSTOOD BY:	8-10-95 DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 Storm Water
 DATE (MM/DD/YY): 5-3-95
 SAMPLERS: J. Garcia
 LOCATION: ICP050395-1/1C (Composite)

COC(s) #: 2359/2354

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
ICP050395-1/1C	1330	BOD	1000ml (P)	4101020	4°C
		COD	500ml (P)	153468	H ₂ SO ₄
		Nitrate AS Nitric Acid	250 ml (P)	4172108	H ₂ SO ₄
		TKN	1000 ml (P)	4101020	H ₂ SO ₄
ICP050395-1/1C (PCC)		Methyl Isobutyl Ketone	(3) 40 ml VIALS	4129010	4°C
ICP050395-1/1C		Gamma Spec, Gross Alpha/Beta	4L Cubi	4284020	HNO ₃
		Nitrogen AS Ammonia	500 ml (P)	153468	H ₂ SO ₄
		TPH	1000ml (G)	4346030	H ₂ SO ₄
		PCRA METALS + Cu	1000ml (P)	4101020	HNO ₃
		Ni, Zn, Sn, Ti, V			
		TSS	250ml (P)	4172100	4°C
		TOTAL Phosphorus	500ml (P)	153468	H ₂ SO ₄
ICP050395-1/1C (DEF)	1200	Methyl Isobutyl Ketone (TRIA BLANK)	(3) 40 ml VIALS	4129010	4°C

INSTRUMENT ID: YSI 92E036946

STANDARDIZED BY: SG
 COND. = 1.415, SEE YSI CALIB. Log BK
 P. 33

QUALITY CONTROLLED MATERIALS: TEFLON. DIAPER TD-09, BUCKET. BKT-03, BEAKER. B-36

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1330	6.2	9.51	.042	.042
GRAB 2	N/A				

J. Garcia
 RECORDED BY:

5-3-95
 DATE

59

Karen M. Smith
 READ AND UNDERSTOOD BY:

8-10-95
 DATE

COMMENTS:

Composite Samples were Collected directly From the Compositor From
Bottles 3+4. All Sample Equipment was Rinsed PReore to Leaving the Site.
Weather was windy, Cold & wet. All Samples were Shipped to Weston Lab.
With the Exception OF the Gamma Spec., Gross Alpha/beta. These Samples
were shipped to ATI Lab.

KMB. 8-10-95

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

NORTH

S6
5-3-95

D. Dancs

RECORDED BY:

5-3-95

DATE

Karen M. Smith

READ AND UNDERSTOOD BY:

8-10-95

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 STORM WATER
 DATE (MM/DD/YY): 5-2-95
 SAMPLERS: CHAS MARTIN
 LOCATION: ARGONNE NATIONAL LAB - WEST

COC(s) #: OILS

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
AWL-1 0502952/262	4:04	TOC	1000 ml (G)	4346030	H ₂ SO ₄
MP 2/2/95 DRB 2/2/95	G-3 4:06	TPH	1000 ml (G)	4346030	H ₂ SO ₄
	G-1 4:02	Gamma Spec, Gross Alpha/beta	4 L Cubi	4284020	HNO ₃
	G-4 4:07	RCRA Metals + Cu, Ni, Zn	1000 ml (P)	4101020	HNO ₃
	G-5 4:09	TOC	250 ml (G)	2311620	H ₂ SO ₄
	G-6 4:15	TSS	250 ml (P)	2311620	4°C
AWL-1 0502952/266	4:14	Gamma Spec, Gross Alpha/beta	4 L Cubi	4284020	HNO ₃
	2G 4:13	TOC	1000 ml (G)	4346030	H ₂ SO ₄
MP 1/2 DRB 1/2/95	3G 4:15	TOC	250 ml (G)	2311620	H ₂ SO ₄
	4G 4:18	TPH	1000 ml (G)	4346030	H ₂ SO ₄
	6G 4:17	RCRA Metals + Cu, Ni, Zn, Pb, Ti, V	1000 ml (P)	4101020	HNO ₃
	7G 4:16	Sulfate AS Sulfuric	250 ml (P)	2311620	4°C
	8G 4:19	TSS	250 ml (P)	2311620	4°C

INSTRUMENT ID: YSI 922038946
 COND.: 1.437, see YSI CALIB LOG BC, p. 33

STANDARDIZED BY: K. Smith

QUALITY CONTROLLED MATERIALS: BRAKER-213, Funnel-310

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (ms)	ADJUSTED
GRAB 1 AWL-1	1200	10.8	7.29	.062	.061
GRAB 2 AWL-2	1210	10.7	7.48	.064	.063

D. Davis
 RECORDED BY:

5-3-95
 DATE

61

Karen M. Smith
 READ AND UNDERSTOOD BY:

8-10-95
 DATE

COMMENTS:

All Samples were Collected by Chris Martin of Argonne National Laboratory-West. Samples were Picked up on 5-3-95 And Transferred to CFA-689 TO PREPARED FOR SHIPPING. Samples were shipped to Weston Lab, except for the Gamma Spec. Gross Alpha/beta these were shipped to ATT.

