SITE INSPECTION (SI) REPORT

FLAMBEAU PAPER CORPORATION

a.k.a. FRASER PAPER WOOD YARD SITE
200 N FIRST AVENUE
PARKS FALLS, PRICE COUNTY, WISCONSIN

U.S. EPA ID: WID 093418614

Prepared by

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
Bureau of Remediation and Redevelopment

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DEPT. OF NATURAL RESOURCES

September, 2002

EPA Region 5 Records Ctr.
389444

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a.k.a. Fraser Paper Wood Yard Site
Park Falls , Wisconsin

U.S. EPA ID: WID093418614
September 2002

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1.0 EXECUTIVE SUMMARY

The Wisconsin Department of Natural Resources (WDNR), through a Cooperative Agreement with the United States Environmental Protection Agency (USEPA) Region 5, is tasked to conduct combined Preliminary Assessment/Site Investigations (PA/SIs) or Expanded Site Investigations (ESIs) to determine if potentially contaminated sites throughout Wisconsin are eligible for placement on the National Priorities List (NPL) of Superfund sites. Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Wisconsin Department of Natural Resources, Remediation and Redevelopment Program conducted a Preliminary Site Assessment at Flambeau Paper Corporation a.k.a Frasure Paper Wood Yard Site, Price County, Wisconsin. The SI was performed under the USEPA site investigation protocol.

The purpose of this SI was to determine if the reported disposal of unknown obsolete paper-making materials at the wood yard site pose a threat to human health and the environment through the Soil or Groundwater Exposure Pathways as stated under the Hazard Ranking System (HRS) rule (1).

In August 1987, Flambeau Paper Corporation reported to the EPA (EPA form 8900-1, Appendix A) that between 1974 and 1977, a warehouse was cleared of obsolete raw materials used in the papermaking process. On May 16, 1989, information was gathered from a site inspection and an interview with personnel that were present during the disposal. According to the interview and Flambeau Paper's EPA Form 8900-1, hazardous materials were cleared from a warehouse and disposed of in a15-acre wetland area of the northeast portion of the wood yard. The materials were of unknown age, but appeared very old and unusable. These materials were placed in a swampy area directly into the groundwater. Over a 3-month period, between 50 and 75 drums, carboys, and other containers were buried. Materials used in the paper making process that might have been buried in this area include biocides, solvents, silicate soda, caustic soda, acids, surfactants, or foam killers. The Flambeau River is approximately 800 feet down gradient of the suspected disposal area. A Potential Hazardous Waste Site Preliminary Assessment was completed (EPA Form 2070-12, Appendix B) in July 1989, and a PA rating of "Medium" was obtained.

Monitoring summary:

Surficial soil samples were collected at four locations. All samples were collected using a shovel between 1 and 2 feet below the ground surface. Soil sample SS-1 was collected off-site to set background levels. All soil samples were analyzed for the

complete Target compound list (TCL) analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCB/pesticides and the complete target analyte list (TAL) analyses of metals and cyanide. Matrix interference with the soil samples accounts for relatively high levels of detection (LOD) and levels of quantification (LOQ). In all five of the soil sample (E1YJ8, E1YJ9, E1YJ0, E1YK1, E1YK2) analysis for pesticides/PCBs, SVOCs and VOCs produced no significant exceedences. Metal analysis for soil ME1YK0 has elevated levels for Barium at 3.5X background, calcium at 4X background and lead at 4X background. Soil sample ME1YK1 had lead at 5X background. All other metal levels were below 3X the background sample (ME1YJ8).

Eight groundwater samples were collected from five existing monitoring wells. Seven of the eight groundwater samples were analyzed for the complete TCL analyses of organic compounds and complete TAL analyses of inorganic analytes. In addition, one trip blank was collected for VOC analysis only. In all six of the groundwater sample (2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01D04, 2002XF01S05) analysis for pesticides/PCBs, semivolatiles and VOCs produced no significant exceedences. Metal analysis for the groundwater samples showed elevated aluminum, barium, calcium, iron, magnesium, manganese, potassium, and sodium. Groundwater sample 2002XF01S02 had iron at 13X above the upgradient groundwater sample. Groundwater sample 2002XF01S03 had barium at 3X above background and iron at 43X above upgradient groundwater sample. Groundwater sample 2002XF01S04 had calcium at 3X, iron at 16X, and potassium at 4.4X above the upgradient groundwater sample. Groundwater sample 2002XF01D04 had calcium at 3X, iron at 14X, and potassium at 4X above the upgradient groundwater sample. Groundwater sample 2002XF01S05 had sodium at 7X the upgradient groundwater sample. All other elevated metal levels were less than 3X the background sample.

2.0 SITE BACKGROUND

2.1 Site Description

The Flambeau Paper Corporation Site is part of a 38-acre plus storage area located within an active pulp/paper making complex in the City of Park Falls, Price County, Wisconsin. The approximate 15-acre site was identified in interviews conducted during the Preliminary Assessment (PA) as the area waste drums were disposed of. Presently, the site is an open area used for the storage of round wood to be used at the adjacent pulp and paper mill. The wood yard is bordered by the papermill complex to the south, First Avenue N. to the west, North Ninth Street to the north, a wetland area to the northeast, and the west bank of the Flambeau River to the southeast. Figures 1 & 2 show the site location in regards to the City of Park Falls. Railroad tracks parallel the west bank of the river about 20 feet from the river's edge at an elevation of 4-5 feet

FIGURE #1

USGS SITE LOCATION MAP

PARKFALLS AREA TOPOGRAPHY

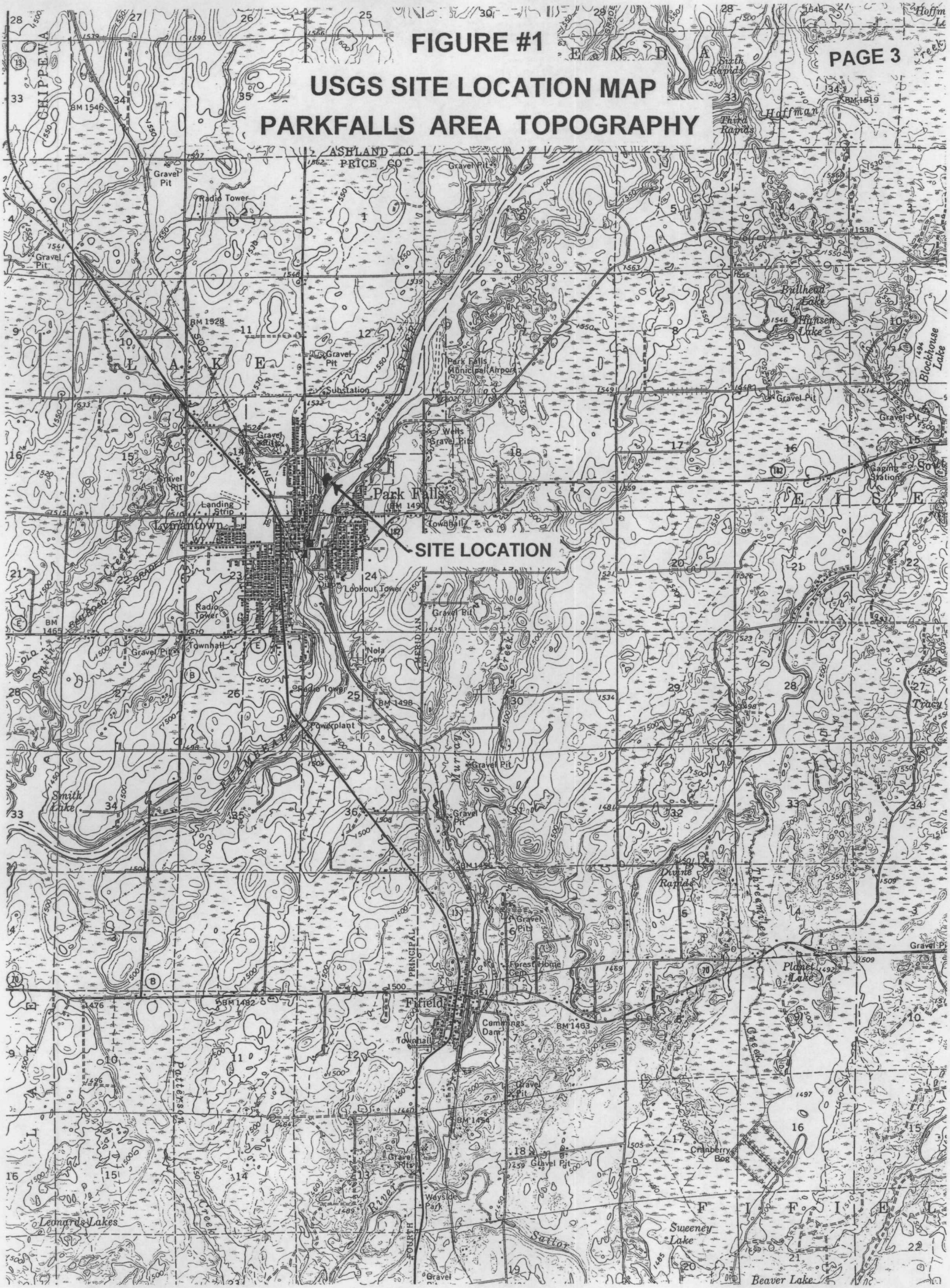
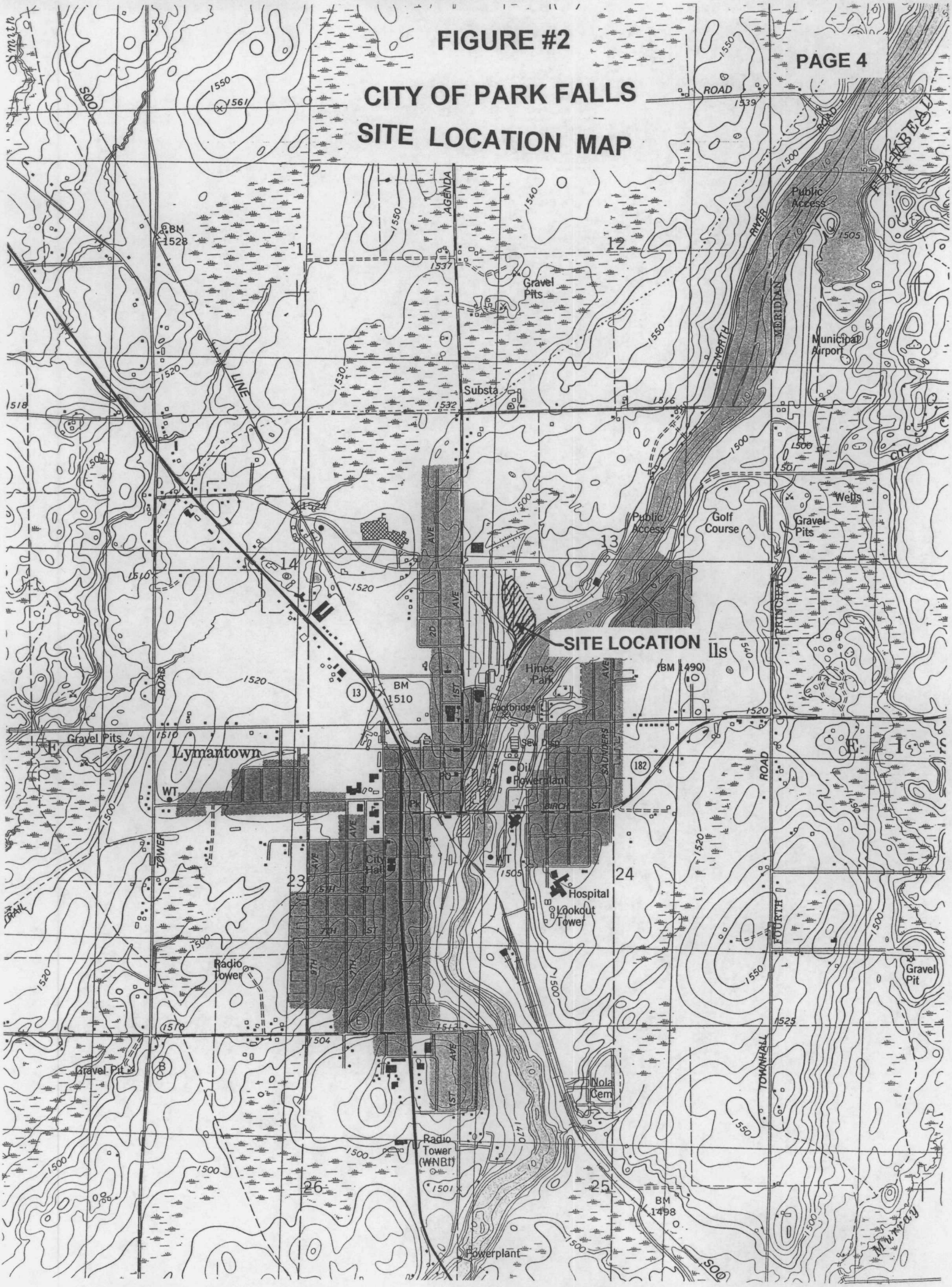


FIGURE #2

CITY OF PARK FALLS

SITE LOCATION MAP



above the river water surface. The site is relatively flat and between 1,487 and 1,495 feet AMSL. Surface water and groundwater flow is directed toward the Flambeau River to the southeast.

Storage piles of round wood approximately 25 feet high and up to 400 hundred feet long are located adjacent to railroad track spur lines and roadways used for staging and handling of the round wood. The site has, and continues to experience heavy rail, equipment and truck traffic. Access roads and railroad spur lines transect the property. Logging trucks and rail cars are continuously bringing pulpwood to the site. At times as much as 100,000 cords of round wood are stored on the property.

Access to the site is restricted, by fences and guards along the west, north, and northeast, by the Flambeau River to the east and by the papermill complex to the south.

2.2 Site History

Originally, the site was part of a larger wetland area adjacent to the Flambeau River. The site was progressively filled from the high ground on the west side of the site toward the north and east. Various owners since 1890 have used the site as a sawmill/lumber storage area and later for pulp/paper making operations. Appendix C contains copies of insurance maps (Sanborn Maps) of the site for 1909, 1917, 1929, 1939 and 1951. It is presently owned by Fraser Paper Inc.- Park Falls, Wisconsin (Fraser Paper). Since 1964, an approximately 40 acre parcel at the north end of the mill property along the west bank of the Flambeau River has been used as a round-wood storage yard for the production of pulp using the sulfite process. As the wood yard expanded, portions of the wetland continued to be progressively filled. This practice, which included disposal of mill debris, wood bark, cinders and ash continued until 1982 when an agreement with the U.S. Army Corp. of Engineers was reached to preserve the remaining wetland. The remaining portion of the wetland is still visible today to the northeast of the site. The area continues to serve as a wood storage yard. In 2001 a new pulpwood chipping facility was constructed just south of the area of concern. Figures #3 & #4 show the existing site features and an aerial photo of the site.

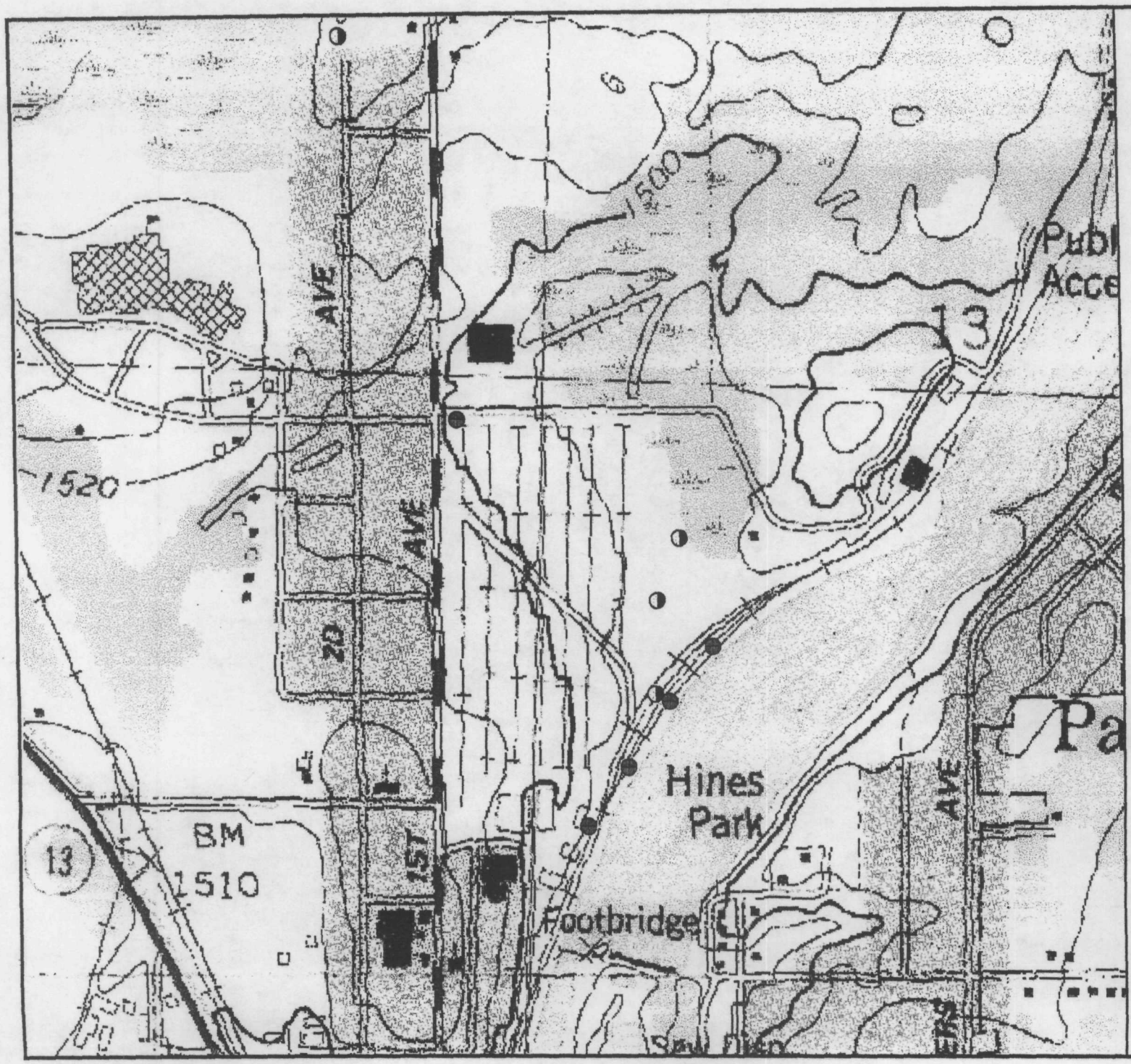


FIGURE #3
SITE FEATURES
at Fraser Paper

Sample Locations

- Soil
- Water

N
W E
S

WISCONSIN DEPT. OF NATURAL RESOURCES

0 0.09 0.18 Miles

1:7920

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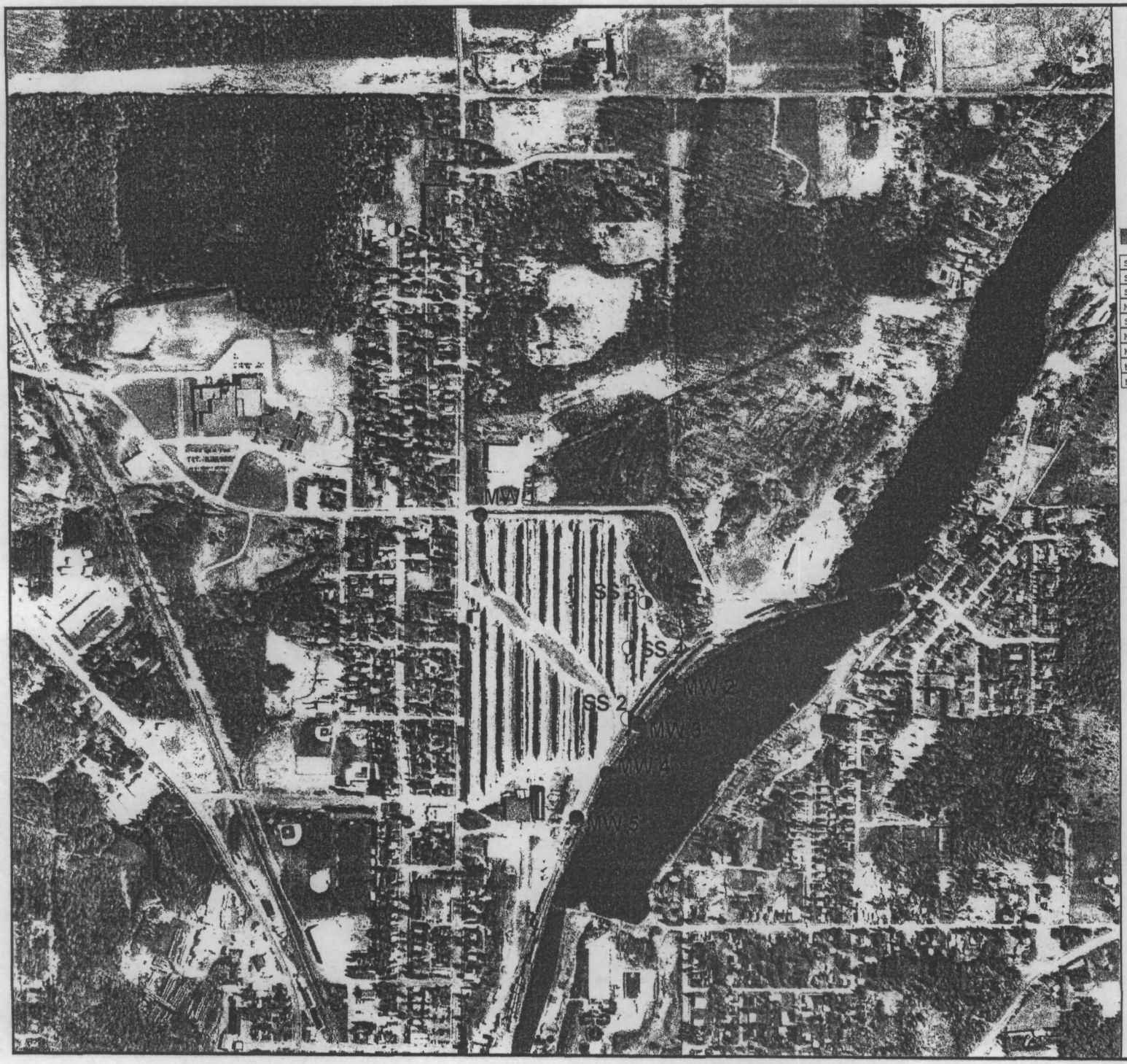
Tim Tarras

June 12, 2002



Fraser Paper Aerial Photo

Sample Locations
- Soil
- Water

Location	X Coordinate	Y Coordinate
SS 2	485627.2282	607682.36161
SS 3	485664.8531	607906.58576
SS 4	485631.4025	607817.66359
MW 1	485341.8871	608077.01615
SS 1	485179.4946	608623.05432
MW 2	485712.4855	607751.96749
MW 3	485647.9500	607672.14559
MW 4	485586.5431	607576.36180
MW 5	485526.6351	607493.18776

N

0 0.09 0.18 Miles

1:10704

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WPS

September 20, 2002

FIGURE #4

Since 1994, Fraser Paper has had an approval by the Wisconsin Department of Natural Resources to land spread spent sulfite liquor for dust suppression on their property including the woodyard site. In 1997 and 1998, 15,300 and 37,150 gallons respectively were land spread on the 40 acre woodyard. Since 1999 no sulfate liquor has been land spread. Sulfite liquor is a byproduct of the pulp making process. It is a solution of inorganic and organic compounds from cooking chemicals, wood sugars, lignins and other wood binders. The largest content of sulfate liquor is the dissolved organic content from the removal of the lignins, hemicelluloses, and other cell compounds from the cellulose fiber. COD, as a surrogate for organic matter, is 10 to 20 % of the liquor content, with a BOD/COD ratio of 20 to 30. Other bulk characteristics include a low pH of about 2, a conductivity of a few thousand to ten thousand umho/cm, and a hardness in the range of a few thousand to ten thousand ppm. Sulfate liquor has detectable levels of various metallic elements, including aluminum, barium, cadmium, chrome, copper, iron, lead, manganese, nickel, and zinc. The concentrations range from less than 1ppm to a few tens of ppm. Appendix D contains several rounds of sulfite liquor analytical analysis.

Fraser Paper (the present owner of the site) installed five monitoring wells at the site in October of 2001. The location of the wells was discussed and agreed to by the Wisconsin Department of Natural Resources (WDNR). There is one up gradient well and four down gradient wells. The four down gradient wells are within 10-20 feet of the bank of the Flambeau River and were located to determine if groundwater from the site is impacting the surface water (Flambeau River).The wells were sampled and a report was submitted to the WDNR in January 2002. Boring Logs, well construction forms and well development forms for the wells are located in Appendix E.