~~KN 8/10/95~~

STORM-WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

NORTH

~~SL
5-3-95~~

D. Garcia

RECORDED BY:

5-3-95

DATE

Karen M. Smith

READ AND UNDERSTOOD BY:

8-10-95

DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1995 Stormwater
 DATE (MM/DD/YY): 6-7-95
 SAMPLERS: Johnson, McBride
 LOCATION: PBF-MP-

COC(s) #: 2381

SAMPLE ID #	TIME	ANALYSIS	CONTAINER	LOT #	PRES.
PBF060795 3/2	1350	METHOD 549 - ^{SDWA} SWDA	1000 ml (G)	NA	Na2S2O3
		METHOD 525 - SDWA	(3) 1000 ml (G)	NA	"
		METHOD 531 - SDWA	70 ml (G)	NA	"
		METHOD 524, 505 - SDWA	(3) 40 ml (G)	NA	Ascorbic Acid
		METHOD 548 - SDWA	(3) 40 ml (G)	NA	NONE
	TB	TRIP BLANK	(3) 40 ml (G)	NA	Ascorbic Acid
		METALS	(1) 1000 ml (P) (1) 4 liter (G)	NA	HNO3
		METHOD 507, 508, 515 SDWA	(1) 4 liter (G)	NA	Na2S2O3
		GENERAL SDWA	(1) 70 ml (G) (2) 500 ml (P)	NA	NONE
		0.1 % GREASE	1000 ml (G)	NA	H2SO4
		Nutrients	500 ml (P)	NA	
		Cyanide	500 ml (P)	NA	NaOH

INSTRUMENT ID: YSI 92503846

STANDARDIZED BY: Johnson

COND. = 1.454, see p.34 YSI CALIB
 log BK

QUALITY CONTROLLED MATERIALS: Bucket # BKT-12 - Funnel # - 306

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1342	8.7 °C	8.45	0.072	0.070
GRAB 2	NA				

RECORDED BY: [Signature] DATE: 6/7/95
 READ AND UNDERSTOOD BY: Karen M. Smith DATE: 8-10-95

COMMENTS:

WATER WAS ^{U/S} ~~up to~~ up to, and flowing into the injection well at this location. Samples were collected for Drinking Water Parameters. Samples were collected at the Area Near the opening of the well. A Bucket was used to transfer liquid into the Sample Containers. Oil & Grease, Method 548, and Method 504:505 ^{JAS} Containers were Filled Directly into the container themselves from the basin. Flow into the well casing at the time of Sampling was at approx. 1.7 CFM. All Samples were prepared for Shipment at CEA 681. Samples were Shipped to Acculab in CO on 6-7-95.

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

AN Sampling Equipment was rinsed with DI WATER AT the Site.

JAS
6/95

RECORDED BY:

6/7/95
DATE

Karen M. Smith
READ AND UNDERSTOOD BY:

8-10-95
DATE

STORM WATER SAMPLE LOGBOOK

PROJECT: 1-25 S. DRUM WATERS
DATE (MM/DD/YY): 6-7-95
SAMPLERS: Johnson, McBride
LOCATION: CFA-MP-1/2

COC(s) #: 2379,
2380

<u>SAMPLE ID #</u>	<u>TIME</u>	<u>ANALYSIS</u>	<u>CONTAINER</u>	<u>LOT #</u>	<u>PRES.</u>
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[illegible]

INSTRUMENT ID: YSI 926038946 STANDARDIZED BY: Sohnson
(COND. = 1.454 - see YSICALIB Logbk, p. 34)

QUALITY CONTROLLED MATERIALS: OKAY # - 325

SAMPLE COLLECTION: SAMPLES COLLECTED PER SAP

FIELD DATA	TIME	TEMP.	pH	CONDUCT. (mS)	ADJUSTED
GRAB 1	1417	14.4 °C	7.80	7.116	0.113
GRAB 2	N/A 6/75	Jay			

RECORDED BY:

DATE _____

65

READ AND UNDERSTOOD BY:

DATE _____

COMMENTS:

Samples were collected directly into the sample containers with the exception of the Gamma Spec/Gross Alpha-Beta. The 4 liter container was filled using a beaker. The ditch was full but not flowing at the time samples were pulled. No flow data was obtained. All equipment used during the sample process was rinsed with DI water at the site. Samples were prepared for shipment at CFA 689. All samples were shipped to the lab on 6-7-95 via Fed-Ex. ^{JAM} ~~AM~~ 6/7

STORM WATER SAMPLE LOGBOOK

MAP OF SAMPLING LOCATION
(N/A if not applicable)

1A4

6/95

RECORDED BY:

DATE

READ AND UNDERSTOOD BY:

DATE

Appendix B

Volatile Compounds

Table B-1. Method 524 Compounds for Storm Water and Snowmelt

1	Chloromethane
2	Bromomethane
3	Vinyl Chloride
4	Chloroethane
5	Methylene Chloride
6	1,1-Dichloroethene
7	1,1-Dichloroethane
8	1,2-Dichloroethene (total)
9	Chloroform
10	1,2-Dichloroethane
11	1,1,1-Trichloroethane
12	Carbon Tetrachloride
13	Bromodichloromethane
14	1,2-Dichloropropane
15	cis-1,3-Dichloropropene
16	Trichloroethene
17	Dibromochloromethane
18	1,1,2-Trichloroethane
19	Benzene
20	Trans-1,3-Dichloropropene
21	2-chloroethylvinylether
22	Bromoform
23	4-Methyl-2-pentanone
24	Tetrachloroethene
25	1,1,2,2-Tetrachloroethane
26	Toluene
27	Chlorobenzene
28	Ethylbenzene
29	Xylene (total)
30	1,2-Dichlorobenzene
31	1,3-Dichlorobenzene
32	1,4-Dichlorobenzene
33	Acrolein
34	Acrylonitrile
35	Trichlorofluoromethane

Table B-2. Regulated and Unregulated DW Method 524.2 Compounds

Compound 1	Benzene
Compound 2	Vinyl Chloride
Compound 3	Carbon tetrachloride
Compound 4	1,2-Dichloroethane
Compound 5	Trichloroethylene
Compound 6	p-Dichlorobenzene
Compound 7	1,1-Dichloroethylene
Compound 8	1,1,1-Trichloroethane
Compound 9	cis-1,2-Dichloroethylene
Compound 10	1,2-Dichloropropane
Compound 11	Ethylbenzene
Compound 12	Monochlorobenzene
Compound 13	o-Dichlorobenzene
Compound 14	Styrene
Compound 15	Tetrachloroethylene
Compound 16	Toluene
Compound 17	trans-1,2-Dichloroethylene
Compound 18	Xylenes (total)
Compound 19	Bromobenzene
Compound 20	Bromodichloromethane
Compound 21	Bromoform
Compound 22	Bromomethane
Compound 23	Chlorodibromomethane
Compound 24	Chloroethane
Compound 25	Chloroform
Compound 26	Chloromethane
Compound 27	o-Chlorotoluene
Compound 28	p-Chlorotoluene
Compound 29	Dibromomethane
Compound 30	m-Dichlorobenzene
Compound 31	Dichloromethane
Compound 32	1,1-Dichloroethane
Compound 33	1,1-Dichloropropene
Compound 34	1,3-Dichloropropane
Compound 35	e,z-1,3-Dichloropropene
Compound 36	2,2-Dichloropropane
Compound 37	1,1,2-Trichloroethane
Compound 38	1,1,1,2-Tetrachloroethane
Compound 39	1,1,2,2-Tetrachloroethane
Compound 40	1,2,3-Trichloropropane

Table B-2. (continued).

Compound 41	Bromochloromethane
Compound 42	n-Butylbenzene
Compound 43	Dichlorodifluoromethane
Compound 44	Fluorotrichloromethane
Compound 45	Hexachlorobutadiene
Compound 46	Isopropylbenzene
Compound 47	p-Isopropyl
Compound 48	Naphthalene
Compound 49	n-Propylbenzene
Compound 50	sec-Butylbenzene
Compound 51	tert-Butylbenzene
Compound 52	1,2,3-Trichlorobenzene
Compound 53	1,2,4-Trichlorobenzene
Compound 54	1,2,4-Trimethylbenzene
Compound 55	1,3,5-Trimethylbenzene