2.3 Geology of the Park Falls Area

The bedrock beneath the Park falls area is characterized by Mudrey et al. (1987) as early Proterozoic granite to tonalite, light gray, medium grained; moderately strong foliation defined by biotite, hornblende, or both; all rock units contain concentricall zoned plagioclase; geophysical data includes a neutral to moderate gamma magnetic signature (-100 to 200 gamma) with a gentle gradients and a -40 mgal Bouguer gravity signature The basement slopes to the southwest at about 15 feet/mile, and may be several thousand feet thick. The overlying unconsolidated deposits in the Park Falls area range from 0-50 feet in thickness (Trotta and Cotter, 1973), and are part of the Iron River Loam of the Champion Series (Soil Conservation Service [SCS], 1968). These sediments were originally deposited as ground moraine and glacial tills consisting poorly sorted silt, sand, clay, gravel and boulders (Young and Hindall, 1973). The SCS (1968) characterized the deposits as non-cobbly, deep, well-drained soils overlying gravely, sandy, and loamy material on upland.

2.4 Topography of the Park Falls Area

Local topography in the Park Falls area has been glacially influenced. There is low to moderate relief with many wetlands and lakes. Overall drainage is disordered and poorly developed (Young and Hindall, 1972). Drumlins, moraines, kames, and kettles occur locally. Elevation at the Flambeau Paper Wood Yard site range from 1487 feet MSL along the river bank and wetland along the east part of the site to 1495 feet MSL along North First Avenue to the west.

2.4 Hydrogeology of the Park Falls Area

Park Falls is in the northeast part of the Chippewa River Basin (Young and Hindall, 1972). Regional groundwater flow is generally to the southwest. The overall quality of groundwater in the Chippewa Basin is excellent. Regional recharge occurs to the north where the northern edge of the Chippewa Basin (and surface water divide) is located. The Flambeau River is both a regional and local point of discharge. The primary aquifer of the region is the glacially derived sand and gravel aquifer, which has a saturated thickness typically between 30 and 45 feet. The groundwater is utilized locally by the City of Park Falls and rural private domestic wells. These wells typically yield 5-15 gallons/minute (Young and Hindall, 1972).

The groundwater contour level under the Flambeau Paper Wood Yard site is between 1,485 and 1,490 feet MSL (2-7 below the ground surface) and flows east-southeast toward the Flambeau River. River levels are controlled by a hydroelectric dam south of the City of Park Falls, and seasonal variences in the levels of the river are very small. The entire wood yard site is in the 500-year flood plain. Appendix J contains a copy of the FEMA issued Flood Insurance map for the site.

3.0 SAMPLING LOCATIONS AND RESULTS

A total of 5 soil samples (including one duplicate) and 8 groundwater samples (including a field blank, trip blank, and duplicate) were collected during the May 21, 2002 investigation. Figure 5 shows the coordinates and sampling location. All samples were collected, processed, packaged, and shipped following the approved site specific Sampling Plan (Appendix F). Field log books were developed for each of the two sampling crews. Copies of both the soil and groundwater field log books are in Appendix G. A site specific Health and Safety Plan (Appendix H) was approved and followed while all sampling personal were on site.

The samples were analyzed through the USEPA Central Regional Laboratory (CRL) for the Target Compound List (TCL) organics, which included volatile organic compounds

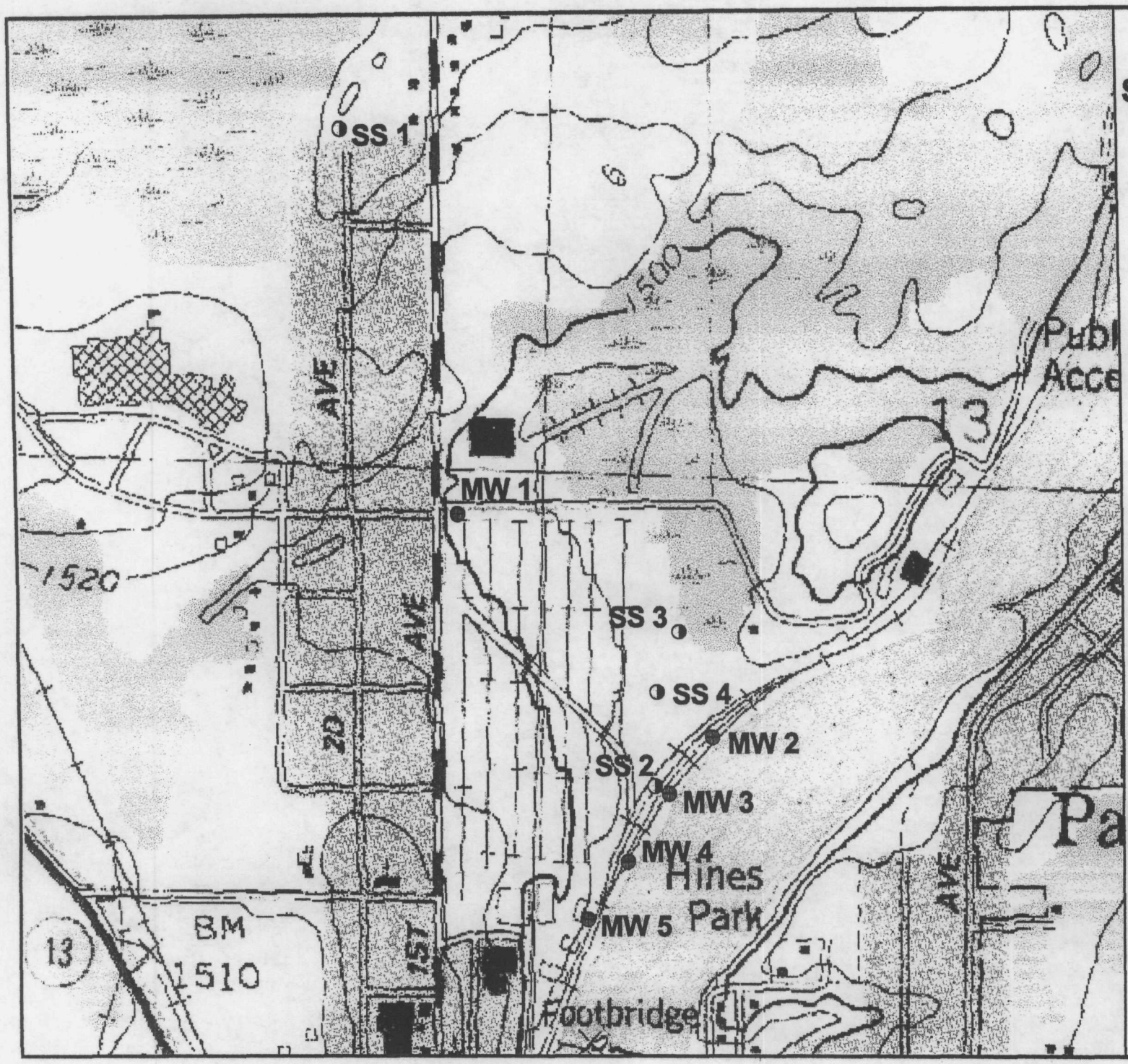

FIGURE #5

Sample Locations at Fraser Paper

Sample Locations

- Soil
- Water

N
W E
S

WISCONSIN DEPT. OF NATURAL RESOURCES

0 0.09 0.18 Miles

1:7920

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Map Creator:
Tim Tarras

June 12, 2002

(VOCs), semi-volatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs), and the Target Analyte List (TAL) metals and cyanide. Complete analytical results of this investigation are contained in Appendix I. Significant findings based on the data are summarized in Tables 2 & 3. Under the Hazard Ranking System (HRS), results are considered significant if the concentrations are three times the background concentrations and above the Contract Required Detection Limit (CRDL) or Contract Required Quantitation Limit (CRQL) (6).

3.1 Soil Samples

Five surficial soil samples were collected during this investigation to identify potential direct contact risk. The samples were collected from hand dug pits one to two feet deep. Locations for sampling were chosen based upon the historical information concerning the suspected fill location and accessibility. Soil sample locations were documented using a hand held Global Positioning Station (GPS) and the latitude and longitude are tabulated in Table #1. Photographs of each of the soil sampling locations were taken and are in Appendix J. A Microtip™ photo ionization detector (PID) with a 10.6 eV bulb was used to screen the hand-dug pits. The PID was calibrated using 100 ppm Isobutylene calibration gas. No readings were observed from any of the excavations. All soil sampling was conducted in accordance with the approved site specific Sampling Plan. VOC samples were collected using EnCore Samplers and kept on dry ice until they reached the laboratory for analysis.

Soil sample SS-1 was a background sample that was collected in native soils off-site. The background sample was located at the north end of 2nd Avenue 40 feet off the pavement approximately 1,850 feet northwest of the site. The property was former agricultural land used for hay production. Presently, the sampling location is undeveloped open green space.

Soil sample SS-2 was collected in the southeast portion of the site approximately 35-feet east of the main railroad spur line and switching area for a second railroad spur line. Native sod and soils were present but the test pit soils also contained obvious cinders and half-burned material.

Soil sample SS-3 was collected in the northeast portion of the site approximately 20 west of the wetland. Wood storage piles had recently been removed from the area and the ground was recently regraded. The top four inches of soil were relatively loose but beneath this loose soil was very tightly compacted soils. The soils appeared to be mostly fill material consisting of cinders, slag and burned wood. Some gravel, bark and organic soil were noted.

Soil sample SS-4 and a duplicate sample were collected near the believed center of the

waste disposal area. The sample was collected between two large round-wood storage piles. The top six-inches of soil contained organic wood material. Soils beneath that were very tightly compacted and contained cinders, slag, ash and other fill materials.

Soil sample results are in Table #1, and laboratory data sheets are in Appendix I.

3.2 Ground Water Samples

Ground water samples were collected from five existing monitoring wells on site, one up gradient (MW-1) and four down gradient (MW-2, MW-3, MW-4, MW-5) of the suspected disposal area. Soil boring logs, monitoring well construction forms, well development forms are included in Fraser Paper's report to the Wisconsin Department of Natural Resources (Appendix C). A minimum of three well volumes was removed from each well prior to sampling. Groundwater samples were collected, filtered (if required) and preserved in accordance with the approved site specific Sampling Plan.

Monitoring well MW-1 is located upgradient (northwest) from the believed disposal area site, but still on Fraser Paper property. The monitoring well is located just inside a fence and gate at the southeast corner of 2nd Avenue and 9th Street. Drilling logs reveal approximately five feet of soil fill material overlaying approximately five feet of organic peat. This indicates most probably that this area too was originally a wetland and filled early when the City of Park Falls was first being developed.

Monitoring wells MW-2, MW-3, MW-4, and MW-5 are located down gradient of the believed disposal area along the bank of the Flambeau River. A railroad spur line and access road parallel to the river and the monitoring wells were installed along the access road about 15-20 feet from the river's edge. The shoreline has been rip-rapped with broken concrete to prevent erosion. Soil borings taken when the wells were installed confirm that the road bed and railroad bed have been constructed on 4-12 feet of fill consisting of brown silty sand, peat, traces of wood and gravel. Two feet of peat was identified in MW-2 at 4 to 6 feet below ground surface. Silty sand with traces of gravel were present in all boring below 12 feet. This is most likely the original riverbed.

Groundwater sample results are in Table #2, and laboratory data sheets are in Appendix I.

4.0 MIGRATION PATHWAYS

4.1 Soil Exposure Pathway

It is clear from the well construction logs and soil sampling that the industrial storage site was constructed by filling a wetland. Fill material included soils and inorganic

Soil sample SS-4 and a duplicate sample were collected near the believed center of the waste disposal area. The sample was collected between two large round-wood storage piles. The top six-inches of soil contained organic wood material. Soils beneath that were very tightly compacted and contained cinders, slag, ash and other fill materials.

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4.0 MIGRATION PATHWAYS

4.1 Soil Exposure Pathway

It is clear from the well construction logs and soil sampling that the industrial storage site was constructed by filling a wetland. Fill material included soils and inorganic industrial waste including cinders, slag, ash and bark. Ash, cinders and slag typically are high in metals. For a number of years sulfate liquor, which also has high metals, has been land spread in the woodyard area. The high metals that have been detected in the surficial soil samples that were collected are believed to be related to both the cinders/ash/slag used as fill material in the area and the sulfate liquor that was land spread in the area and not to the reported drums in the area.

Vegetation is along the riverbank, fence lines and drainage ditches, but generally the storage area is bare soils.

There are approximately 15 full time employees who routinely work in the area. The facility is run 24-hours a day. Access to the site is restricted by a six-foot chain-link fence and guards control aggress and egress to the site. Additionally, no day-care facilities, schools, or terrestrial sensitive environments are located within 1200 feet of the suspected disposal area. The nearby population within four miles is 4,850.

4.2 Ground Water Pathway

The primary aquifer of the region is the glacially derived sand and gravel aquifer, which has a saturated thickness typically between 30 and 45 feet. The groundwater is utilized locally by the City of Park Falls and rural private domestic wells. The City of Park Falls municipal wells are located approximately 1.5 miles northeast of the site on the opposite (east) side of the Flambeau River. One private well is located within 1000 feet of the site. This well was sampled in 1989 during the PA and was not impacted. Groundwater flow near the site is east southeast toward the Flambeau River. Any precipitation falling on the site is directed to infiltrate the soil with ditches and drainage swales parallel to the access roadway and river. Overland flow off-site is not a concern.

4.3 Surface Water Pathway

The site is located adjacent to the Flambeau River, which flows into Chippewa River and ultimately into the Mississippi River. The Flambeau River is classified in the Wisconsin Water Quality Standards as a warm-water sport fisheries habitat. The wetland to the northeast is adjacent to and part of the Flambeau River surface water complex. The National Heritage Inventory, dated December 14, 2001, lists no threatened or endangered species that are known to be present in the area of the site. Most overland flow is prevented from directly flowing into the surface water or wetland

adjacent to the site by the permeable soil cover across the site and site drainage design. No stressed vegetation or discoloration of any surface water was noted in the wetland or along the riverbank.

5.0 REFERENCES

1. United States Environmental Protection Agency. Hazard Ranking System Guidance Manual. Publication 9345.1-07. PB92-963377. EPA 540-R-92-026. November 1992.

2. United States Environmental protection Agency. Guidance for Performing Site Inspections Under CERCLA (Interim Final). Superfund Publication 9345.1-05. EPA 540-R-92-021. September 1992.

3. Wisconsin Department of Natural Reasources Brownfield Assessment Program Quality Assurance Plan (WDNR BEAP QAP) of June 1998 and WDNR BEAP QAP Amendment for Superfund Site Assessment dated October 2001.

4. Wisconsin Department of Natural Resources (WDNR) Northern Region and Central Office Files.

5. Wisconsin DNR Geographical Information Systems.

6. Federal Register. Volume 55 No. 241. 14 December 1990.

7. United States Environmental Protection Agency. Office of Ground Water and Drinking Water. Current Drinking Water Standards. Http://www.epa.gov/safewater/mcl.html.

8. Wisconsin Administrative Codes, chs. NR 140 and NR 700.

9. Environmental Data Resources, Inc. historical fire insurance maps (Sanborn Maps) dated 1909, 1917, 1929, 1939, and 1951.

10. FEMA issued Flood Insurance Rate Map; ID # 5503440005B.P; Park Falls/Price County/Wisconsin. 02/15/1989

11 National Heritage Inventory List, revised 12/14/01.

TABLE 1

Soil Sample Results

TABLE I

Flambeau Paper

Soil Samples

Sample Location	CLP ORGANIC #	VOC	SVOC	Pest/PCB	CLP INORGANIC #	Metals/Cyanide
SS-1 Background	E1YJ8	X	X	X	ME1YJ8	X
SS-2	E1YJ9	X	X	X	ME1YJ9	X
SS-3	E1YK0	X	X	X	ME1YK0	X
SS-4	E1YK1	X	X	X	ME1YK1	X
SS-DUP Field duplicate of SS-4	E1YK2	X	X	X	ME1YK2	X

Analytical Results (Qualified Data)

Case #: 30529 | SDG : E1YJ8 | A
Site : FLAMBEAU PAPER CORP | Number of Soil Samples : 5
Lab. : ENVSYS | Number of Water Samples : 0
Reviewer :
Date :

	Background						Re-analyzed			
Sample Number :	E1YJ8		E1YJ9		E1YK0		E1YK0RE		E1YK1	
Sampling Location :	SS-1		SS-2		SS-3		SS-3		SS-4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		12:25		11:40	
%Moisture :	9		11		18		18		11	
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
Chloromethane	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
Vinyl Chloride	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Bromomethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Chloroethane	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
Trichlorofluoromethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,1-Dichloroethene	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
Acetone	10	UJ	2	J	22	J	~~42~~	~~J~~	27	J
Carbon Disulfide	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ
Methyl Acetate	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Methylene Chloride	16	U	17	U	26	U	~~14~~	~~U~~	23	U
trans-1,2-Dichloroethene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Methyl tert-Butyl Ether	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,1-Dichloroethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
cis-1,2-Dichloroethene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
2-Butanone	10	U	10	U	5	J	~~11~~	~~J~~	6	J
Chloroform	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,1,1-Trichloroethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Cyclohexane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Carbon Tetrachloride	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Benzene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,2-Dichloroethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Trichloroethene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Methylcyclohexane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,2-Dichloropropane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Bromodichloromethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
cis-1,3-Dichloropropene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
4-Methyl-2-pentanone	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Toluene	10	U	10	U	14	UJ	~~4~~	~~J~~	10	U
trans-1,3-Dichloropropene	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,1,2-Trichloroethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Tetrachloroethene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8 B
Site : FLAMBEAU PAPER CORP
Lab. : ENVSYS
Reviewer :
Date :

	Background						Re-analyzed			
Sample Number :	E1YJ8		E1YJ9		E1YK0		E1YK0RE		E1YK1	
Sampling Location :	SS-1		SS-2		SS-3		SS-3		SS-4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		12:25		11:40	
%Moisture :	9		11		18		18		11	
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Volatile Compound	*Result*	*Flag*	*Result*	*Flag*	*Result*	*Flag*	*Result*	*Flag*	*Result*	*Flag*
2-Hexanone	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Dibromochloromethane	10	U	10	U	14	U	~~14~~	~~U~~	10	U
1,2-Dibromoethane	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Chlorobenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Ethylbenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Xylenes (total)	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Styrene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
Bromoform	10	U	10	U	14	U	~~14~~	~~U~~	10	U
Isopropylbenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
1,3-Dichlorobenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
1,4-Dichlorobenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
1,2-Dichlorobenzene	10	U	10	U	14	UJ	~~14~~	~~UJ~~	10	U
1,2-Dibromo-3-chloropropane	10	R	10	R	14	R	~~14~~	~~R~~	10	R
1,2,4-Trichlorobenzene	10	UJ	10	UJ	14	UJ	~~14~~	~~UJ~~	10	UJ

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8 A
Site : FLAMBEAU PAPER CORP
Lab. : ENVSYS
Reviewer :
Date :

	Lab QC		Lab QC		Field duplicate		Lab blank		Lab blank	
Sample Number :	E1YK1MS		E1YK1MSD		E1YK2		VBLKFQ		VHBLKF3	
Sampling Location :	SS-4		SS-4		SS-DUP					
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002					
Time Sampled :	11:40		11:40		12:45					
%Moisture :	11		11		11		N/A		0	
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ
Chloromethane	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ
Vinyl Chloride	10	U	12	U	11	U	10	U	10	U
Bromomethane	10	UJ	12	UJ	11	UJ	10	U	10	UJ
Chloroethane	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ
Trichlorofluoromethane	10	U	12	U	11	U	10	U	10	U
1,1-Dichloroethene	51	J	67	J	11	UJ	10	UJ	10	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ
Acetone	18	J	31	J	23	J	10	UJ	10	UJ
Carbon Disulfide	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ
Methyl Acetate	10	U	12	U	11	U	10	U	10	U
Methylene Chloride	26	U	36	U	11	U	11		10	U
trans-1,2-Dichloroethene	10	U	12	U	11	U	10	U	10	U
Methyl tert-Butyl Ether	10	U	12	U	11	U	10	U	10	U
1,1-Dichloroethane	10	U	12	U	11	U	10	U	10	U
cis-1,2-Dichloroethene	10	U	12	U	11	U	10	U	10	U
2-Butanone	4	J	6	J	11	U	10	U	10	U
Chloroform	10	U	12	U	11	U	10	U	10	U
1,1,1-Trichloroethane	10	U	12	U	11	U	10	U	10	U
Cyclohexane	10	U	12	U	11	U	10	U	10	U
Carbon Tetrachloride	10	U	12	U	11	U	10	U	10	U
Benzene	39		46		11	U	10	U	10	U
1,2-Dichloroethane	10	U	12	U	11	U	10	U	10	U
Trichloroethene	32		37		11	U	10	U	10	U
Methylcyclohexane	10	U	12	U	11	U	10	U	10	U
1,2-Dichloropropane	10	U	12	U	11	U	10	U	10	U
Bromodichloromethane	10	U	12	U	11	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	12	U	11	U	10	U	10	U
4-Methyl-2-pentanone	10	U	12	U	11	U	10	U	10	U
Toluene	37		46		11	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	12	U	11	U	10	U	10	U
1,1,2-Trichloroethane	10	U	12	U	11	U	10	U	10	U
Tetrachloroethene	10	U	12	U	11	U	10	U	10	U

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8 B
Site : FLAMBEAU PAPER CORP
Lab. : ENVSYS
Reviewer :
Date :

	Lab QC		Lab QC		Field duplicate		Lab blank		Lab blank	
Sample Number :	E1YK1MS		E1YK1MSD		E1YK2		VBLKFQ		VHBLKF3	
Sampling Location :	SS-4		SS-4		SS-DUP					
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002					
Time Sampled :	11:40		11:40		12:45					
%Moisture :	11		11		11		N/A		0	
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2-Hexanone	10	U	12	U	11	U	10	U	10	U
Dibromochloromethane	10	U	12	U	11	U	10	U	10	U
1,2-Dibromoethane	10	U	12	U	11	U	10	U	10	U
Chlorobenzene	32		37		11	U	10	U	10	U
Ethylbenzene	10	U	12	U	11	U	10	U	10	U
Xylenes (total)	10	U	12	U	11	U	10	U	10	U
Styrene	10	U	12	U	11	U	10	U	10	U
Bromoform	10	U	12	U	11	U	10	U	10	U
Isopropylbenzene	10	U	12	U	11	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	12	U	11	U	10	U	10	U
1,3-Dichlorobenzene	10	U	12	U	11	U	10	U	10	U
1,4-Dichlorobenzene	10	U	12	U	11	U	10	U	10	U
1,2-Dichlorobenzene	10	U	12	U	11	U	10	U	10	U
1,2-Dibromo-3-chloropropane	10	R	12	R	11	R	10	R	10	R
1,2,4-Trichlorobenzene	10	UJ	12	UJ	11	UJ	10	UJ	10	UJ

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8 A
Site : FLAMBEAU PAPER CORP Number of Soil Samples : 5
Lab. : ENVSYS Number of Water Samples : 0
Reviewer :
Date :

	Background								Lab QC	
Sample Number :	E1YJ8		E1YJ9		E1YK0		E1YK1		E1YK1MS	
Sampling Location :	SS-1		SS-2		SS-3		SS-4		SS-4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		11:40		11:40	
%Moisture :	9		11		18		11		11	
pH :	5.8		5.2		5.5		6.0		6.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	360	UJ	370	UJ	400	UJ	370	UJ	370	UJ
Phenol	360	U	370	UJ	400	U	370	U	1900	
bis-(2-Chloroethyl) ether	360	U	370	UJ	400	U	370	U	370	U
2-Chlorophenol	360	U	370	UJ	400	U	370	U	1900	
2-Methylphenol	360	U	370	UJ	400	U	370	U	370	U
2,2'-oxybis(1-Chloropropane)	360	U	370	UJ	400	U	370	U	370	U
Acetophenone	360	U	370	UJ	70	J	370	U	52	J
4-Methylphenol	360	U	370	UJ	400	U	370	U	370	U
N-Nitroso-di-n-propylamine	360	U	370	UJ	400	U	370	U	900	
Hexachloroethane	360	U	370	UJ	400	U	370	U	370	U
Nitrobenzene	360	U	370	UJ	400	U	370	U	370	U
Isophorone	360	U	370	UJ	400	U	370	U	370	U
2-Nitrophenol	360	U	370	UJ	400	U	370	U	370	U
2,4-Dimethylphenol	360	U	370	UJ	400	U	370	U	370	U
bis(2-Chloroethoxy)methane	360	U	370	UJ	400	U	370	U	370	U
2,4-Dichlorophenol	360	U	370	UJ	400	U	370	U	370	U
Naphthalene	360	U	370	UJ	400	U	370	U	370	U
4-Chloroaniline	360	U	370	UJ	400	U	370	U	370	U
Hexachlorobutadiene	360	U	370	UJ	400	U	370	U	370	U
Caprolactam	360	U	370	UJ	400	U	370	U	370	U
4-Chloro-3-methylphenol	360	U	370	UJ	400	U	370	U	2300	
2-Methylnaphthalene	360	U	370	UJ	400	U	370	U	370	U
Hexachlorocyclopentadiene	360	UJ	370	UJ	400	UJ	370	UJ	370	UJ
2,4,6-Trichlorophenol	360	U	370	UJ	400	U	370	U	370	U
2,4,5-Trichlorophenol	910	U	930	UJ	1000	U	930	U	930	U
1,1'-Biphenyl	360	U	370	UJ	400	U	370	U	370	U
2-Chloronaphthalene	360	U	370	UJ	400	U	370	U	370	U
2-Nitroaniline	910	U	930	UJ	1000	U	930	U	930	U
Dimethylphthalate	360	U	370	UJ	400	U	370	U	370	U
2,6-Dinitrotoluene	360	U	370	UJ	400	U	370	U	370	U
Acenaphthylene	360	U	370	UJ	400	U	370	U	370	U
3-Nitroaniline	910	U	930	UJ	1000	U	930	U	930	U
Acenaphthene	360	U	370	UJ	400	U	370	U	1300	

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8
Site : FLAMBEAU PAPER CORP B
Lab. : ENVSYS
Reviewer :
Date :

	Background								Lab QC	
Sample Number :	E1YJ8		E1YJ9		E1YK0		E1YK1		E1YK1MS	
Sampling Location :	SS-1		SS-2		SS-3		SS-4		SS-4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		11:40		11:40	
%Moisture :	9		11		18		11		11	
pH :	5.8		5.2		5.5		6.0		6.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	910	UJ	930	UJ	1000	UJ	930	UJ	930	UJ
4-Nitrophenol	910	U	930	UJ	1000	U	930	U	2900	
Dibenzofuran	360	U	370	UJ	400	U	370	U	370	U
2,4-Dinitrotoluene	360	U	370	UJ	400	U	370	U	1300	
Diethylphthalate	360	U	370	UJ	400	U	370	U	370	U
Fluorene	360	U	370	UJ	400	U	370	U	370	U
4-Chlorophenyl-phenyl ether	360	U	370	UJ	400	U	370	U	370	U
4-Nitroaniline	910	U	930	UJ	1000	U	930	U	930	U
4,6-Dinitro-2-methylphenol	910	U	930	UJ	1000	U	930	U	930	U
N-Nitrosodiphenylamine	360	U	370	UJ	400	U	370	U	370	U
4-Bromophenyl-phenylether	360	U	370	UJ	400	U	370	U	370	U
Hexachlorobenzene	360	U	370	UJ	400	U	370	U	370	U
Atrazine	360	U	370	UJ	400	U	370	U	370	U
Pentachlorophenol	910	U	930	UJ	1000	U	930	U	3000	
Phenanthrene	360	U	370	UJ	350	J	370	U	97	J
Anthracene	360	U	370	UJ	85	J	370	U	370	U
Carbazole	360	U	370	UJ	400	U	370	U	370	U
Di-n-butylphthalate	360	U	370	UJ	56	J	370	U	370	U
Fluoranthene	360	U	370	UJ	470		80	J	110	J
Pyrene	360	U	370	UJ	630		92	J	2000	
Butylbenzylphthalate	360	U	370	UJ	400	U	370	U	370	U
3,3'-Dichlorobenzidine	360	UJ	370	UJ	400	UJ	370	UJ	370	UJ
Benzo(a)anthracene	360	U	370	UJ	270	J	370	U	370	U
Chrysene	360	U	370	UJ	330	J	370	U	370	U
bis(2-Ethylhexyl)phthalate	360	U	410	J	400	UJ	370	UJ	370	UJ
Di-n-octylphthalate	360	UJ	370	UJ	400	UJ	370	UJ	370	UJ
Benzo(b)fluoranthene	360	U	370	UJ	330	J	39	J	51	J
Benzo(k)fluoranthene	360	U	370	UJ	250	J	39	J	44	J
Benzo(a)pyrene	360	U	370	UJ	280	J	370	U	51	J
Indeno(1,2,3-cd)pyrene	360	U	370	UJ	240	J	370	U	370	U
Dibenzo(a,h)anthracene	360	U	370	UJ	400	U	370	U	370	U
Benzo(g,h,i)perylene	360	U	370	UJ	140	J	370	U	370	U

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8
Site : FLAMBEAU PAPER CORP A
Lab. : ENVSYS
Reviewer :
Date :

	Lab QC		Field duplicate		Lab blank					
Sample Number :	E1YK1MSD		E1YK2		SBLK05					
Sampling Location :	SS-4		SS-DUP							
Matrix :	Soil		Soil		Soil					
Units :	ug/Kg		ug/Kg		ug/Kg					
Date Sampled :	05/21/2002		05/21/2002							
Time Sampled :	11:40		12:45							
%Moisture :	11		11		N/A					
pH :	6.0		6.6							
Dilution Factor :	1.0		1.0		1.0					
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	370	UJ	370	UJ	330	UJ				
Phenol	2000		370	U	330	U				
bis-(2-Chloroethyl) ether	370	U	370	U	330	U				
2-Chlorophenol	2000		370	U	330	U				
2-Methylphenol	370	U	370	U	330	U				
2,2'-oxybis(1-Chloropropane)	370	U	370	U	330	U				
Acetophenone	64	J	370	U	330	U				
4-Methylphenol	370	U	370	U	330	U				
N-Nitroso-di-n-propylamine	1000		370	U	330	U				
Hexachloroethane	370	U	370	U	330	U				
Nitrobenzene	370	U	370	U	330	U				
Isophorone	370	U	370	U	330	U				
2-Nitrophenol	370	U	370	U	330	U				
2,4-Dimethylphenol	370	U	370	U	330	U				
bis(2-Chloroethoxy)methane	370	U	370	U	330	U				
2,4-Dichlorophenol	370	U	370	U	330	U				
Naphthalene	370	U	370	U	330	U				
4-Chloroaniline	370	U	370	U	330	U				
Hexachlorobutadiene	370	U	370	U	330	U				
Caprolactam	370	U	370	U	330	U				
4-Chloro-3-methylphenol	2700		370	U	330	U				
2-Methylnaphthalene	370	U	370	U	330	U				
Hexachlorocyclopentadiene	370	UJ	370	UJ	330	UJ				
2,4,6-Trichlorophenol	370	U	370	U	330	U				
2,4,5-Trichlorophenol	930	U	930	U	830	U				
1,1'-Biphenyl	370	U	370	U	330	U				
2-Chloronaphthalene	370	U	370	U	330	U				
2-Nitroaniline	930	U	930	U	830	U				
Dimethylphthalate	370	U	370	U	330	U				
2,6-Dinitrotoluene	370	U	370	U	330	U				
Acenaphthylene	370	U	370	U	330	U				
3-Nitroaniline	930	U	930	U	830	U				
Acenaphthene	1400		370	U	330	U				

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8
Site : FLAMBEAU PAPER CORP B
Lab. : ENVSYS
Reviewer :
Date :

	Lab QC		Field duplicate		Lab blank					
Sample Number :	E1YK1MSD		E1YK2		SBLK05					
Sampling Location :	SS-4		SS-DUP							
Matrix :	Soil		Soil		Soil					
Units :	ug/Kg		ug/Kg		ug/Kg					
Date Sampled :	05/21/2002		05/21/2002							
Time Sampled :	11:40		12:45							
%Moisture :	11		11		N/A					
pH :	6.0		6.6							
Dilution Factor :	1.0		1.0		1.0					
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	930	UJ	930	UJ	830	UJ				
4-Nitrophenol	3000		930	U	830	U				
Dibenzofuran	370	U	370	U	330	U				
2,4-Dinitrotoluene	1400		370	U	330	U				
Diethylphthalate	370	U	370	U	330	U				
Fluorene	370	U	370	U	330	U				
4-Chlorophenyl-phenyl ether	370	U	370	U	330	U				
4-Nitroaniline	930	U	930	U	830	U				
4,6-Dinitro-2-methylphenol	930	U	930	U	830	U				
N-Nitrosodiphenylamine	370	U	370	U	330	U				
4-Bromophenyl-phenylether	370	U	370	U	330	U				
Hexachlorobenzene	370	U	370	U	330	U				
Atrazine	370	U	370	U	330	U				
Pentachlorophenol	3100		930	U	830	U				
Phenanthrene	68	J	370	U	330	U				
Anthracene	370	U	370	U	330	U				
Carbazole	370	U	370	U	330	U				
Di-n-butylphthalate	370	U	370	U	330	U				
Fluoranthene	65	J	82	J	330	U				
Pyrene	2300		140	J	330	U				
Butylbenzylphthalate	370	U	370	U	330	U				
3,3'-Dichlorobenzidine	370	UJ	370	UJ	330	UJ				
Benzo(a)anthracene	370	U	370	U	330	U				
Chrysene	370	U	370	U	330	U				
bis(2-Ethylhexyl)phthalate	370	UJ	370	UJ	36	J				
Di-n-octylphthalate	370	UJ	370	UJ	330	UJ				
Benzo(b)fluoranthene	41	J	370	U	330	U				
Benzo(k)fluoranthene	370	U	370	U	330	U				
Benzo(a)pyrene	370	U	370	U	330	U				
Indeno(1,2,3-cd)pyrene	370	U	370	U	330	U				
Dibenzo(a,h)anthracene	370	U	370	U	330	U				
Benzo(g,h,i)perylene	370	U	370	U	330	U				

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8
Site : FLAMBEAU PAPER CORP
Lab. : ENVSYS
Reviewer :
Date :

Number of Soil Samples : 5
Number of Water Samples : 0

	Background								Lab QC	
Sample Number :	E1YJ8		E1YJ9		E1YK0		E1YK1		E1YK1MS	
Sampling Location :	SS-1		SS-2		SS-3		SS-4		SS-4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		11:40		11:40	
%Moisture :	9		11		18		11		11	
pH :	5.8		5.2		5.5		6.0		6.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
beta-BHC	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
delta-BHC	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
gamma-BHC (Lindane)	1.9	U	1.9	U	2.1	U	1.9	U	9.6	J
Heptachlor	1.9	U	1.9	U	2.1	U	1.9	U	14	
Aldrin	1.9	U	1.9	U	2.1	U	1.9	U	15	
Heptachlor epoxide	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
Endosulfan I	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
Dieldrin	3.6	U	3.7	U	4.0	U	3.7	U	27	
4,4'-DDE	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
Endrin	3.6	U	3.7	U	4.0	U	3.7	U	33	
Endosulfan II	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
4,4'-DDD	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
Endosulfan sulfate	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
4,4'-DDT	3.6	U	3.7	U	4.0	U	3.7	U	29	
Methoxychlor	19	U	19	U	21	U	19	U	19	U
Endrin ketone	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
Endrin aldehyde	3.6	U	3.7	U	4.0	U	3.7	U	3.7	U
alpha-Chlordane	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
gamma-Chlordane	1.9	U	1.9	U	2.1	U	1.9	U	1.9	U
Toxaphene	190	U	190	U	210	U	190	U	190	U
Aroclor-1016	36	U	37	U	40	U	37	U	37	U
Aroclor-1221	74	U	75	U	82	U	75	U	75	U
Aroclor-1232	36	U	37	U	40	U	37	U	37	U
Aroclor-1242	36	U	37	U	40	U	37	U	37	U
Aroclor-1248	36	U	37	U	40	U	37	U	37	U
Aroclor-1254	36	U	37	U	40	U	37	U	37	U
Aroclor-1260	36	U	37	U	40	U	37	U	37	U

Analytical Results (Qualified Data)

Case #: 30529 SDG : E1YJ8
Site : FLAMBEAU PAPER CORP
Lab. : ENVSYS
Reviewer :
Date :

	Lab QC		Field duplicate		Lab blank					
Sample Number :	E1YK1MSD		E1YK2		PBLK88					
Sampling Location :	SS-4		SS-DUP							
Matrix :	Soil		Soil		Soil					
Units :	ug/Kg		ug/Kg		ug/Kg					
Date Sampled :	05/21/2002		05/21/2002							
Time Sampled :	11:40		12:45							
%Moisture :	11		11		N/A					
pH :	6.0		6.6		6.0					
Dilution Factor :	1.0		1.0		1.0					
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.9	U	1.9	U	1.7	U				
beta-BHC	1.9	U	1.9	U	1.7	U				
delta-BHC	1.9	U	1.9	U	1.7	U				
gamma-BHC (Lindane)	11		1.9	U	1.7	U				
Heptachlor	13		1.9	U	1.7	U				
Aldrin	13		1.9	U	1.7	U				
Heptachlor epoxide	1.9	U	1.9	U	1.7	U				
Endosulfan I	1.9	U	1.9	U	1.7	U				
Dieldrin	24		3.7	U	3.3	U				
4,4'-DDE	3.7	U	3.7	U	3.3	U				
Endrin	29		3.7	U	3.3	U				
Endosulfan II	3.7	U	3.7	U	3.3	U				
4,4'-DDD	3.7	U	3.7	U	3.3	U				
Endosulfan sulfate	3.7	U	3.7	U	3.3	U				
4,4'-DDT	26		3.7	U	3.3	U				
Methoxychlor	19	U	19	U	17	U				
Endrin ketone	3.7	U	3.7	U	3.3	U				
Endrin aldehyde	3.7	U	3.7	U	3.3	U				
alpha-Chlordane	1.9	U	1.9	U	1.7	U				
gamma-Chlordane	1.9	U	1.9	U	1.7	U				
Toxaphene	190	U	190	U	170	U				
Aroclor-1016	37	U	37	U	33	U				
Aroclor-1221	75	U	75	U	67	U				
Aroclor-1232	37	U	37	U	33	U				
Aroclor-1242	37	U	37	U	33	U				
Aroclor-1248	37	U	37	U	33	U				
Aroclor-1254	37	U	37	U	33	U				
Aroclor-1260	37	U	37	U	33	U				

Analytical Results (Qualified Data)

Case #: 30529 SDG : ME1YJ8
Site : FLAMBEAU PAPER CORP
Lab. : LIBRTY
Reviewer : J. GANZ
Date : JULY 24, 2002

Number of Soil Samples : 5
Number of Water Samples : 0

	Background								Field duplicate	
Sample Number :	ME1YJ8		ME1YJ9		ME1YK0		ME1YK1		ME1YK2	
Sampling Location :	SS-1		SS-2		SS-3		SS-4		SS-DUP	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	05/21/2002		05/21/2002		05/21/2002		05/21/2002		05/21/2002	
Time Sampled :	10:30		11:10		12:25		11:40		11:40	
%Solids :	93.0		84.3		81.8		87.9		89.2	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	9450		6510		6480		6180		6940	
ANTIMONY	0.34	J	0.36	UJ	0.62	J	0.53	J	0.33	UJ
ARSENIC	0.86	U	1.3		1.6		0.96	U	0.92	
BARIUM	41.3		44.0		142		43.9		42.3	
BERYLLIUM	0.30	J	0.29	J	0.44	J	0.37	J	0.28	J
CADMIUM	0.061	U	0.068	U	0.073	U	0.068	U	0.062	U
CALCIUM	2360		2900		9710		6180		6230	
CHROMIUM	17.6		11.8		16.1		12.9		13.6	
COBALT	6.4		4.8		4.4		6.1		7.6	
COPPER	17.8		19.5		22.8		26.5		28.0	
IRON	14200		12100		14000		13000		13600	
LEAD	2.9	J	4.9	J	13.1	J	15.9	J	8.1	J
MAGNESIUM	3830		2760		1940		3910		4520	
MANGANESE	223		125		237		293		283	
MERCURY	0.040	U	0.052	U	0.083		0.057	U	0.047	U
NICKEL	17.2		12.1		12.7		15.1		18.9	
POTASSIUM	269	J	367	J	683	J	396	J	414	J
SELENIUM	1.1	J	1.1	J	1.0	J	0.52	J	0.61	J
SILVER	0.14	U	0.16	U	0.17	U	0.16	U	0.14	U
SODIUM	136	J	168	J	246	J	216	J	289	J
THALLIUM	0.68	R	0.75	R	0.81	R	0.75	R	0.68	R
VANADIUM	33.2		31.2		39.4		31.6		33.2	
ZINC	27.0		23.2		42.8		39.9		34.0	
CYANIDE	0.049	J	0.035	UJ	0.036	J	0.034	UJ	0.034	UJ

TABLE 2

Groundwater Sample Results

TABLE II

Flambeau Paper

Water Samples

Sample Location	CRL #	VOC	SVOC	Pest/PCB	Metals/Cyanide
MW-01 Background	2002XF01S01	X	X	X	X
MW-02	2002XF01S02	X	X	X	X
MW-03	2002XF01S03	X	X	X	X
MW-04	2002XF01S04	X	X	X	X
MW-04DUP Field duplicate of MW-04	2002XF01D04	X	X	X	X
MW-05	2002XF01S05	X	X	X	X
TRIP BLANK	2002XF01R01	X			
RINSATE BLANK	2002XF01R02	X	X	X	X

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Number of Water Samples : 8

Date Analyzed: 05/28/02

Sample Type		Background								Field Duplicate	
CRL Sample Number :		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location :		MW-01		MW-02		MW-03		MW-04		MW04DUP	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/02		05/21/02		05/21/02		05/21/02		05/21/02	
Dilution Factor :		1		1		1		1		1	
Volatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Chloromethane	10		UJ		UJ		UJ		UJ		UJ
Vinyl chloride	10		UJ		UJ		UJ		UJ		UJ
Bromomethane	10		UJ		UJ		UJ		UJ		UJ
Chloroethane	10		UJ		UJ		UJ	8	J	8	J
Trichlorofluoromethane	10		UJ		UJ		UJ		UJ		UJ
Acetone	25		U		U		U	4	JU	6	JU
1,1-Dichloroethene	5		U		U		U		U		U
Methylene Chloride	5		UJ		UJ		UJ		UJ		UJ
Carbon disulfide	5		U		U		U		U		U
trans-1,2-Dichloroethene	5		U		U		U		U		U
1,1-Dichloroethane	5		U		U		U		U		U
2-Butanone	25		U		U		U		U		U
cis-1,2-Dichloroethene	5		U		U		U		U		U
Bromochloromethane	5		U		U		U		U		U
Chloroform	5		U		U		U		U		U
2,2-Dichloropropane	5		U		U		U		U		U
1,2-Dichloroethane	5		U		U		U		U		U
1,1,1-Trichloroethane	5		U		U		U		U		U
1,1-Dichloropropene	5		U		U		U		U		U
Carbon Tetrachloride	5		U		U		U		U		U
Benzene	5		U		U		U		U		U
Dibromomethane	5		U		U		U		U		U
Trichloroethene	5		U		U		U		U		U
1,2-Dichloropropane	5		U		U		U		U		U
Bromodichloromethane	5		U		U		U		U		U
cis-1,3-Dichloropropene	5		U		U		U		U		U
4-Methyl-2-pentanone	10		U		U		U		U		U
trans-1,3-Dichloropropene	5		U		U		U		U		U
1,1,2-Trichloroethane	5		U		U		U		U		U
Toluene	5		U		U		U		U		U
1,3-Dichloropropane	5		U		U		U		U		U
2-Hexanone	10		U		U		U		U		U
Dibromochloromethane	5		U		U		U		U		U

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Date Analyzed: 05/28/02

Sample Type		Background								Field Duplicate	
CRL Sample Number :		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location :		MW-01		MW-02		MW-03		MW-04		MW04DUP	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/02		05/21/02		05/21/02		05/21/02		05/21/02	
Dilution Factor :		1		1		1		1		1	
Volatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,2-Dibromoethane	5		U		U		U		UJ		UJ
Tetrachloroethene	5		U		U		U		U		U
1,1,1,2-Tetrachloroethane	5		U		U		U		U		U
Chlorobenzene	5		U		U		U		U		U
Ethylbenzene	5		U		U		U		U		U
m-&/or p-Xylene	5		U		U		U		U		U
Bromoform	5		U		U		U		U		U
Styrene	5		U		U		U		U		U
o-Xylene	5		U		U		U		U		U
1,1,2,2-Tetrachloroethane	5		U		U		U		U		U
1,2,3-Trichloropropane	5		U		U		U		U		U
Isopropylbenzene	5		U		U		U		U		U
Bromobenzene	5		U		U		U		UJ		UJ
n-Propylbenzene	5		U		U		U		U		U
2-Chlorotoluene	5		U		U		U		U		U
4-Chlorotoluene	5		U		U		U		U		U
1,3,5-Trimethylbenzene	5		UJ		UJ		UJ		UJ		UJ
tert-Butylbenzene	5		U		U		U		U		U
1,2,4-Trimethylbenzene	5		UJ		UJ		UJ		UJ		UJ
sec-Butylbenzene	5		U		U		U		U		U
1,3-Dichlorobenzene	5		U		U		U		U		U
p-Isopropyltoluene	5		UJ		UJ		UJ		UJ		UJ
1,4-Dichlorobenzene	5		U		U		U		U		U
1,2-Dichlorobenzene	5		U		U		U		U		U
n-Butylbenzene	5		UJ		UJ		UJ		UJ		UJ
1,2-Dibromo-3-chloropropane	5		U		U		U		U		U
1,2,4-Trichlorobenzene	5		U		U		U		U		U
Naphthalene	5		U		U		U		U		U
Hexachlorobutadiene	5		U		U		U		U		U
1,2,3-Trichlorobenzene	5		U		U		U		U		U

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Number of Water Samples : 8

Date Analyzed: 05/28/02

Sample Type				Field QC		Rinsate Blank					
CRL Sample Number :		2002XF01S05		2002XF01R01		2002XF01R02					
Sampling Location :		MW-05		TRIP BLANK		FLAMB RINSE					
Matrix :		Water		Water		Water					
Units :		ug/L		ug/L		ug/L					
Date Sampled :		05/21/02		05/21/02		05/21/02					
Dilution Factor :		1		1		1					
Volatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Chloromethane	10		UJ		UJ		UJ				
Vinyl chloride	10		UJ		UJ		UJ				
Bromomethane	10		UJ		UJ		UJ				
Chloroethane	10		UJ		UJ		UJ				
Trichlorofluoromethane	10		UJ		UJ		UJ				
Acetone	25		U	19	J	16	J				
1,1-Dichloroethene	5		U		U		U				
Methylene Chloride	5		UJ		UJ		UJ				
Carbon disulfide	5		U		U		U				
trans-1,2-Dichloroethene	5		U		U		U				
1,1-Dichloroethane	5		U		U		U				
2-Butanone	25		U		U	13	J				
cis-1,2-Dichloroethene	5		U		U		U				
Bromochloromethane	5		U		U		U				
Chloroform	5		U		U		U				
2,2-Dichloropropane	5		U		U		U				
1,2-Dichloroethane	5		U		U		U				
1,1,1-Trichloroethane	5		U		U		U				
1,1-Dichloropropene	5		U		U		U				
Carbon Tetrachloride	5		U		U		U				
Benzene	5		U		U		U				
Dibromomethane	5		U		U		U				
Trichloroethene	5		U		U		U				
1,2-Dichloropropane	5		U		U		U				
Bromodichloromethane	5		U		U		U				
cis-1,3-Dichloropropene	5		U		U		U				
4-Methyl-2-pentanone	10		U		U		U				
trans-1,3-Dichloropropene	5		U		U		U				
1,1,2-Trichloroethane	5		U		U		U				
Toluene	5		U		U		U				
1,3-Dichloropropane	5		U		U		U				
2-Hexanone	10		U	5	J	3	J				
Dibromochloromethane	5		U		U		U				

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Date Analyzed: 05/28/02

Sample Type				Field QC		Rinsate Blank					
CRL Sample Number :		2002XF01S05		2002XF01R01		2002XF01R02					
Sampling Location :		MW-05		TRIP BLANK		FLAMB RINSE					
Matrix :		Water		Water		Water					
Units :		ug/L		ug/L		ug/L					
Date Sampled :		05/21/02		05/21/02		05/21/02					
Dilution Factor :		1		1		1					
Volatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,2-Dibromoethane	5		U		U		U				
Tetrachloroethene	5		U		U		U				
1,1,1,2-Tetrachloroethane	5		U		U		U				
Chlorobenzene	5		U		U		U				
Ethylbenzene	5		U		U		U				
m-&/or p-Xylene	5		U		U		U				
Bromoform	5		U		U		U				
Styrene	5		U		U		U				
o-Xylene	5		U		U		U				
1,1,2,2-Tetrachloroethane	5		U		U		U				
1,2,3-Trichloropropane	5		U		U		U				
Isopropylbenzene	5		U		U		U				
Bromobenzene	5		U		U		U				
n-Propylbenzene	5		U		U		U				
2-Chlorotoluene	5		U		U		U				
4-Chlorotoluene	5		U		U		U				
1,3,5-Trimethylbenzene	5		UJ		UJ		UJ				
tert-Butylbenzene	5		U		U		U				
1,2,4-Trimethylbenzene	5		UJ		UJ		UJ				
sec-Butylbenzene	5		U		U		U				
1,3-Dichlorobenzene	5		U		U		U				
p-Isopropyltoluene	5		UJ		UJ		UJ				
1,4-Dichlorobenzene	5		U		U		U				
1,2-Dichlorobenzene	5		U		U		U				
n-Butylbenzene	5		UJ		UJ		UJ				
1,2-Dibromo-3-chloropropane	5		U		U		U				
1,2,4-Trichlorobenzene	5		U		U		U				
Naphthalene	5		U		U		U				
Hexachlorobutadiene	5		U		U		U				
1,2,3-Trichlorobenzene	5		U		U		U				

Analytical Results (Qualified Data)

Site: Flambeau Paper
Lab.: CRL
Number of Water Samples: 7

Date Analyzed: 06/10/02

Sample Type		Background								Field Duplicate	
CRL Sample Number:		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location:		MW-01		MW-02		MW-03		MW-04		MW04DUP	
Matrix:		Water		Water		Water		Water		Water	
Units:		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled:		05/21/02		05/21/02		05/21/02		05/21/02		05/21/02	
Dilution Factor:		1		1		1		1		1	
Semivolatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
bis(2-Chloroethyl)ether	5		U		U		U		U		U
Phenol	5		U		U		U		U		U
2-Chlorophenol	5		UJ		UJ		UJ		UJ		UJ
1,3-Dichlorobenzene	5		U		U		U		U		U
1,4-Dichlorobenzene	5		U		U		U		U		U
1,2-Dichlorobenzene	5		U		U		U		UJ		U
Benzyl alcohol	5		U		U		U		U		U
2-Methylphenol	5		UJ		UJ		UJ		UJ		UJ
4-Methylphenol	5		UJ		UJ		UJ		UJ		UJ
bis(2-Chloroisopropyl)ether	5		U		U		U		U		U
Hexachloroethane	5		U		U		U		U		U
N-Nitroso-di-n-propylamine	5		U		U		U		UJ		U
Nitrobenzene	5		U		U		U		U		U
Isophorone	5		U		U		U		UJ		U
2-Nitrophenol	5		UJ		UJ		UJ		UJ		UJ
2,4-Dimethylphenol	5		U		U		U		U		U
Benzoic acid	50*		UJ		UJ		UJ		UJ		UJ
bis(2-Chloroethoxy)methane	5		U		U		U		U		U
2,4-Dichlorophenol	5		UJ		UJ		UJ		UJ		UJ
1,2,4-Trichlorobenzene	5		U		U		U		UJ		U
Naphthalene	5		U		U		U		U		U
4-Chloroaniline	5		U		U		U		UJ		U
Hexachlorobutadiene	5		UJ		UJ		UJ		UJ		UJ
4-Chloro-3-methylphenol	5		UJ		UJ		UJ		UJ		UJ
2-Methylnaphthalene	5		U		U		U		UJ		U
2,4,6-Trichlorophenol	5		UJ		UJ		UJ		UJ		UJ
2,4,5-Trichlorophenol	5		UJ		UJ		UJ		UJ		UJ
2-Chloronaphthalene	5		U		U		U		UJ		U
2-Nitroaniline	5		U		U		U		UJ		U
Acenaphthylene	5		U		U		U		UJ		U
Dimethylphthalate	5		U		U		U		U		U
2,6-Dinitrotoluene	5		U		U		U		UJ		U
Acenaphthene	5		U		U		U		UJ		U
3-Nitroaniline	5		U		U		U		UJ		U
2,4-Dinitrophenol	50*		UJ		UJ		UJ		UJ		UJ
Dibenzofuran	5		U		U		U		UJ		U
2-4-Dinitrotoluene	5		U		U		U		UJ		U

* These compounds have an elevated detection limit.

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Date Analyzed: 06/10/02

Sample Type		Background								Field Duplicate	
CRL Sample Number :		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location :		MW-01		MW-02		MW-03		MW-04		MW04DUP	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/02		05/21/02		05/21/02		05/21/02		05/21/02	
Dilution Factor :		1		1		1		1		1	
Semivolatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
4-Nitrophenol	5		U		U		U		U		U
Fluorene	5		U		U		U		UJ		U
4-Chlorophenyl-phenylether	5		U		U		U		UJ		U
Diethylphthalate	5		U		U		U		UJ		U
4-Nitroaniline	5		U		U		U		U		U
4,6-Dinitro-2-methylphenol	5		U		U		U		U		U
n-Nitrosodiphenylamine	5		U		U		U		U		U
4-Bromophenyl-phenylether	5		U		U		U		UJ		U
Hexachlorobenzene	5		U		U		U		UJ		U
Pentachlorophenol	50*		UJ		UJ		UJ		UJ		UJ
Phenanthrene	5		U		U		U		U		U
Anthracene	5		U		U		U		U		U
Carbazole	5		U		U		U		U		U
Di-n-butylphthalate	5		U		U		U	4	J	4	J
Fluoranthene	5		U		U		U		UJ		U
Pyrene	5		U		U		U		UJ		U
Butylbenzylphthalate	5		U		UJ		UJ		UJ		U
3,3'-Dichlorobenzidine	5		U		U		U		UJ		U
Benzo[a]anthracene	5		U		UJ		UJ		UJ		U
Chrysene	5		U		U		U		UJ		U
bis(2-Ethylhexyl)phthalate	5	5	JBU	3	JBU	4	JBU		U	10	BU
Di-n-octylphthalate	5		U		U		U		U		U
Benzo[b]fluoranthrene	5		U		U		U		UJ		U
Benzo[k]fluoranthene	5		U		U		U		U		U
Benzo[a]pyrene	5		U		U		U		U		U
Indeno[1,2,3-cd]pyrene	5		U		U		U		U		U
Dibenz[a,h]anthracene	5		U		U		U		UJ		U
Benzo[g,h,i]perylene	5		U		U		U		U		U
Hexachlorocyclopentadiene	120*	120	R	120	R	120	R	120	R	120	R

* These compounds have an elevated detection limit.

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Number of Water Samples : 7

Date Analyzed: 06/10/02

Sample Type				Rinsate Blank							
CRL Sample Number :		2002XF01S05		2002XF01R02							
Sampling Location :		MW-05		FLAMB RINSE							
Matrix :		Water		Water							
Units :		ug/L		ug/L							
Date Sampled :		05/21/02		05/21/02							
Dilution Factor :		1		1							
Semivolatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
bis(2-Chloroethyl)ether	5		U		U						
Phenol	5		U		U						
2-Chlorophenol	5		UJ		UJ						
1,3-Dichlorobenzene	5		U		U						
1,4-Dichlorobenzene	5		U		U						
1,2-Dichlorobenzene	5		U		U						
Benzyl alcohol	5		U		U						
2-Methylphenol	5		UJ		UJ						
4-Methylphenol	5		UJ		UJ						
bis(2-Chloroisopropyl)ether	5		U		U						
Hexachloroethane	5		U		U						
N-Nitroso-di-n-propylamine	5		U		U						
Nitrobenzene	5		U		U						
Isophorone	5		U		U						
2-Nitrophenol	5		UJ		UJ						
2,4-Dimethylphenol	5		U		U						
Benzoic acid	50*		UJ		UJ						
bis(2-Chloroethoxyl)methane	5		U		U						
2,4-Dichlorophenol	5		UJ		UJ						
1,2,4-Trichlorobenzene	5		U		U						
Naphthalene	5		U		U						
4-Chloroaniline	5		U		U						
Hexachlorobutadiene	5		UJ		UJ						
4-Chloro-3-methylphenol	5		UJ		UJ						
2-Methylnaphthalene	5		U		U						
2,4,6-Trichlorophenol	5		UJ		UJ						
2,4,5-Trichlorophenol	5		UJ		UJ						
2-Chloronaphthalene	5		U		U						
2-Nitroaniline	5		U		U						
Acenaphthylene	5		U		U						
Dimethylphthalate	5		U		U						
2,6-Dinitrotoluene	5		U		U						
Acenaphthene	5		U		U						
3-Nitroaniline	5		U		U						
2,4-Dinitrophenol	50*		UJ		UJ						
Dibenzofuran	5		U		U						
2-4-Dinitrotoluene	5		U		U						

* These compounds have an elevated detection limit.

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Date Analyzed: 06/10/02

Sample Type				Rinsate Blank							
CRL Sample Number :		2002XF01S05		2002XF01R02							
Sampling Location :		MW-05		FLAMB RINSE							
Matrix :		Water		Water							
Units :		ug/L		ug/L							
Date Sampled :		05/21/02		05/21/02							
Dilution Factor :		1		1							
Semivolatile Compound	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
4-Nitrophenol	5		U		U						
Fluorene	5		U		U						
4-Chlorophenyl-phenylether	5		U		U						
Diethylphthalate	5		U		U						
4-Nitroaniline	5		U		U						
4,6-Dinitro-2-methylphenol	5		U		U						
n-Nitrosodiphenylamine	5		U		U						
4-Bromophenyl-phenylether	5		U		U						
Hexachlorobenzene	5		U		U						
Pentachlorophenol	50*		UJ		U						
Phenanthrene	5		U		U						
Anthracene	5		U		U						
Carbazole	5		U		U						
Di-n-butylphthalate	5	4	J	8							
Fluoranthene	5		U		U						
Pyrene	5		U		U						
Butylbenzylphthalate	5	3	J	3	J						
3,3'-Dichlorobenzidine	5		U		U						
Benzo[a]anthracene	5		U		UJ						
Chrysene	5		U		U						
bis(2-Ethylhexyl)phthalate	5	6	JBU	13	BU						
Di-n-octylphthalate	5		U		U						
Benzo[b]fluoranthrene	5		U		U						
Benzo[k]fluoranthene	5		U		U						
Benzo[a]pyrene	5		U		UJ						
Indeno[1,2,3-cd]pyrene	5		U		U						
Dibenz[a,h]anthracene	5		U		U						
Benzo[g,h,i]perylene	5		U		U						
Hexachlorocyclopentadiene	120*	120	R	120	R						

* These compounds have an elevated detection limit.

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Number of Water Samples : 7

Date Analyzed : 06/20/02

Sample Type		Background								Field duplicate	
CRL Sample Number :		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location :		MW-01		MW-02		MW-03		MW-04		MW04DUP	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/02		05/21/02		05/21/02		05/21/02		05/21/02	
Dilution Factor :		1		1		1		1		1	
Pesticide	Required Detection Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	0.05		UJ		UJ		UJ		UJ		UJ
Lindane	0.05		UJ		UJ		UJ		UJ		UJ
beta-BHC	0.05		UJ		UJ		UJ		UJ		UJ
delta-BHC	0.05		UJ		UJ		UJ		UJ		UJ
Heptachlor	0.05		UJ		UJ		UJ		UJ		UJ
Aldrin	0.05		UJ		UJ		UJ		UJ		UJ
Heptachlor Epoxide	0.05		UJ		UJ		UJ		UJ		UJ
gamma-Chlordane	0.05		UJ		UJ		UJ		UJ		UJ
alpha-Chlordane	0.05		UJ		UJ		UJ		UJ		UJ
p,p'-DDE	0.05		UJ		UJ		UJ		UJ		UJ
Endosulfan I	0.05		UJ		UJ		UJ		UJ		UJ
Dieldrin	0.05		UJ		UJ		UJ		UJ		UJ
Endrin	0.05		UJ		UJ		UJ		UJ		UJ
p,p'-DDD	0.05		UJ		UJ		UJ		UJ		UJ
Endosulfan II	0.05		UJ		UJ		UJ		UJ		UJ
p,p'-DDT	0.05		UJ		UJ		UJ		UJ		UJ
Endrin Aldehyde	0.05		UJ		UJ		UJ		UJ		UJ
Methoxychlor	0.05		UJ		UJ		UJ		UJ		UJ
Endosulfan Sulfate	0.05		UJ		UJ		UJ		UJ		UJ
Endrin Ketone	0.05		UJ		UJ		UJ		UJ		UJ
Aroclor AR1242	1.0		U		U		U		U		U

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL

Date Analyzed : 06/20/02

Sample Type				Rinsate Blank							
CFL Sample Number :		2002XF01S05		2002XF01R02							
Sampling Location :		MW-05		FLAMB RINSE							
Matrix :		Water		Water							
Units :		ug/L		ug/L							
Date Sampled :		05/21/02		05/21/02							
Dilution Factor :		1		1							
Pesticide	Required Detection Limit	Result	Flag	Result	Flag						
alpha-BHC	0.05		UJ		UJ						
Lindane	0.05		UJ		UJ						
beta-BHC	0.05		UJ		UJ						
delta-BHC	0.05		UJ		UJ						
Heptachlor	0.05		UJ		UJ						
Aldrin	0.05		UJ		UJ						
Heptachlor Epoxide	0.05		UJ		UJ						
gamma-Chlordane	0.05		UJ		UJ						
alpha-Chlordane	0.05		UJ		UJ						
p,p'-DDE	0.05		UJ		UJ						
Endosulfan I	0.05		UJ		UJ						
Dieldrin	0.05		UJ		UJ						
Endrin	0.05		UJ		UJ						
p,p'-DDD	0.05		UJ		UJ						
Endosulfan II	0.05		UJ		UJ						
p,p'-DDT	0.05		UJ		UJ						
Endrin Aldehyde	0.05		UJ		UJ						
Methoxychlor	0.05		UJ		UJ						
Endosulfan Sulfate	0.05		UJ		UJ						
Endrin Ketone	0.05		UJ		UJ						
Aroclor AR1242	1.0		U		U						

Analytical Results (Qualified Data)

Site : Flambeau Paper
Lab. : CRL
Reviewer :
Date Analyzed: 06/11/2002

Number of Water Samples : 7

Sample Type		Background								Field Duplicate	
CRL Sample Number :		2002XF01S01		2002XF01S02		2002XF01S03		2002XF01S04		2002XF01D04	
Sampling Location :		MW-01		MW-02		MW-03		MW-04		MW-04DUP	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :											
ANALYTE	Reporting Limit	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	44	38.3	M	43.5	M	71.9		93.6		81.4	
ANTIMONY	4	1	M		U		U		U		U
ARSENIC	2		U		U		U		U		U
BARIUM	0.9	26.4		43.4		88.4		45		43.1	
BERYLLIUM	2.8		U		U		U		U		U
CADMIUM	0.3		U		U		U		U		U
CALCIUM	82	31700		57100		40400		89600		90000	
CHROMIUM	0.9		U		U		U		U		U
COBALT	4.2		U		U		U		U		U
COPPER	4.4		U		U		U		U		U
IRON	42	164		2230		7040		2600		2360	
LEAD	2		U		U		U		U		U
MAGNESIUM	12	11100		17800		7000		24100		24200	
MANGANESE	8.6	284		357		1200		1760		1630	
MERCURY	0.5		U		U		U		U		U
NICKEL	2.7	1.7	M	1.5	M	1.9	M	2.3	M	2.4	M
POTASSIUM	482	1500		1980		4020		6660		6230	
SELENIUM	4		U		U		U		U	8	U*
SILVER	1.7		U		U		U		U		U
SODIUM	368	6240		5190		11300		12300		11900	
THALLIUM	2		U		U		U	4	U*		U
VANADIUM	17	16	MB	13.7	MB	15.9	MB	16.3	MB	17.4	BJ
ZINC	36		U		U		U		U		U
CYANIDE	8		U		U		U		U		U

* - There are multiple detection limits for this analyte because of dilutions.

Analytical Results (Qualified Data)

Site: Flambeau Paper
Lab.: CRL
Reviewer:
Date Analyzed: 06/11/2002

Number of Water Samples: 7

Sample Type				Rinsate Blank							
Sample Number:		2002XF01S05		2002XF01R02							
Sampling Location:		MW-05		RINSATE							
Matrix:		Water		Water							
Units:		ug/L		ug/L							
Date Sampled:											
ANALYTE	Required Detection Limit	Result	Flag	Result	Flag						
ALUMINUM	44	71.2			U						
ANTIMONY	4		U	4							
ARSENIC	2		U		U						
BARIUM	0.9	30.2			U						
BERYLLIUM	2.8		U		U						
CADMIUM	0.3		U		U						
CALCIUM	82	85900		58.2	M						
CHROMIUM	0.9		U		U						
COBALT	4.2		U		U						
COPPER	4.4		U		U						
IRON	42	34.7	M		U						
LEAD	2		U		U						
MAGNESIUM	12	23900		18.4							
MANGANESE	8.6	746			U						
MERCURY	0.5		U		U						
NICKEL	2.7	7.3			U						
POTASSIUM	482	2200			U						
SELENIUM	4	8	U*		U						
SILVER	1.7		U		U						
SODIUM	368	46400			U						
THALLIUM	2		U		U						
VANADIUM	17	16.7	MB	13.8	MB						
ZINC	36		U		U						
CYANIDE	8		U		U						

* - There are multiple detection limits for this analyte because of dilutions.

APPENDIX A

EPA Form 8900-1 (Notification of Hazardous Waste Site)

CERTIFIED MAIL -RETURN RECEIPT REQUESTED

AUG 17 1987

FLAMBEAU

August 10, 1987

Mr. Thomas Geishecker
Waste Management Division 5 HR
U.S. Environmental Protection Agency
Region V
230 S. Dearborn - 11th Floor
Chicago, Il 60604

Dear Mr. Geishecker:

Enclosed please find a notification of Hazardous Waste Site, Form 8900 - 1, pertaining to a site recently identified by Flambeau Paper Corp.

Sincerely,

Luke A. Arendash
Environmental Manager

LAA/jsz

cc: Paul Didier - WDNR
Tony Vogel, Esq. - Quarles and Brady
Charlie Kamps, Esq. - Quarles and Brady
Jack Grunewald - Pentair
Bob Touchette - Pentair
Jim McGinnity
Bill Longdin

EPA Notification of Hazardous Waste Site

United States Environmental Protection Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: FLAMBEAU PAPER CORP.
Street: 200 NORTH FIRST AVE.
City: PARK FALLS State: WI Zip Code: 54552

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: NORTH WOOD YARD
Street: 200 NORTH FIRST AVE
City: PARK FALLS County: PRICE State: WI Zip Code: 54552

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Arendash, Luke - Environmental Mgr.
Phone: (715) 762-3231

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 6/74 To (Year): 8/74 estimate

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☐ Inorganics
3. ☒ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☒ Acids
7. ☒ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☒ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Form Approved
OMB No. 2000-0138

EPA Form 8900-1

Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☒ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☒ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet _____

gallons 2750-4125

Total Facility Area

square feet _____

acres 2

Known, Suspected or Likely Releases to the Environment:

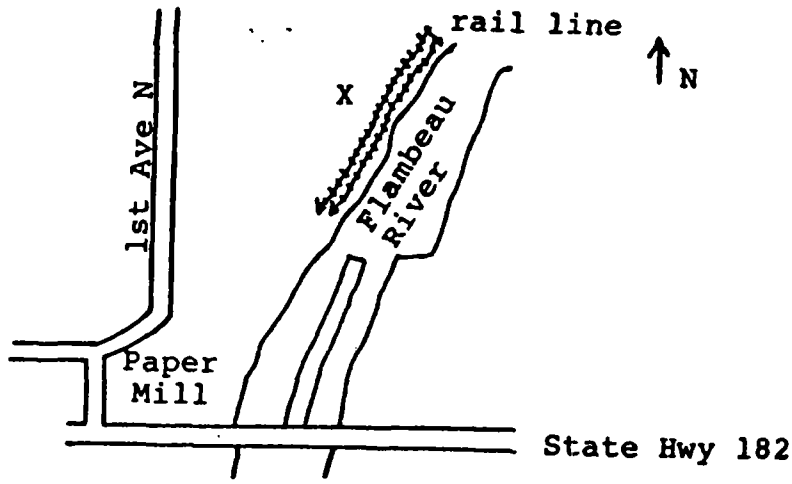
Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☐ Suspected ☐ Likely ☒ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.



Park Falls

The site is currently part of 20 acre pulp wood storage yard

Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

The site was designated for storage of pulp wood in 1966. It presently serves as the location of 1,000,000 cords of pulp wood with rail & truck access. At some point between 1974 & 1977, when the plant was operated under prior ownership, a plant warehouse was cleared of obsolete raw materials used in the paper makeing process. Over a three month period, betweeen 50 and 75 drums, carboys and other containers of such materials were buried in the wood yard. The contents are unknown and cannot be identified. The materials might have included biocides, solvents, silicate soda, caustic soda, acids, surfactants or foam killers, many of which are not hazardous. If present at all, the primary hazardous characteristic of these materials would be corrosivity. The area is bordered by a swamp, which abounds in beaver, birds, and flora. There is no evidence of contamanition.

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name: Luke A. Arendash

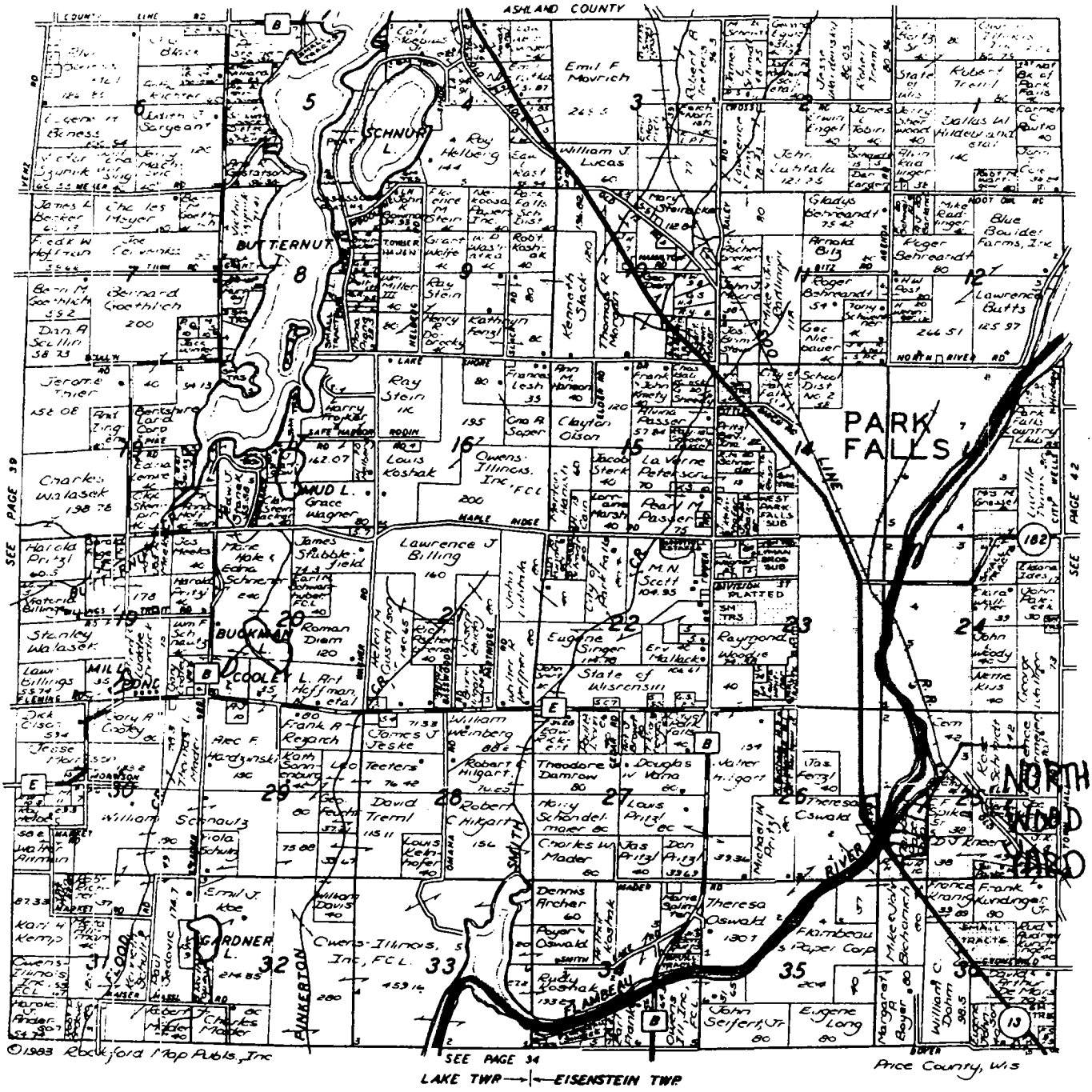
Street: P.O. Box 340

City: Park Falls State: WI Zip Code: 54552

Signature: Luke A. Arendash Date: 8-10-87

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

NORTH CENTRAL PART LAKE WEST PART EISENSTEIN T. 40 N. - R. 1 W.



NW¼, SW¼, Section 25, T40N, R1W

Clark - Skidders & Loaders
Timberjack - Skidders & Forwarders
Hydro-Ax - Feller Bunchers
FEC - Ear Type Slashers
Timbco - Feller Bunchers
Blue Ox - Whole Tree Chippers

RMS
ROAD MACHINERY & SUPPLIES CO.
FORESTRY EQUIPMENT DIVISION

1011 North Highway 13
P.O. Box 370
Park Falls, Wisconsin 54552
(715) 762-4653

THE STRENGTH TO PERFORM

APPENDIX B

Potential Hazardous Waste Site Preliminary Assessment (PA)

PA/SI File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
TELEFAX NO. 608-267-3579
TDD NO. 608-267-6897

July 20, 1989

File Ref: 4440

Dr. Donald Josif, Ph.D.
USEPA Region V 5HR-12
230 South Dearborn Street
Chicago, IL 60604

Dear Dr. Josif,

Enclosed is a Preliminary Assessment for Flambeau Paper Corporation as agreed upon in our Preremedial Superfund Cooperative Agreement. The status of the Wisconsin site is listed below.

Cerclis #	Site Name	PA Rating
WID V093418614	Flambeau Paper Corporation	MEDIUM

The site is classified as medium priority. WDNR believes that further investigation through the Preremedial Superfund program is warranted. We plan on conducting a site inspection at this site in the near future as part of our next cooperative agreement with EPA. Because of WDNR's involvement with this site, the state would like to be tasked to do the site inspection, should EPA require one.

We are submitting this Preliminary Assessment for your review and approval. If EPA does not concur with this rating, please contact Robin Schmidt at (608) 267-7569.

Sincerely,

S Bangert for

Mark F. Giesfeldt, Chief
Environmental Response and Repair Section

ENC.
cc: Robin Schmidt/Irene Olson - SW/3
Gary LeRoy - NWD
Steve Palzkill - NWD/Cumberland

Preliminary Assessment

Flambeau Paper Corp. WI WIV093418614

See Confidential files for scores

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WI	WI V093418614

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Flambeau Paper Corporation	200 First Avenue, North				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Park Falls,	WI	54552	Price	51	87
09 COORDINATES LATITUDE 45°56'52".0	LONGITUDE 090°26'41".0				

10 DIRECTIONS TO SITE (Starting from nearest public road)
North US Hwy 13 to Park Falls, Junction of US Hwy 13 and 9th St., North of City limits, west to Flambeau Paper woodlot, northeast end.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Pentair Inc.	1700 W. Hwy 36		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
St. Paul	MN	55113	(612)636-7920
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
Flambeau Paper Corp.	200 First Avenue, North		
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Park Falls	WI	54552	(715)762-5301

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___ / ___ / ___ (MONTH DAY YEAR) ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 08 / 10 / 87 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 05 / 16 / 89 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
6/74 (BEGINNING YEAR) | 8/77 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
The materials might have included biocides, solvents, silicate soda, caustic soda, acids, surfactants, foam killers, or PCB's.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Over a 3-month period, between 50 and 70 drums, carboys & other containers, allegedly containing the above mentioned waste types were buried in the Flambeau Paper Corp. wood yard. Barrels/containers were rusted, smashed, and placed directly into the groundwater with the City of Park Falls, & within 400 ft. of Flambeau River potentially contaminating groundwater & surface water.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Steve Palzkill	Wi. Department of Natural Resources NW District	(715) 872-3590

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Steve Palzkill	WDNR	Solid Waste	( )	6 / 22 / 89 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WI	WIV093418614

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply) Potential:

- [x] A. SOLID
- [x] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [x] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: UNKNOWN
CUBIC YARDS: _____
NO. OF DRUMS: 50-75

03 WASTE CHARACTERISTICS (Check all that apply) Potential:

- [x] A. TOXIC
- [x] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [x] E. SOLUBLE
- [ ] F. INFECTIOUS
- [x] G. FLAMMABLE
- [x] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [x] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	UNKNOWN		
PSD	PESTICIDES			
OOC	OTHER ORGANIC CHEMICALS	UNKNOWN		
IOC	INORGANIC CHEMICALS	UNKNOWN		
ACD	ACIDS	UNKNOWN		
BAS	BASES	UNKNOWN		
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Solvents		LF	UNKNOWN	
ACD	Acids		LF		
BAS	caustic soda		LF		
IOC	Biocides		LF		
	Silicate soda		LF		
	Surfactants		LF		
	foam killer		LF		
	PCB's		LF		
OOC	Biocides		LF		
	Surfactants		LF		
	foam killers		LF		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site Inspection (5/1/89) and Interview with Mamboeau Paper Corp. personnel and WDNR files in Park Falls.

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WI	WIV093418614

I. HAZARDOUS CONDITIONS AND INCIDENTS 4-mile radius population – Park Falls, Towns of Lake and Eisenstein

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
Material was deposited in area of high groundwater table – directly into the groundwater (in swampy area). The extent of the contamination is unknown and verification has not been made.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
The Flambeau River is too! away and a wetland is directly adjacent to the site. The wetland drains into the river.

01 [ ] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A — 04 NARRATIVE DESCRIPTION
Landfilled material was covered w/ topsoil.

01 [X] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
Due to the unknown nature of the wastes and characteristics of possible waste types buried together, the possibility of incompatible waste may exist.

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
If wastes have reached and contaminated the Flambeau R., direct contact may occur during recreational use by population in the area.

01 [X] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: 6-10 (Acres) — 04 NARRATIVE DESCRIPTION
There is a possibility of contamination of soil due to the condition of barrels and method of disposal. (See PA Narrative)

01 [X] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3200 — 04 NARRATIVE DESCRIPTION
Public wells are located approx. 1½ miles to the northeast of the site. Private residential wells also exist in 3 mile radius w/ no alternative system provided. Possibility of contamination may exist depending upon properties of material disposed of.

01 [X] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 20 — 04 NARRATIVE DESCRIPTION
Barrels were buried in what is now an active woodlot where workers may be exposed to contaminated soils/substances.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
Contamination of Flambeau R. is possible – there is potential for direct contact by area population.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WI	WIV093418614

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 [X] J. DAMAGE TO FLORA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION
Contamination from disposed materials could potentially damage vegetation in a wetland area and aquatic vegetation in the Flambeau R.

01 [X] K. DAMAGE TO FAUNA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
The wetland area adjacent to the alleged disposal site supports beaver, deer, waterfowl that frequent the area. Contamination could affect these fauna and aquatic life in the Flambeau R.

01 [X] L. CONTAMINATION OF FOOD CHAIN — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION
Damage to terrestrial + aquatic vegetation could reduce #s of primary consumers in the food chain and carry over to top consumers.

01 [X] M. UNSTABLE CONTAINMENT OF WASTES (Spills, runoff, standing liquids, leaking drums) — 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4850 — 04 NARRATIVE DESCRIPTION
Waste containers were reported to be in a rusted and leaking condition prior to disposal. (Interview w/ Flambeau Paper personnel 5/16/89)

01 [X] N. DAMAGE TO OFFSITE PROPERTY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION
Potential for materials to migrate off property in the future since there are no containment measures.

01 [ ] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 [X] P. ILLEGAL/UNAUTHORIZED DUMPING — 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [X] ALLEGED
04 NARRATIVE DESCRIPTION
Flambeau Paper reported to the EPA on 8-10-87 that past owner of site (Capital Cities Communication, INC) buried barrels in their woodlot w/out permit or approval.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
See Narrative

III. TOTAL POPULATION POTENTIALLY AFFECTED: 4850

IV. COMMENTS
See Narrative

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Site Inspection, Flambeau Paper interview w/ personnel.
WDNR files, Park Falls office.

Reference Log Sheet

1. EPA Form 8900-1.

2. Surface Water Resources of Price County, WDNR, 1983.

3. USGS Hydrologic Investigative Atlas HA-386, Water Resources of Wisconsin Chippewa River Basin, sheets 1-4, 1972.

4. A Users Manual, Uncontrolled Hazardous Waste Site Ranking System, USEPA, 1984.

5. Potential Hazardous Waste Site Preliminary Assessment (EPA Form 2070-12).

6. Bureau of Water Supply municipal wells files and well logs.

7. Soils Survey of Price County.

8. Information obtained from Park Falls Waterworks and 1985 Public Water Supply Databook.

9. Interviews with Flambeau Paper personnel (documented in DNR Solid Waste Files).

10. WDNR Solid Waste Files, NW District.

11. USGS Topographic Quadrangle Maps: . Park Falls Butternut Lake
Priest Lake Butternut

12. Site visits to Flambeau Paper Company site, Park Falls by DNR NW District personnel.

EXECUTIVE SUMMARY

SITE NAME: Flambeau Paper Corporation

ERRIS #: WID V093418614

LOCATION: 200 North First Avenue
Park Falls, WI 54552

SITE HISTORY: Flambeau Paper Corp. is the site of a paper mill that produces paper using the sulphite method. The paper mill has been operated by various owners since 1890. It is presently owned by Pentair, Inc. of St. Paul, Minnesota and is operated as Flambeau Paper Corporation. Information from Flambeau Paper's EPA Form 89000-1 (reported 8/10/87) states that between 1974 and 1977, when the plant was operated under ownership of Capital Cities Communication Inc., a plant warehouse was cleared of obsolete raw materials used in the paper-making process. Over a 3-month period, between 50 and 75 drums, carboys, and other containers were buried in what is now Flambeau Paper's wood yard (the site). The contents are unknown and cannot be identified by visual inspection. The materials might have included biocides, solvents, silicate soda, caustic soda, acids, surfactants, or foam killers. This list was generated from materials that are used in the paper-making process.

On May 16, 1989, information was gathered from a site inspection and an interview with personnel that were present during the disposal. It was indicated that the wood yard had a history of dumping/filling throughout the years. The wood yard is currently covered with about 80,000 cords of pulpwood. According to the interview and Flambeau Paper's EPA Form 8900-1, hazardous materials were cleared from a warehouse and disposed of in the wood yard. The materials were of unknown age, but appeared very old and unusable. The containers were rusted and during transportation to the wood yard may have been breached. These materials were placed in a swampy area directly into the groundwater. The Flambeau River is 400' away from the site and could have been or may currently be affected by the disposal.

A private well is located within 400 feet of the site; additional wells may exist within 1200 feet in an industrial area located to the northeast. It is possible that groundwater contamination from the site could affect these wells.

City wells are located approximatley 1 1/4 miles to the northeast of the site and 3 1/2 miles to the southwest; possibility of contamination may exist dependent upon the properties of the materials disposed. The majority of the City of Park Falls is within 1 mile of the site, with large portions of the Town of Lake and Eisenstein within a 4-mile radius. Use of the river in this area may expose the population to direct contact with possible contaminants

from the site.

In addition to the above mentioned materials, correspondence from the WDNR with Flambeau Paper in 1977 reveals that the corporation used PCB's in their operation. The letter recommended that Flambeau Paper develop a written procedure for handling, storage, and disposal of PCB's. The possibility exists that substances containing PCB's may have been stored in the warehouse prior to the drum disposal on the wood yard and may have been included in the disposal. On September 22, 1988 during a dredging project across the Flambeau River, tests of dredge spoil material revealed a PCB concentration of 4.96 ppm.

The dredging took place directly below Flambeau Paper's mill within 1/2 mile of the disposal site. This may or may not be related.

GEOLOGY/SOILS: Geology of the site consists of shallow undifferentiated igneous and metamorphic rocks that are covered by till consisting of clay, silt, sand, gravel, and boulders that resulted from glaciation. Soil is thin and composed of sand and gravel. The water table is shallow and easily contaminated under these conditions. The Flambeau River transects the aquifer of concern, however because of its shallow nature, does not present a discontinuity.

INSPECTION PRIORITY: MEDIUM

At this point, Flambeau Paper Corp. feels there are no signs of problems associated with the disposal. They believe the true number of barrels buried to be less than reported, and these were probably of a non-hazardous nature. Opinion exists that questions whether the barrels were actually disposed of at this site. Disposal took place under a different owner, Capital Cities Communication, Inc.. The wood yard is presently covered with 80,000 cords of pulpwood and access to the site is limited. No soil borings have been taken at this time and exact location of alleged hazardous materials in not known.

From interviews, there is no question that barrels were taken to the site for disposal. A question remains as to what in these barrels contained. During the time period when disposal took place many hazardous substances were being placed under regulatory controls including PCB's and biocides containing mercury. If the materials buried were indeed hazardous there is a good chance that they may have or will contaminate the groundwater and surface water in the Park Falls area.

PREPARED BY: Steve Palzkill
P.O. Box 397
Cumberland, WI 54829
(715) 822-3590
June 28, 1989

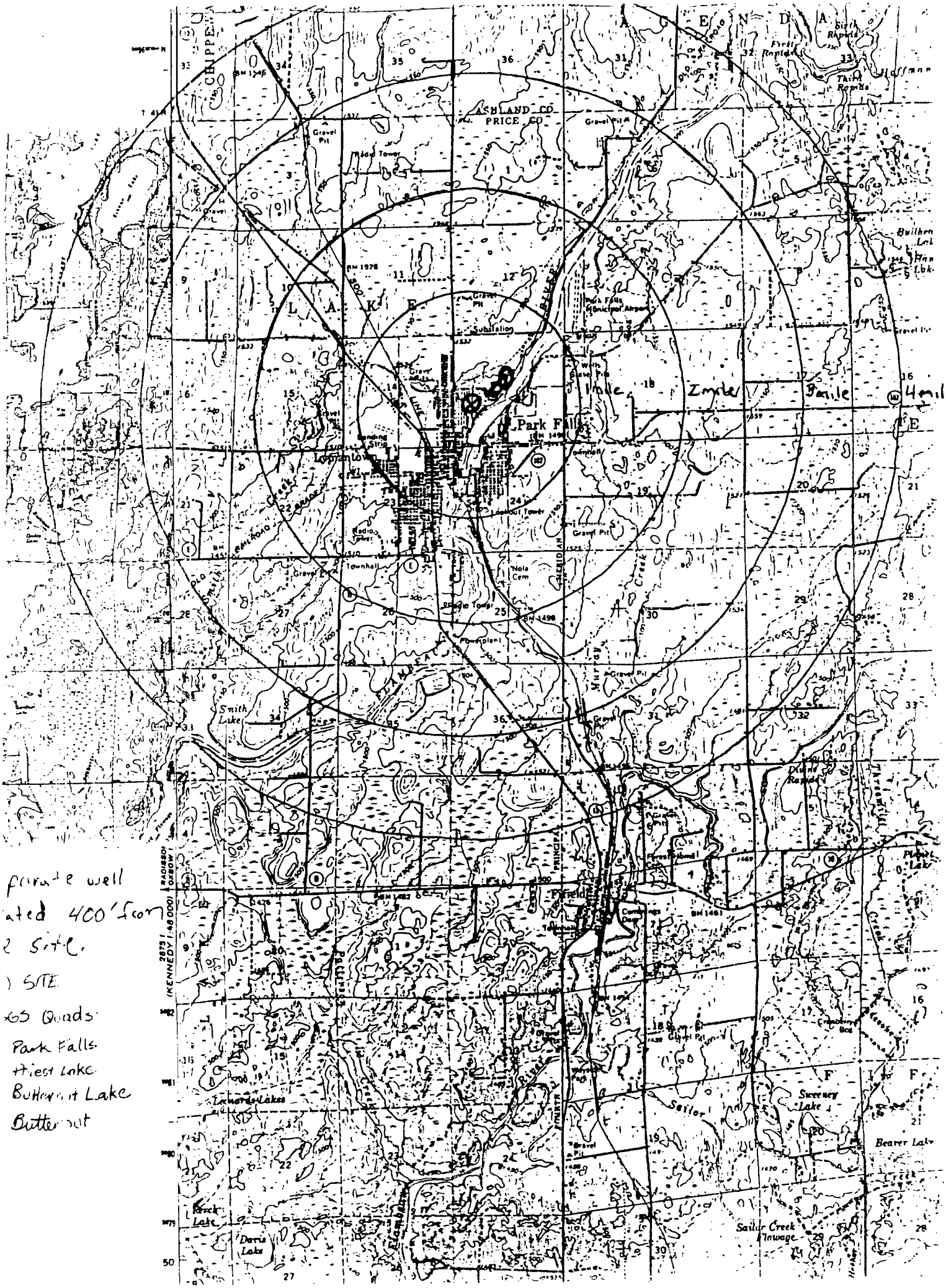
Dredge spoil from [illegible] River, mile from site, September 22, 1988.

TABLE 2

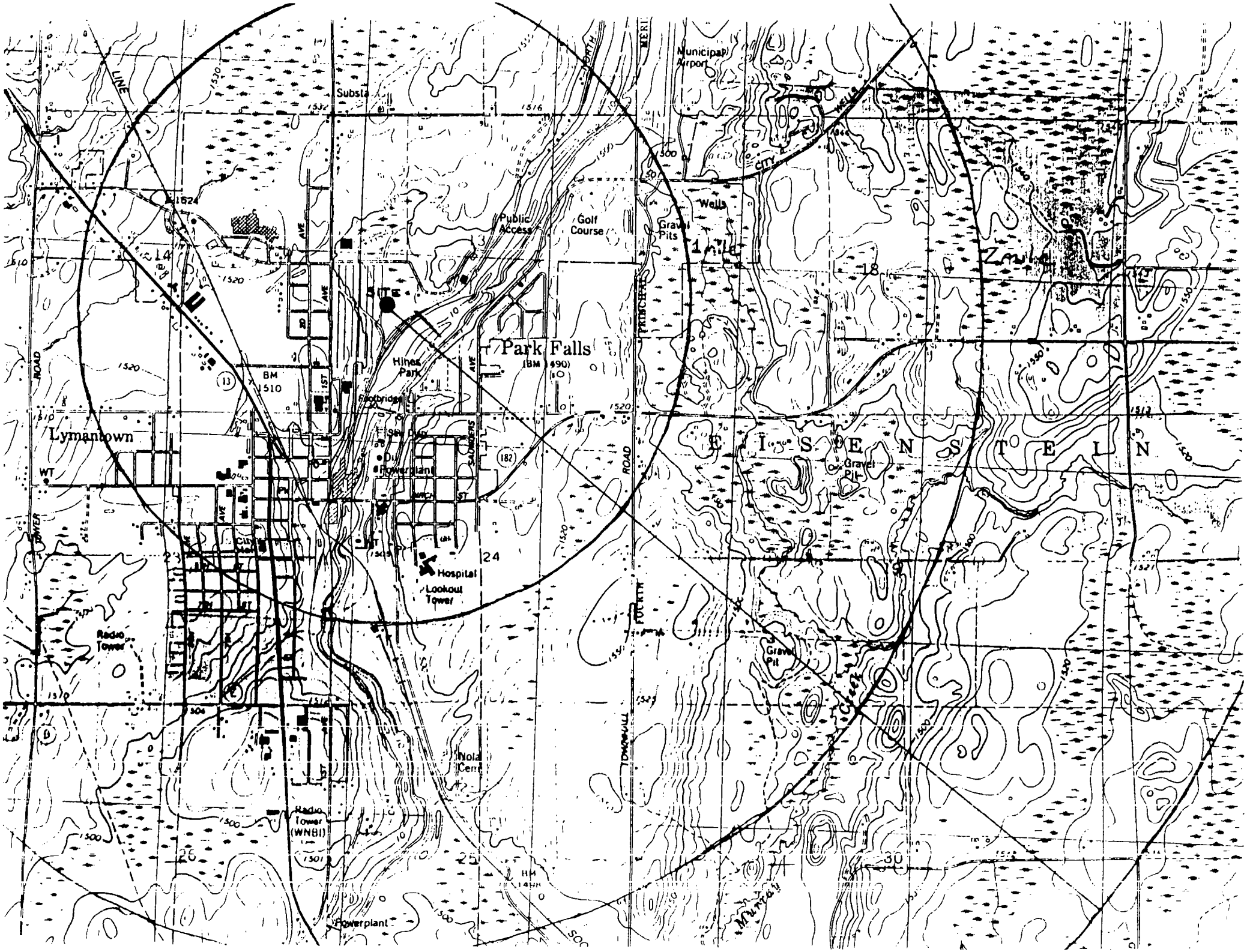
Chemical Characteristics- Results of analysis

Parameter	Total Concentration (mg/kg)(1)	EP-Toxicity (mg/l)	Maximum Limit (mg/l)
Cadmium	0.78	0.017	1.0
Chromium	39.2	<0.008	5.0
Copper	81.2	<0.011	NA(2)
Iron	26,740	0.112	NA
Lead	35.2	0.056	5.0
Manganese	8,350	6.32	NA
Mercury	0.224	unavailable	0.2
Arsenic	3.26	unavailable	5.0
Selenium	0.20	unavailable	1.0
pH	6.94	------	---
% Residue	90.4	------	---
PCB	4.96	------	---

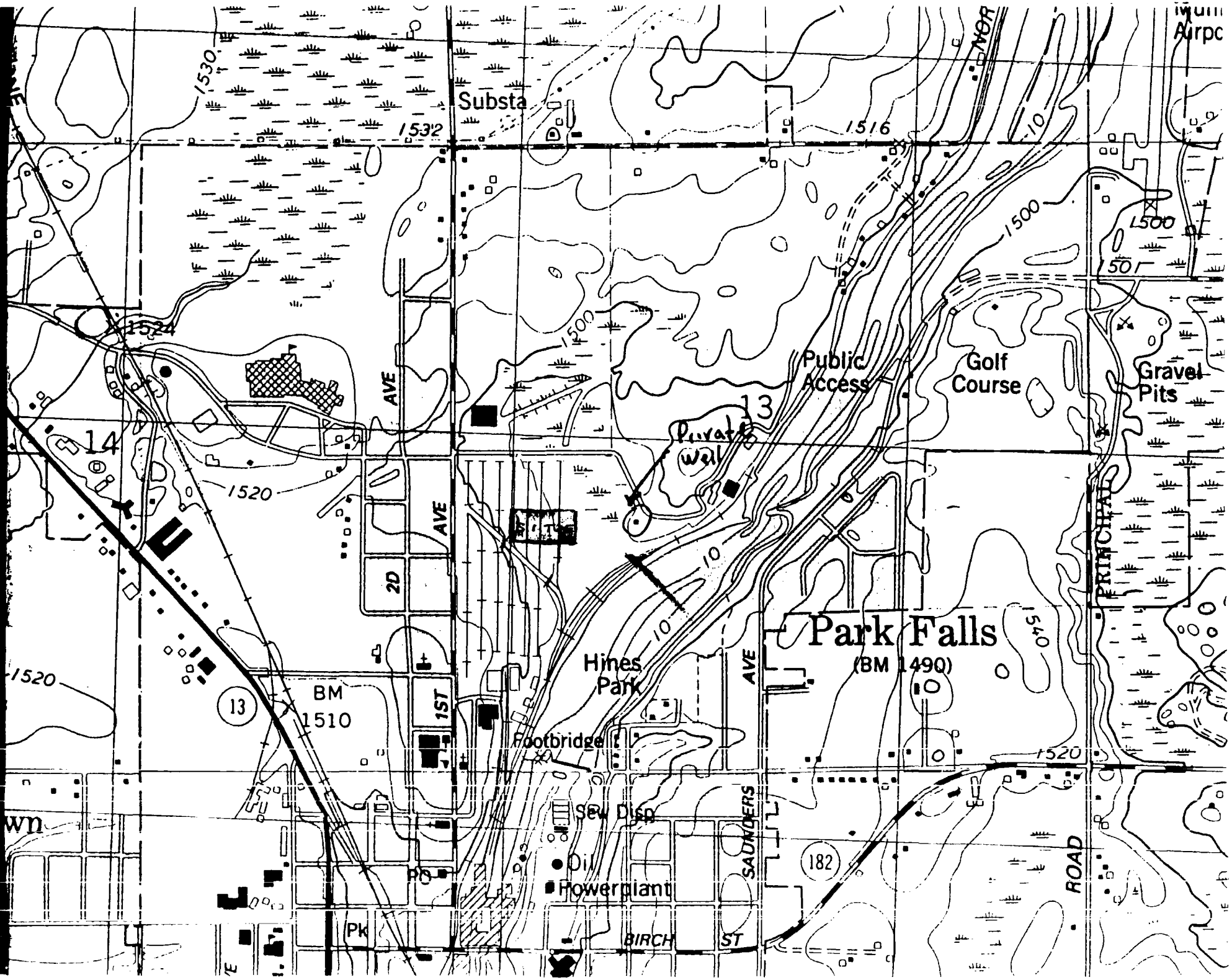
NOTES:
1) Total metal values expressed on a dry wet basis
2) NA= not applicable



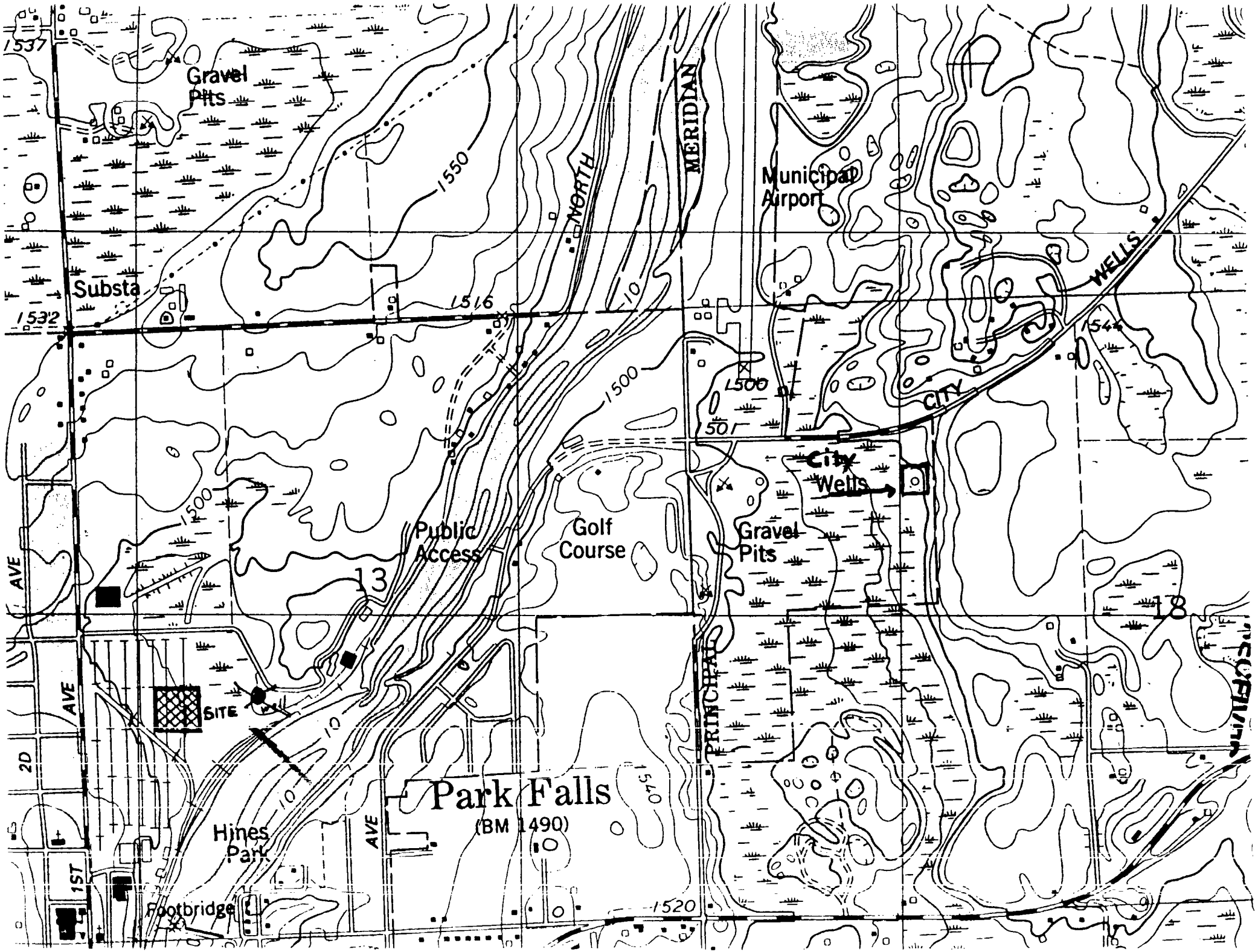
private well
ated 400' from
e site.
) SITE
65 Quads
Park Falls
Thiest Lake
Butternut Lake
Butternut



Municipal Airport
Substa
Public Access
Golf Course
Gravel Pits
Wells
SITE
Park Falls
(BM 1490)
Hines Park
Footbridge
Lymantown
Powerplant
Hospital
Lookout Tower
Radio Tower
Radio Tower (WNBI)
Nola Cem
Powerplant
Gravel Pit
Gravel Pit
E I S E N S T E I N
Zeuta
Creek
Murray
ROAD
LINE
NORTH
PRINCIPAL
FOURTH
TOWNHALL
SAUNDERS
AVE
1ST
ST
BM 1510
BM 1498



Substa
1530
1532
1516
1500
1524
1520
14
13
Private Well
Public Access
Golf Course
Gravel Pits
PRINCIPAL
ROAD
Park Falls
(BM 1490)
1540
Hines Park
Footbridge
Sew Disp
Oil
Powerplant
BM 1510
1ST
2D
AVE
SAUNDERS
AVE
BIRCH
ST
182
Pk
PO



1537
Gravel Pits
1550
NORTH
MERIDIAN
Municipal Airport
Substa
1532
1516
10
WELLS
1544
1500
1500
CITY
1501
City Wells
1500
Public Access
Golf Course
Gravel Pits
13
18
AVE
AVE
SITE
10
PRINCIPAL
2D
Park Falls
(BM 1490)
1540
Hines Park
AVE
1ST
Footbridge
1520

APPENDIX C

Historical Sanborn Fire Insurance Maps
(1909, 1917, 1929, 1939, 1951)

Environmental Data Resources, Inc.

"Linking Technology with Tradition"

Sanborn® Map Report

Ship to: William Schultz
Wisconsin Dept. Nat. Resources
107 Sutliff Avenue
Rhinelander, WI 54501

Order Date: 1/4/2002 **Completion Date:** 01/04/2002
Inquiry #: 719424.4S
P.O. #: NA
Site Name: Flambeau Paper Wood Yard
Address: 200 N. First Ave
City/State: Park Falls, WI 54552
Cross Streets:

Based on client-supplied information, fire insurance maps for the following years were identified

1909 - 1 - map
1917 - 2 - maps
1929 - 2 - maps
1939 - 2 - maps
1951 - 2 - maps

Total Maps: 9

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Electronic Sanborn Map Images
USER'S GUIDE

Thank you for your interest in electronic Sanborn Map images. The following are guidelines for accessing the images and for transferring them to your system. If you have any questions about the use of electronic Sanborn Map images, contact your EDR Account Executive at 1-800-352-0050.

Organization of Electronic Sanborn Image File

- First Page — Sanborn Map Report, listing years of coverage
- Second Page — Electronic Sanborn Map Images USER'S GUIDE
- Third Page — Oldest Sanborn Map Image
- Last Page — Most recent Sanborn Map Image

Navigating the Electronic Sanborn Image File

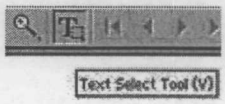
- Open file on screen.
- Identify TP (Target Property) on the most recent map.
- Find TP on older printed images.
- To view the image more clearly, zoom to 250%.
  - 200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.
  - Viewing above 400% will tend to pixelate the display.
- Zooming in on an image:
  - Click on the % in the lower left hand corner and type in ____%.
  - Use the magnifying tool and drag a box around the TP area.

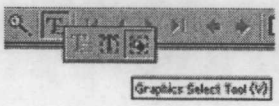
Printing a Sanborn Map from the Electronic File

- EDR recommends printing all images at 300 dpi (300 dpi prints faster than 600 dpi).
- To print only the TP area, cut and paste the area from Adobe Acrobat to your word processor.

  For Adobe Acrobat Version 3
  - Go to the Menu Bar.
  - Highlight 'Tools'.
  - Highlight 'Select Graphics'.
  - Draw a box around the area of interest.
  - Go to the Menu Bar.
  - Highlight 'Edit'.
  - Highlight 'Copy'.
  - Go to a word processor such as Microsoft Word and paste. Print from the word processor.

  For Adobe Acrobat Version 4
  - Go to the Menu Bar.
  - Press and hold the 'T' button.
  - Choose the Graphics Select Tool.
  - Draw a box around the area of interest.
  - Go to the Menu Bar.
  - Highlight 'Edit'.
  - Highlight 'Copy'.
  - Go to a word processor such as Microsoft Word and paste. Print from the word processor.





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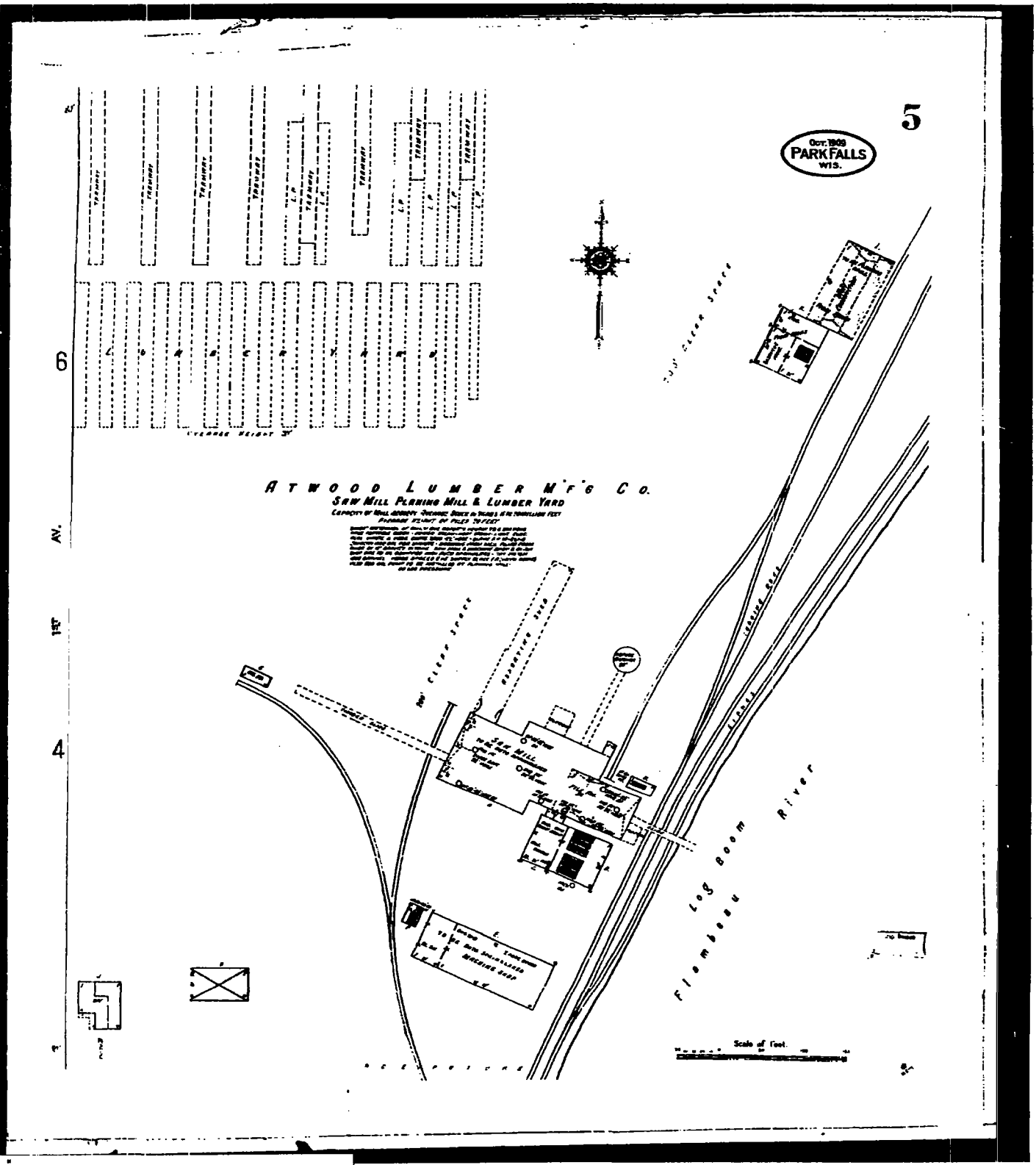
- Images are grouped into one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as 1 of 3, 2 of 3, etc. including all available map years.
- Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.



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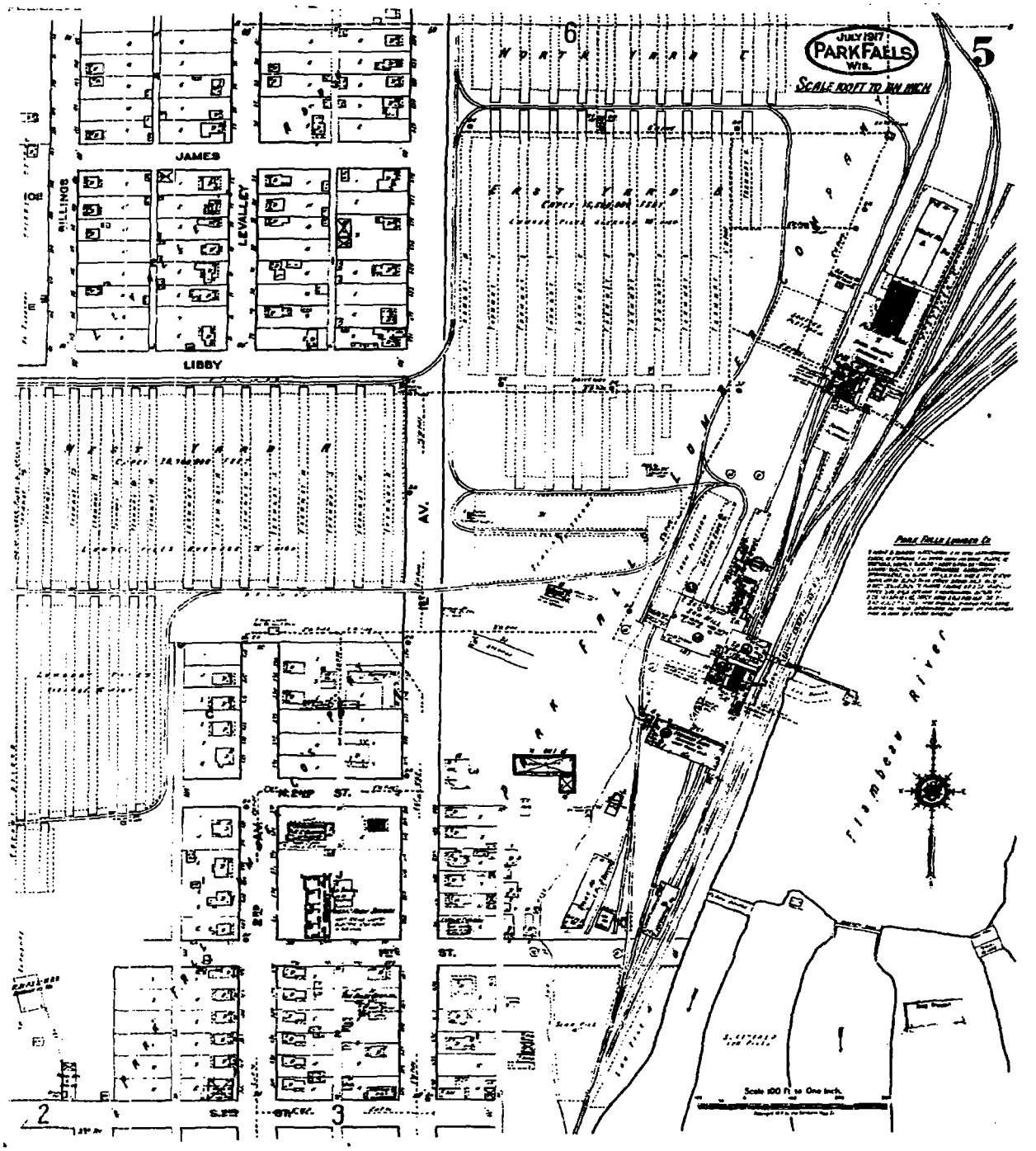

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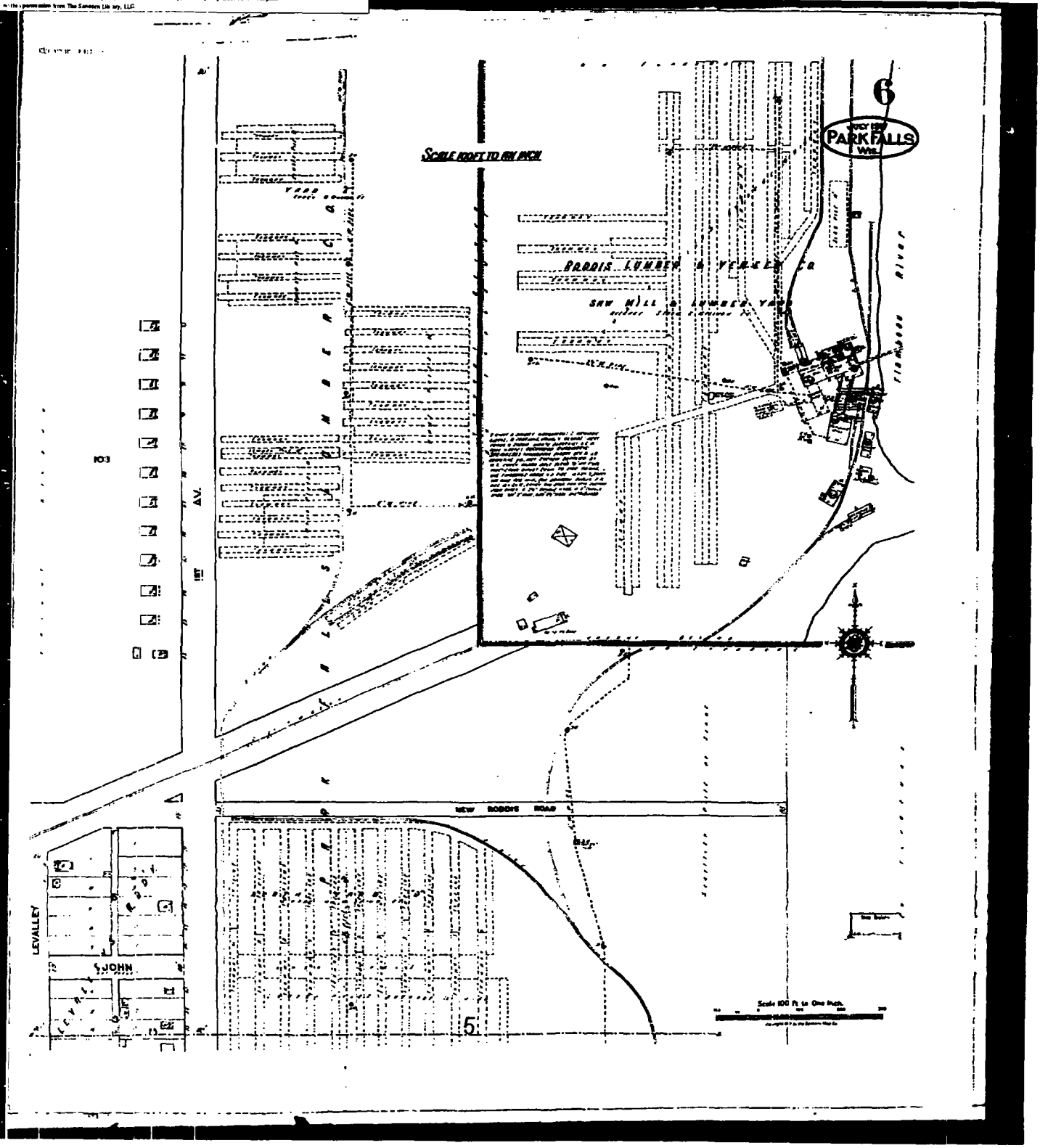

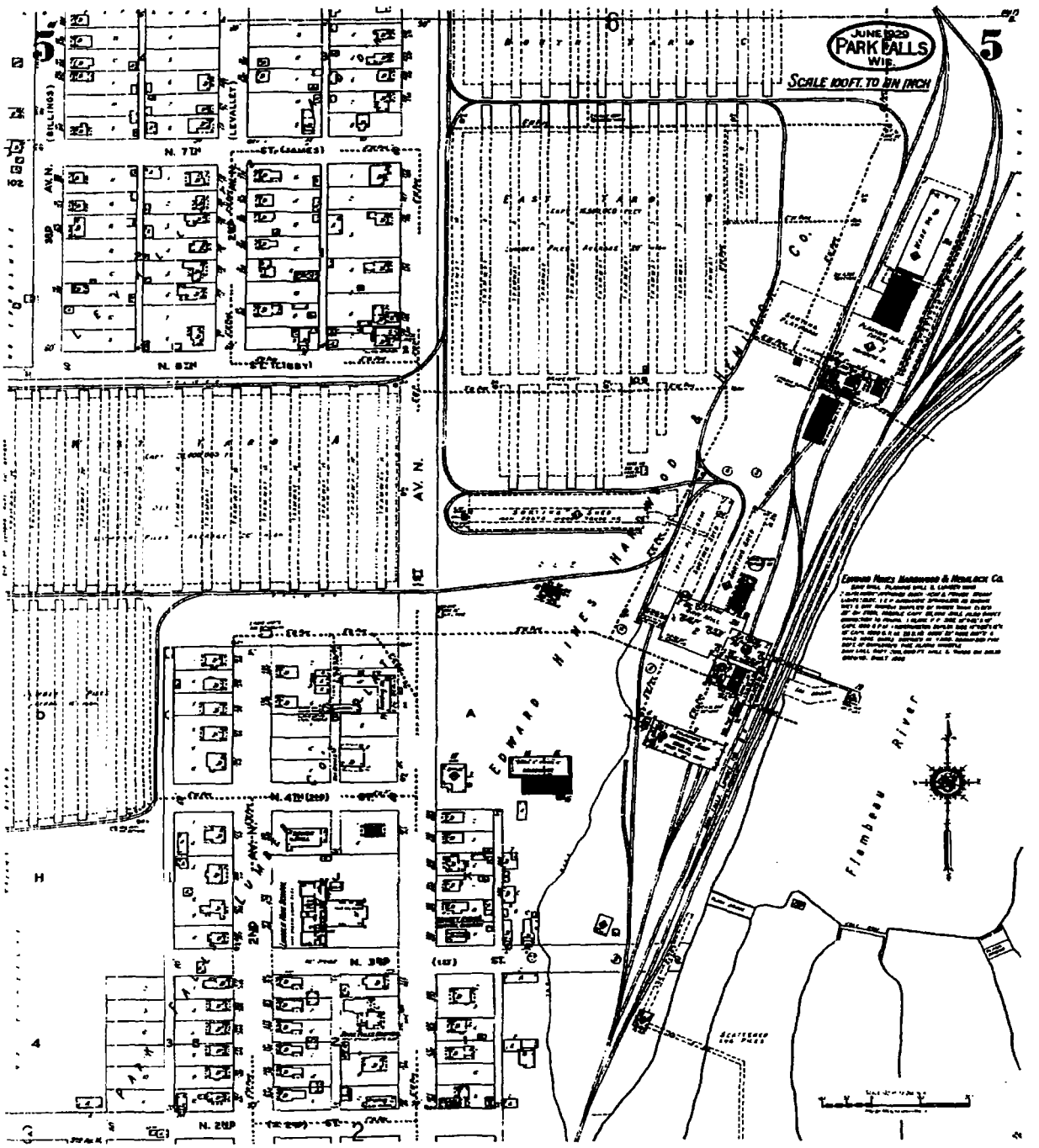

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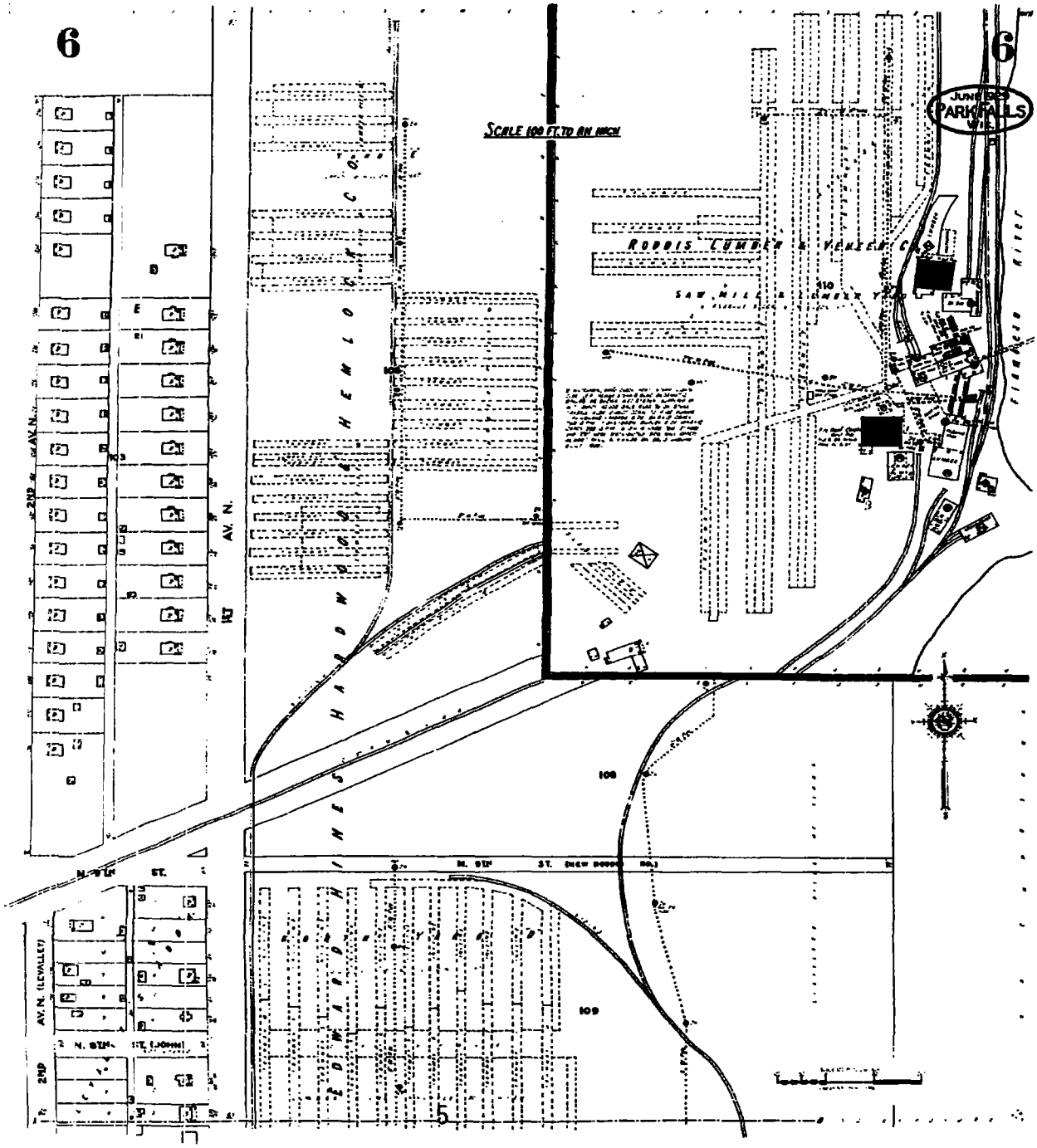

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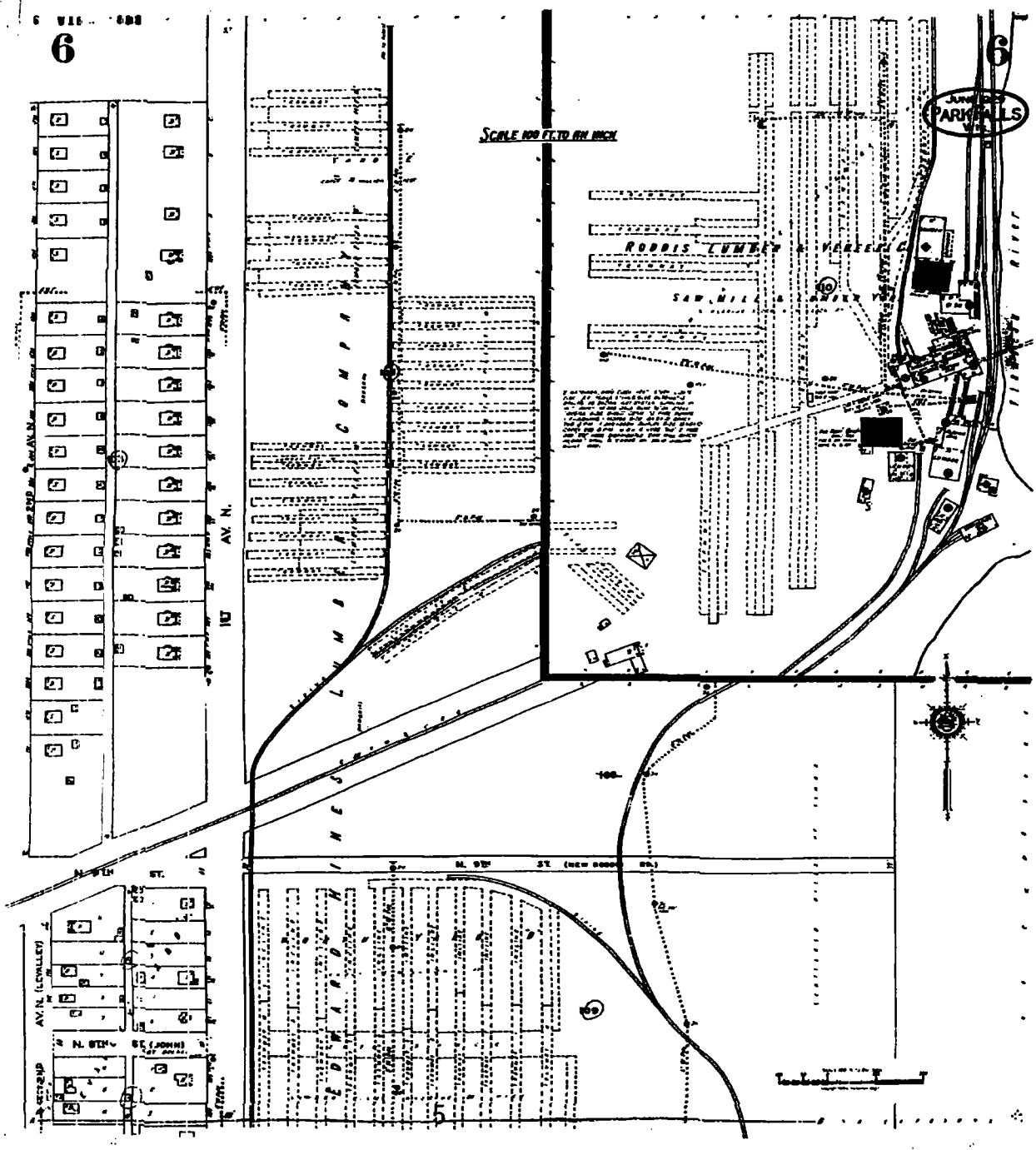

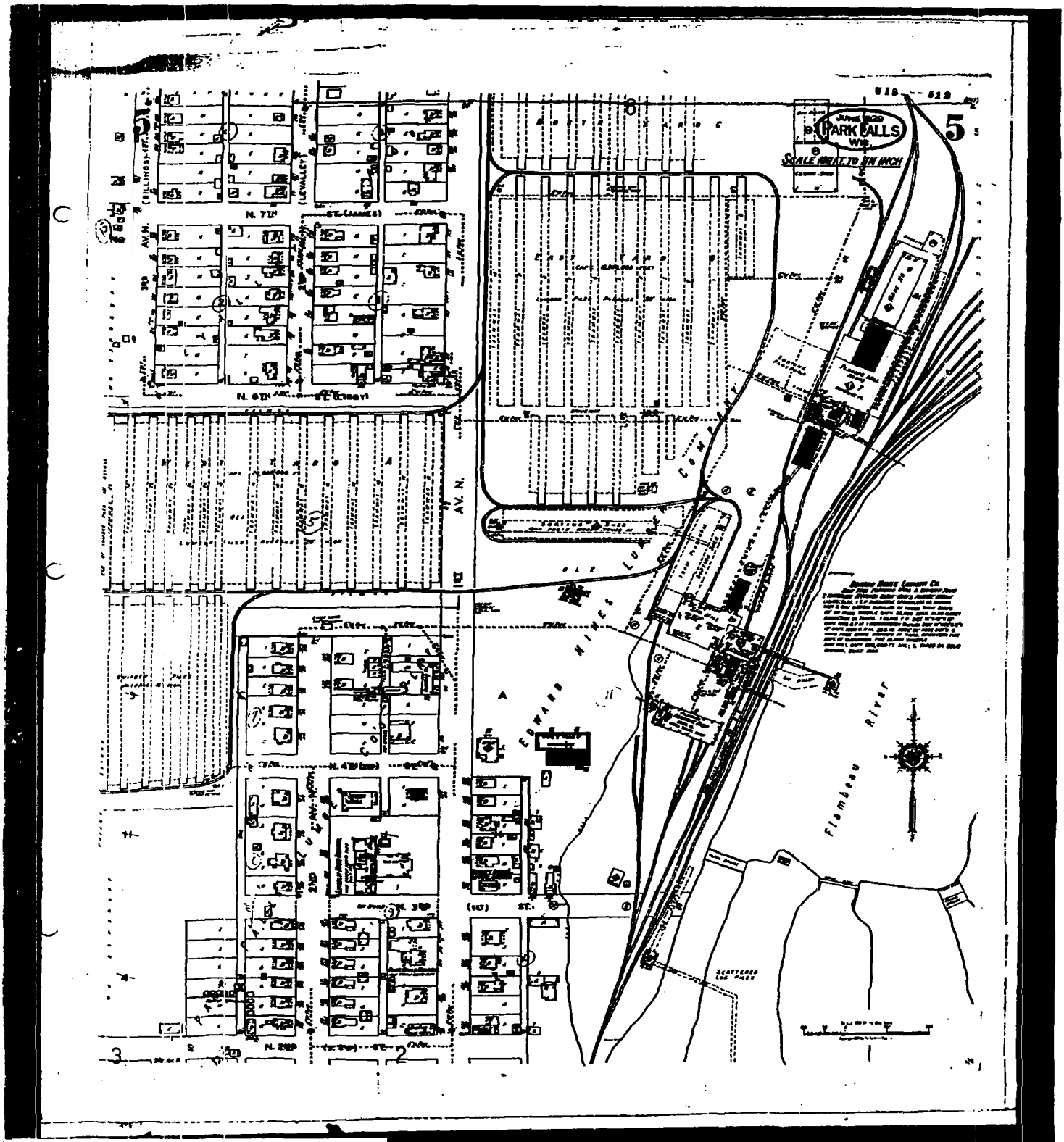

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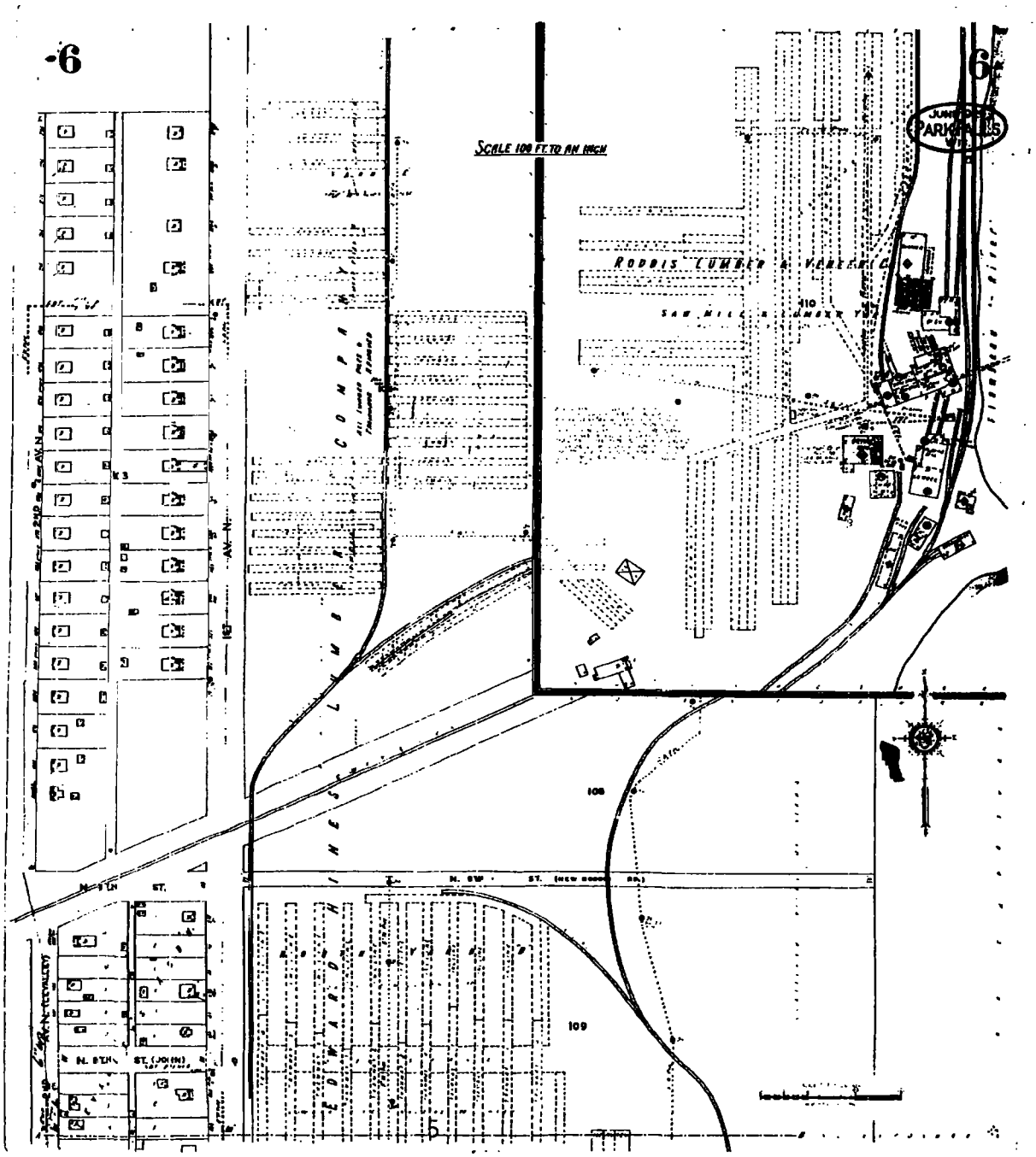

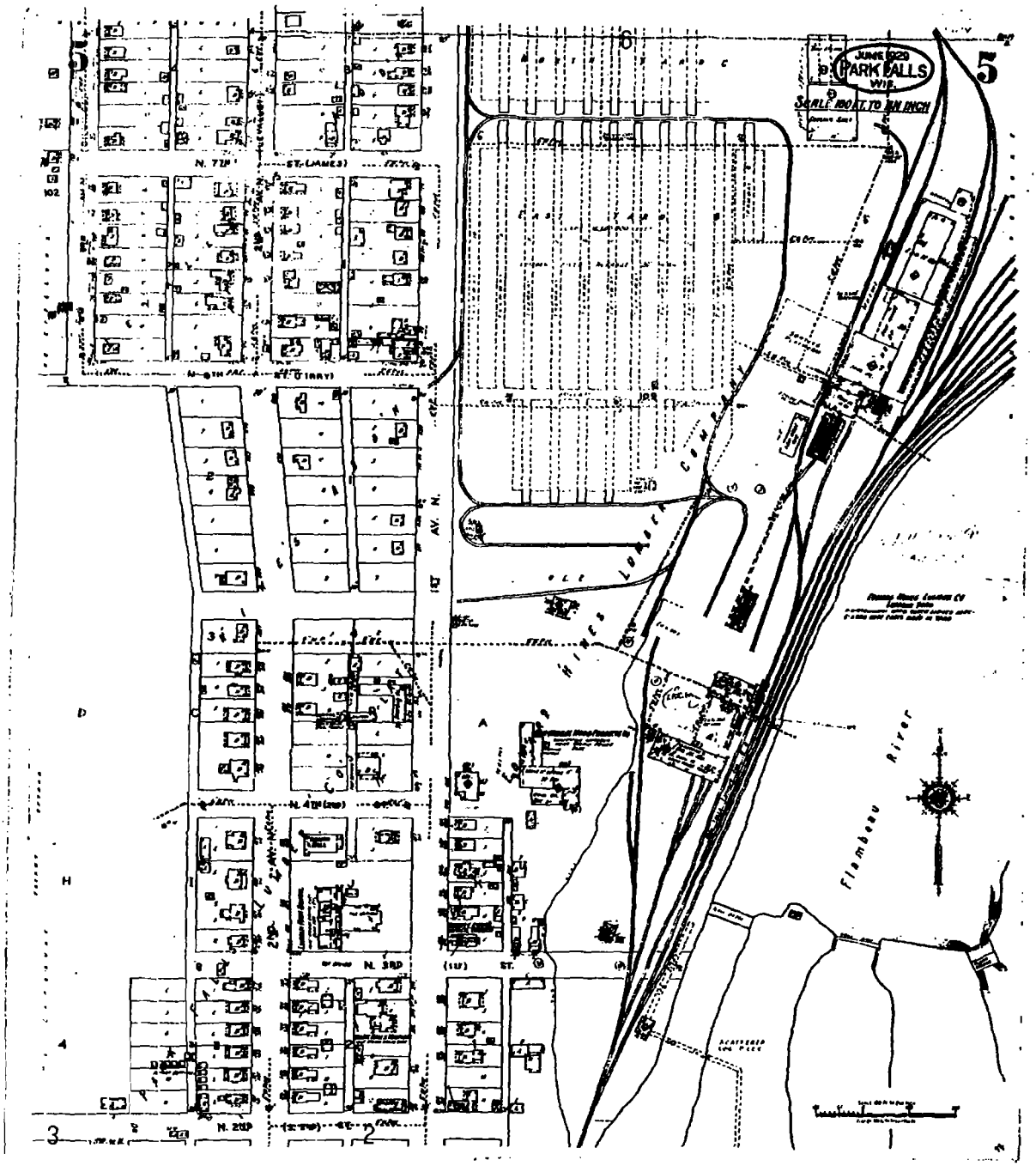

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APPENDIX D

Sulfite Liquor Analytical Results

RECEIVED
APR - 5 1999
TECHNICAL SUPPORT SECTION
WASTE MANAGEMENT BUREAU

work copy

April 2, 1999

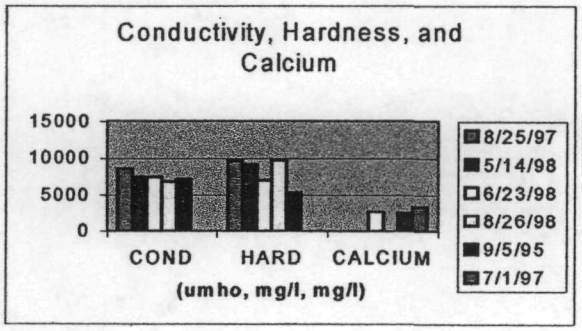
Mr. Robert Grefe
Bureau of Solid Waste Management
Department of Natural Resources
P.O. Box 7921
101 South Webster Road
Madison, Wisconsin 53707-7921

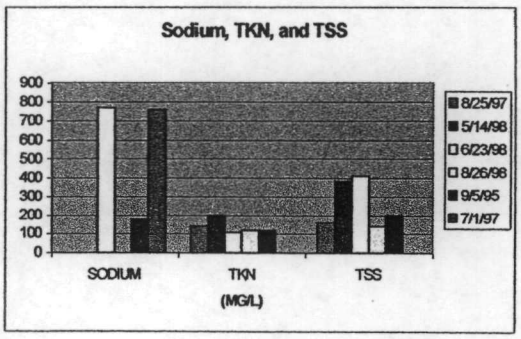
Subject: Spent Sulfite Liquor Landspreading Plan Modification Request

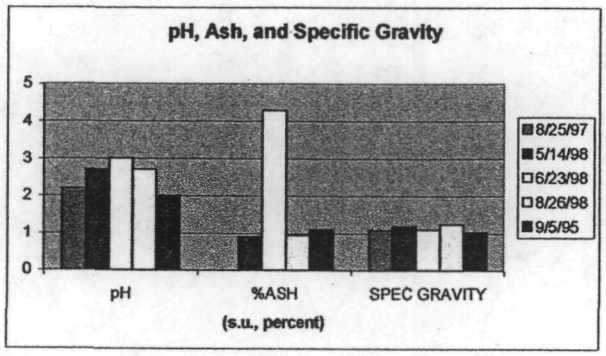
Dear Mr. Grefe:

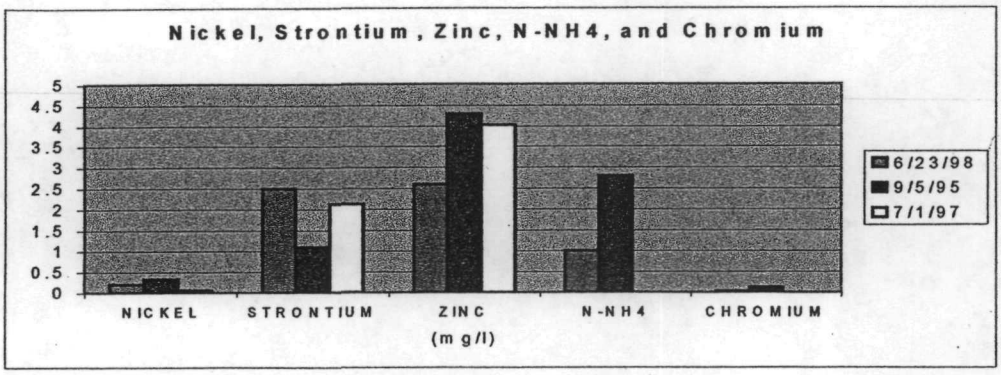
Fraser Papers is requesting a five-year extension of our spent sulfite liquor landspreading plan. No process or application changes have been made since our previous plan of operation that would have changed the sulfite liquor properties.

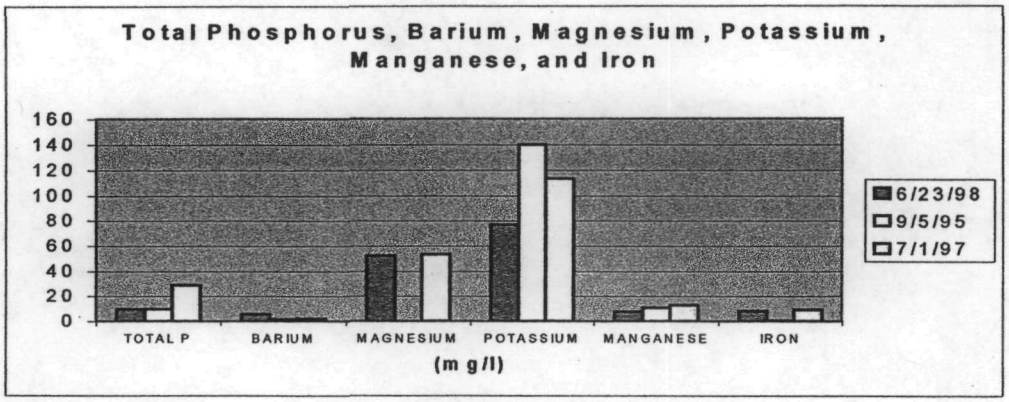
A change in our sampling requirements is justified because only a limited quantity of spent sulfite liquor is spread, the liquor is solely spread on our property, and the liquor properties cannot change without a major change in our pulping process. Furthermore, past testing has shown that the metal concentrations have not varied, the bi-monthly sampling list concentrations have not varied, and semi-volatile concentrations were non-detectable in 1997&1998. The semi-volatile data is enclosed for your reference. The following charts show past testing concentrations:











We propose no sampling unless there is a change in our pulping process that would change the chemistry of the liquor.

Please call me at (715) 762-5375 if you have any questions.

Sincerely,

Kristin Palecek

Kristin Palecek
Environmental Manager

Enclosure

cc: Sue Fisher, WDNR
Wally Wasko, WDNR
Jeff McCulloch, Fraser Papers

UNITED STATES FILTER CORPORATION

caser Paper, Inc.
.O. Box 340
00 First Avenue North
ark Falls, WI 54552

ttn: Kristin Schroeder

CUST NUMBER:
SAMPLED BY: Client
DATE REC'D: 07/02/97
REPORT DATE: 07/17/97
PREPARED BY: BMS
REVIEWED BY:

	Units	Reporting Limit	WEAK LIQUOR 07/01/97	Qualifiers	Date Analyzed
PA 8270					
Organic Extraction		-	-		07/08/97
Acenaphthene	µg/l	1000.0	X		07/11/97
Acenaphthylene	µg/l	1000.0	X		07/11/97
Anthracene	µg/l	1000.0	X		07/11/97
Benzo(b)fluoranthene	µg/l	1000.0	X	S1L	07/11/97
Benzo(k)fluoranthene	µg/l	1000.0	X	S1L S2L	07/11/97
Benzo(g,h,i)perylene	µg/l	1000.0	X	S1L	07/11/97
Benzo(a)pyrene	µg/l	1000.0	X	S1L S2L	07/11/97
Chrysene	µg/l	1000.0	X	S2L	07/11/97
Dibenzo(a,h)anthracene	µg/l	1000.0	X	CC	07/11/97
Benzidine	µg/l	5000.0	X	CC S1L S2L	07/11/97
Benzylbutylphthalate	µg/l	1000.0	X	S2L	07/11/97
Bis(2-Chloroethoxy)Methane	µg/l	1000.0	X		07/11/97
Bis(2-Chloroethyl)Ether	µg/l	1000.0	X		07/11/97
Bis(2-Ethylhexyl)Phthalate	µg/l	1000.0	X	S1L S2L	07/11/97
Bis(2-Chloroisopropyl)Ether	µg/l	1000.0	X		07/11/97
4-Bromophenyl Phenyl Ether	µg/l	1000.0	X		07/11/97
4-Chlorophenyl Phenyl Ether	µg/l	1000.0	X		07/11/97
4-Chloro-3-methylphenol	µg/l	1000.0	X		07/11/97
2-Chlorophenol	µg/l	1000.0	X		07/11/97
3-Chlorophenol&4-Chlorophen	µg/l	1000.0	X		07/11/97
2,4-Dinitrophenol	µg/l	5000.0	X		07/11/97
Di-n-butylphthalate	µg/l	1000.0	X	S1L S2L	07/11/97
3,3'-Dichlorobenzidine	µg/l	5000.0	X	S1L S2L	07/11/97
Diethyl Phthalate	µg/l	1000.0	X		07/11/97
Dimethyl Phthalate	µg/l	1000.0	X		07/11/97
2,4-Dinitrotoluene	µg/l	1000.0	X	DUP	07/11/97
2,6-Dinitrotoluene	µg/l	1000.0	X		07/11/97
Di-n-octylphthalate	µg/l	1000.0	X	S1L S2L	07/11/97
1,2-Diphenylhydrazine	µg/l	1000.0	X		07/11/97
Fluoranthene	µg/l	1000.0	X		07/11/97
Fluorene	µg/l	1000.0	X		07/11/97
Isophorone	µg/l	1000.0	X		07/11/97
Indeno(1,2,3-cd)pyrene	µg/l	1000.0	X	S1L	07/11/97
Nitrobenzene	µg/l	1000.0	X		07/11/97
N-Nitrosodi-n-butylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodiethylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodimethylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodiphenylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodi-n-propylamine	µg/l	1000.0	X		07/11/97
N-Nitrosopyrrolidine	µg/l	1000.0	X		07/11/97
Pentachlorobenzene	µg/l	1000.0	X		07/11/97
Phenanthrene	µg/l	1000.0	X		07/11/97
Pyrene	µg/l	1000.0	X		07/11/97
Phenol	µg/l	1000.0	X		07/11/97
1,2,4,5-Tetrachlorobenzene	µg/l	1000.0	X		07/11/97
Aniline	µg/l	1000.0	X	S1L S2L	07/11/97

Analytical No.: 9605

X = Analyzed but not detected.

S.FILTER

UNITED STATES FILTER CORPORATION

raser Paper, Inc.
.O. Box 340
)0 First Avenue North
ark Falls, WI 54552

ttn: Kristin Schroeder

CUST NUMBER:
SAMPLED BY: Client
DATE REC'D: 07/02/97
REPORT DATE: 07/17/97
PREPARED BY: BMS
REVIEWED BY:

	Units	Reporting Limit	WEAK LIQUOR 07/01/97	Qualifiers	Date Analyzed
PA 8270					
Benzo(a)anthracene	µg/l	1000.0	X		07/11/97
Benzyl Alcohol	µg/l	1000.0	X		07/11/97
2-Chloronaphthalene	µg/l	1000.0	X		07/11/97
2,4-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,3-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,5-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,4-Dimethylphenol	µg/l	1000.0	X		07/11/97
2,6-Dichlorophenol	µg/l	1000.0	X		07/11/97
1,2-Dichlorobenzene	µg/l	1000.0	X		07/11/97
3,4-Dichlorophenol	µg/l	1000.0	X		07/11/97
1,3-Dichlorobenzene	µg/l	1000.0	X		07/11/97
2,5-Dinitrophenol	µg/l	1000.0	X		07/11/97
1,4-Dichlorobenzene	µg/l	1000.0	X		07/11/97
Hexachlorobutadiene	µg/l	1000.0	X		07/11/97
Hexachloroethane	µg/l	1000.0	X		07/11/97
2-Methylnaphthalene	µg/l	1000.0	X		07/11/97
2-Methyl-4,6-Dinitrophenol	µg/l	5000.0	X		07/11/97
2-Methyl-4-chlorophenol	µg/l	1000.0	X		07/11/97
3-Methyl-6-chlorophenol	µg/l	1000.0	X		07/11/97
2-Methylphenol	µg/l	1000.0	X		07/11/97
3-, & 4-Methylphenol	µg/l	1000.0	X		07/11/97
Naphthalene	µg/l	1000.0	X		07/11/97
2-Nitrophenol	µg/l	1000.0	X		07/11/97
4-Nitrophenol	µg/l	5000.0	X		07/11/97
Pentachlorophenol	µg/l	1000.0	X		07/11/97
1,2,4,-Trichlorobenzene	µg/l	1000.0	X		07/11/97
2,3,4,6-Tetrachlorophenol	µg/l	1000.0	X		07/11/97
2,4,6-Trichlorophenol	µg/l	1000.0	X		07/11/97
2,4,5-Trichlorophenol	µg/l	1000.0	X	S1L S2L	07/11/97
Hexachlorobenzene	µg/l	1000.0	X		07/11/97
Hexachlorocyclopentadiene	µg/l	1000.0	X		07/11/97
Benzoic Acid	µg/l	5000.0	X		07/11/97
4-Chloroaniline	µg/l	1000.0	X	S1L S2L	07/11/97
2-Nitroaniline	µg/l	5000.0	X	S2L	07/11/97
3-Nitroaniline	µg/l	5000.0	X	S1L S2L DUP	07/11/97
Dibenzofuran	µg/l	1000.0	X		07/11/97
4-Nitroaniline	µg/l	5000.0	X	S1L S2L	07/11/97

Analytical No.: 9605

X = Analyzed but not detected.

10 Data

ANALYTICAL RESULTS: Semi-Volatile Organic Compounds by EPA 8270B

Customer: Fraser Paper
Project Description: Roadbinder
Northern Lake Service Project Number: 43230

Analyte Name	177407 Roadbinder ug/L	DILUTION FACTOR	LOD ug/L	LOQ ug/L
Acenaphthene	ND	12	16	54
Acenaphthylene	ND	12	16	54
Anthracene	ND	12	14	45
Benzidine	ND	12	5.9	20
Benzo[a]anthracene	ND	12	9.1	25
Benzo[a]pyrene	ND	12	15	48
Benzo[b]fluoranthene	ND	12	7.7	25
Benzo[g,h,i]perylene	ND	12	14	47
Benzo[k]fluoranthene	ND	12	16	53
Bis(2-chloroethyl)ether	ND	12	19	65
4-Bromophenyl-phenylether	ND	12	12	40
Butylbenzylphthalate	ND	12	13	42
4-Chloro-3-methylphenol	ND	12	7.4	24
2-Chloronaphthalene	ND	12	15	51
2-Chlorophenol	ND	12	20	66
4-Chlorophenyl-phenylether	ND	12	13	44
Chrysene	ND	12	8.2	26
Di-n-butylphthalate	ND	12	20	66
Di-n-octylphthalate	ND	12	5.3	18
Dibenzo[a,h]anthracene	ND	12	8.3	26
Dibenzofuran	ND	12	14	48
1,2-Dichlorobenzene	ND	12	22	72
1,4-Dichlorobenzene	ND	12	23	75
1,3-Dichlorobenzene	ND	12	23	78
3,3'-Dichlorobenzidine	ND	12	10	35
2,6-Dichlorophenol	ND	12	20	66
2,4-Dichlorophenol	ND	12	11	35
Diethylphthalate	ND	12	17	56
2,4-Dimethylphenol	ND	12	37	120
Dimethylphthalate	ND	12	16	52
4,6-Dinitro-2-methylphenol	ND	12	13	45
2,4-Dinitrophenol	ND	12	290	1000
2,4-Dinitrotoluene	ND	12	8.8	28
2,6-Dinitrotoluene	ND	12	13	44
1,2-Diphenylhydrazine	ND	12	6.7	21
Fluoranthene	ND	12	8.0	26
Fluorene	ND	12	13	44
Hexachlorobenzene	ND	12	8.6	27
Hexachlorobutadiene	ND	12	16	55
Hexachlorocyclopentadiene	ND	12	14	45
Hexachloroethane	ND	12	20	67
Indeno[1,2,3-cd]pyrene	ND	12	8.3	26
Isophorone	ND	12	15	52
2-Methylnaphthalene	ND	12	17	58
2-Methylphenol	ND	12	16	52
3 & 4-Methyphenol	ND	12	18	60
n-Nitroso-di-n-propylamine	ND	12	22	72
n-Nitrosodi-n-butylamine	ND	12	17	55
n-Nitrosodimethylamine	ND	12	19	63
Naphthalene	ND	12	18	62
3-Nitroaniline	ND	12	11	37
2-Nitroaniline	ND	12	12	41
4-Nitroaniline	ND	12	14	47
Nitrobenzene	ND	12	18	58
2-Nitrophenol	ND	12	18	59

ANALYTICAL RESULTS: Semi-Volatile Organic Compounds by EPA 8270B

Customer: Fraser Paper
Project Description: Roadbinder
Northern Lake Service Project Number: 43230

Analyte Name	177407 Roadbinder ug/L	DILUTION FACTOR	LOD ug/L	LOQ ug/L
4-Nitrophenol	ND	12	9.1	31
Pentachlorobenzene	ND	12	15	49
Pentachlorophenol	ND	12	12	36
Phenanthrene	ND	12	7.8	25
Phenol	ND	12	9.1	30
Pyrene	ND	12	15	52
1,2,4,5-Tetrachlorobenzene	ND	12	15	51
2,3,4,6-Tetrachlorophenol	ND	12	8.4	28
1,2,4-Trichlorobenzene	ND	12	16	53
2,4,6-Trichlorophenol	ND	12	12	39
2,4,5-Trichlorophenol	ND	12	8.3	26
Bis(2-chloroethoxy)methane	ND	12	14	46
Bis(2-ethylhexyl)phthalate	ND	12	18	60
Bis(2-chloroisopropyl)ether	ND	12	22	73
n-Nitrosodiethylamine	ND	12	19	63
n-Nitrosodiphenylamine	ND	12	11	35
n-Nitrosopyrrolidine	ND	12	20	66

Surrogate Recovery on 2-Fluorophenol = 35.6 %
Surrogate Recovery on Phenol-d5 = 23.3 %
Surrogate Recovery on Nitrobenzene-d5 = 54.8 %
Surrogate Recovery on 2-Fluorobiphenyl = 50.8 %
Surrogate Recovery on 2,4,6-Tribromophenol = 47.8 %
Surrogate Recovery on Terphenyl-d14 = 35.0 %

Fraser Papers Inc.
Park Falls Operations
200 First Avenue North
Park Falls WI 54552
715 762 3231 Tel
715 762 5299 Fax

RECEIVED FEB 12 1999 BUREAU OF REMEDIATION & REDEVELOPMENT

FID 851009390

February 10, 1999

Bureau of Solid Waste Management
Department of Natural Resources
P.O. Box 7921
101 South Webster Road
Madison, Wisconsin 53707-7921

Fraser Papers RECEIVED FEB 12 1999 TECHNICAL SUPPORT SECTION WASTE MANAGEMENT BUREAU

Subject: Spent Sulfite Liquor Landspreading Plan Approval Annual Report – 1998

Ladies and Gentlemen:

As required by the Spent Sulfite Liquor Landspreading Plan Approval issued by the DNR on June 10, 1994, this letter is provided to satisfy the annual reporting requirement contained in section 10 of that approval.

Because of the continued success of our lignin business, only minimal amounts of spent sulfite liquor were spread for dust suppression. Spent sulfite liquor was spread as follows in 1998:

Date	Location	Quantity(gals)
4/28	Fraser Papers woodyard	5000
4/30	Fraser Papers parking lots	5400
5/2	Fraser Papers parking lots	5400
	Fraser Papers woodyard	5400
5/9	Fraser Papers landfill	10200
5/21	Fraser Papers woodyard	2550
	Fraser Papers parking lots	2550
5/22	Fraser Papers parking lots	5100
5/27	Fraser Papers woodyard	9000
7/13	Fraser Papers parking lots	5100
	Fraser Papers woodyard	5100
7/16	Fraser Papers parking lots	1100
	Fraser Papers woodyard	9100
7/24	Fraser Papers landfill	10200
	Fraser Papers woodyard	1000
7/31	Fraser Papers treatment plant	1000
	Fraser Papers landfill	4100

The results of spent sulfite liquor testing conducted on 5/14, 6/23, and 8/26 for the required parameters are attached. No changes were made to the landspreading program, the sulfite pulping process, sulfite liquor processing, or recovery.

Please call me at (715) 762-5375 if you have any questions.

Sincerely,

Kristin Palecek

Kristin Palecek
Environmental Manager

Enclosure: Analytical data

cc: Jeff McCulloch, Fraser Papers

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-3060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

NLS PROJECT# 41057
NLS CUST# 11756

Client: Fraser Paper
Attn: K. Schroeder
200 First Avenue No.
P.O. Box 340
Park Falls, WI 54552

Project Description: Roadbinder Testing

Sample ID: Roadbinder NLS#: 168067
Ref. Line 1 of COC 31266 Description: Roadbinder
Collected: 05/14/98 Received: 05/15/98 Reported: 05/27/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Alkalinity, tot. as CaCO3 (unfiltered)	ND	mg/L	2.1	7.4	EPA 310.1	05/26/98	721026460
BOD-5 day	32000	mg/L	2.0		SM 5210	05/15/98	721026460
C.O.D. (unfiltered)	160000	mg/L	500	1800	EPA 410.1	05/18/98	721026460
Conductivity, lab	7400	umho@25C	1.0		EPA 120.1	05/15/98	721026460
Hardness, tot. as CaCO3 (unfiltered)	9200	mg/L	89	320	EPA 130.2	05/22/98	721026460
Nitrogen, ammonia as N (unfiltered)	2.6	mg/L	0.040	0.14	EPA 350.1	05/26/98	721026460
Nitrogen, Kjeldahl as N (unfiltered)	200	mg/L	11	44	EPA 351.2	05/26/98	721026460
pH, lab	2.7	s.u.	1.0		EPA 150.1	05/15/98	721026460
Solids, total	140000	mg/L	2.0		EPA 160.3	05/20/98	721026460
Solids, tot. susp. (TSS)	380	mg/L	1.0		EPA 160.2	05/20/98	721026460
Percent Ash	0.90	%	0.010		ASTM D5412	05/22/98	241249360
Specific gravity	1.19				SM 2710F	05/20/98	721026460

Values in brackets represent results greater than the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection
DWB = Dry Weight Basis
LOQ = Limit of Quantitation
NA = Not Applicable
ND = Not Detected
%DWB = (mg/kg DWB)/10000

Reviewed by: Thomas R Rueb

Authorized by:
R. T. Krueger
Laboratory Manager

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-5060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

NLS PROJECT# 41903
NLS CUST# 11756

Client: Fraser Paper
Attn: K. Schroeder
200 First Avenue No.
P.O. Box 340
Park Falls, WI 54552

Project Description: Roadbinder + Sludge

Sample ID: Roadbinder NLS#: 171701
Ref. Line 1 of COC 31862 Description: Roadbinder
Collected: 06/23/98 Received: 06/24/98 Reported: 07/17/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Alkalinity, tot. as CaCO3 (unfiltered)	ND	mg/L	2.1	7.4	EPA 310.1	06/26/98	721026460
Arsenic, tot. as As by furnace	ND	mg/L	130	450	EPA 206.2	07/08/98	721026460
Barium, tot. as Ba	5.8	mg/L	0.024	0.024	EPA 200.7	07/02/98	721026460
BOD-5 day	17000	mg/L	2.0		SM 5210	06/24/98	721026460
Cadmium, tot. as Cd	< 0.017 >	mg/L	0.011	0.041	EPA 200.7	07/07/98	721026460
Calcium, tot. as Ca	2700	mg/L	15	15	EPA 200.7	07/16/98	721026460
C.O.D. (unfiltered)	130000	mg/L	500	1800	EPA 410.1	07/07/98	721026460
Chloride, as Cl (unfiltered)	820	mg/L	100	380	EPA 325.2	06/29/98	721026460
Chromium, tot. as Cr	< 0.029 >	mg/L	0.027	0.095	EPA 200.7	07/07/98	721026460
Conductivity, lab	7400	umho@25C	1.0		EPA 120.1	06/26/98	721026460
Copper, tot. as Cu	0.27	mg/L	0.010	0.038	EPA 200.7	07/07/98	721026460
Hardness, tot. as CaCO3 (calc/unfilt)	7000	mg/L	95	95	EPA 200.7	07/15/98	721026460
Iron, tot. as Fe	8.2	mg/L	0.053	0.18	EPA 200.7	07/14/98	721026460
Lead, tot. as Pb	ND	mg/L	0.19	0.69	EPA 200.7	07/01/98	721026460
Magnesium, tot. as Mg	52	mg/L	1.5	1.5	EPA 200.7	07/14/98	721026460
Manganese, tot. as Mn	8.0	mg/L	0.0082	0.027	EPA 200.7	07/09/98	721026460
Nickel, tot. as Ni	0.21	mg/L	0.053	0.19	EPA 200.7	07/07/98	721026460
Nitrogen, ammonia as N (unfiltered)	1.0	mg/L	0.081	0.29	EPA 350.1	07/06/98	721026460
Nitrogen, Kjeldahl as N (unfiltered)	110	mg/L	22	87	EPA 351.2	06/29/98	721026460
pH, lab	3.0	s.u.	1.0		EPA 150.1	06/24/98	721026460
Phosphorus, tot. as P	10	mg/L	0.25	0.25	EPA 365.2	06/30/98	721026460
Potassium, tot. as K	77	mg/L	0.72	2.7	EPA 200.7	07/08/98	721026460
Selenium, tot. as Se by furnace	ND	mg/L	160	530	EPA 270.2	07/10/98	721026460
Silver, tot. as Ag	ND	mg/L	0.072	0.26	EPA 200.7	06/26/98	721026460
Sodium, tot. as Na	770	mg/L	0.58	2.1	EPA 200.7	07/08/98	721026460
Solids, total on solids	8.6	%	0.10		ASTM D2216	06/26/98	721026460
Solids, tot. susp. (TSS)	410	mg/L	1.0		EPA 160.2	06/26/98	721026460
Percent Ash	4.3	%	0.10		ASTM D5412	07/06/98	NA
Strontium, tot. as Sr	2.5	mg/L	0.0015	0.053	EPA 200.7	07/10/98	721026460

Sample# 171701 results continued on next page.

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-3060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

NLS PROJECT# 41903
NLS CUST# 11756

Client: Fraser Paper
Attn: K. Schroeder
200 First Avenue No.
P.O. Box 340
Park Falls, WI 54552

Project Description: Roadbinder + Sludge

Sample ID: Roadbinder NLS#: 171701 (continued)
Ref. Line 1 of COC 31862 Description: Roadbinder
Collected: 06/23/98 Received: 06/24/98 Reported: 07/17/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Sulfate, as SO4 (unfiltered)	1200	mg/L	500	500	EPA 375.2	07/02/98	721026460
Zinc, tot. as Zn	2.6	mg/L	0.058	0.058	EPA 200.7	07/07/98	721026460
Metals digestion - total (soil/sludge) ICP	yes				EPA 200.0	07/01/98	721026460
Metals digestion - total (soil/sludge) furnace	yes				EPA 200.0	07/01/98	721026460
Specific gravity	1.108				SM 2710F	07/06/98	721026460

Sample ID: WWTP Sludge NLS#: 171702
Ref. Line 2 of COC 31862 Description: WWTP Sludge
Collected: 06/23/98 Received: 06/24/98 Reported: 07/17/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Nitrogen, ammonia as N on solids	0.12	% DWB	0.00089	0.0028	SA MTH 33	07/08/98	721026460
Nitrogen, NO2 + NO3 as N on solids	0.016	% DWB	0.00089	0.0028	SA MTH 33	07/08/98	721026460
Nitrogen, Kjeldahl as N on solids	3.2	% DWB	0.017	0.052	SA MTH 33	07/06/98	721026460
Nitrogen, organic as N on solids	3.0	% DWB	0.017	0.052	SM4500	07/13/98	721026460
Nitrogen, tot. as N on solids	3.2	% DWB			SA MTH 33	07/17/98	721026460
Solids, total on solids	21.1	%	0.10		ASTM D2216	07/08/98	721026460
Percent Ash	27	% DWB			ASTM D5412	06/30/98	NA
Percent Sulfur	0.24	% DWB			ASTM D5142	06/30/98	NA
Percent Fixed Carbon	11	% DWB			ASTM D4239	06/30/98	NA
BTUs per lb	6428	Btu/lb			ASTM D5373	06/30/98	NA

Values in brackets represent results greater than the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection
DWB = Dry Weight Basis
LOQ = Limit of Quantitation
NA = Not Applicable
ND = Not Detected
%DWB = (mg/kg DWB)/10000

Reviewed by:

Authorized by:
R. T. Krueger
Laboratory Manager

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-3060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

NLS PROJECT# 43230
NLS CUST# 11756

Client: Fraser Paper
Attn: Kristin Schroeder
200 First Avenue No.
P.O. Box 340
Park Falls, WI 54552

Project Description: Roadbinder

Sample ID: Roadbinder **NLS#: 177407**
Ref. Line 1 of COC 32838 Description: Roadbinder
Additional Comments: Noncompliance #1
Collected: 08/26/98 Received: 08/27/98 Reported: 10/09/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Alkalinity, tot. as CaCO3 (unfiltered)	ND	mg/L	2.1	7.4	EPA 310.1	09/03/98	721026460
BOD-5 day	95000	mg/L	2.0		SM 5210	08/28/98	721026460
C.O.D. (unfiltered)	130000	mg/L	500	1800	EPA 410.1	09/02/98	721026460
Conductivity, lab	6800	umho@25C	1.0		EPA 120.1	08/31/98	721026460
Hardness, tot. as CaCO3 (unfiltered)	9700	mg/L	89	320	EPA 130.2	09/02/98	721026460
Nitrogen, ammonia as N (unfiltered)	2.4	mg/L	0.040	0.14	EPA 350.1	09/01/98	721026460
Nitrogen, Kjeldahl as N (unfiltered)	120	mg/L	11	44	EPA 351.2	08/31/98	721026460
pH, lab	2.7	s.u.	1.0		SW846 9045	08/28/98	721026460
Solids, total	120000	mg/L	2.0		EPA 160.3	08/31/98	721026460
Solids, tot. susp. (TSS)	140	mg/L	1.0		EPA 160.2	08/31/98	721026460
Percent Ash	0.94	%			ASTM D5412	10/06/98	NA
Specific gravity	1.231				SM 2710F	09/11/98	721026460
Base/Neutral/Acid Extraction	yes				SW846 3510	08/27/98	721026460
Semivolatile GC/MS by 8270C	see attached				SW846 8270C	09/04/98	721026460

Values in brackets represent results greater than the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection
DWB = Dry Weight Basis
LOQ = Limit of Quantitation
NA = Not Applicable
ND = Not Detected
%DWB = (mg/kg DWB)/10000

Reviewed by:

Authorized by:
R. T. Krueger
Laboratory Manager

ANALYTICAL RESULTS: Semi-Volatile Organic Compounds by EPA 8270B

Customer: Fraser Paper
Project Description: Roadbinder
Northern Lake Service Project Number: 43230

Analyte Name	177407 Roadbinder ug/L	DILUTION FACTOR	LOD ug/L	LOQ ug/L
Acenaphthene	ND	12	16	54
Acenaphthylene	ND	12	16	54
Anthracene	ND	12	14	45
Benzidine	ND	12	5.9	20
Benzo[a]anthracene	ND	12	9.1	25
Benzo[a]pyrene	ND	12	15	48
Benzo[b]fluoranthene	ND	12	7.7	25
Benzo[g,h,i]perylene	ND	12	14	47
Benzo[k]fluoranthene	ND	12	16	53
Bis(2-chloroethyl)ether	ND	12	19	65
4-Bromophenyl-phenylether	ND	12	12	40
Butylbenzylphthalate	ND	12	13	42
4-Chloro-3-methylphenol	ND	12	7.4	24
2-Chloronaphthalene	ND	12	15	51
2-Chlorophenol	ND	12	20	66
4-Chlorophenyl-phenylether	ND	12	13	44
Chrysene	ND	12	8.2	26
Di-n-butylphthalate	ND	12	20	66
Di-n-octylphthalate	ND	12	5.3	18
Dibenzo[a,h]anthracene	ND	12	8.3	26
Dibenzofuran	ND	12	14	48
1,2-Dichlorobenzene	ND	12	22	72
1,4-Dichlorobenzene	ND	12	23	75
1,3-Dichlorobenzene	ND	12	23	78
3,3'-Dichlorobenzidine	ND	12	10	35
2,6-Dichlorophenol	ND	12	20	66
2,4-Dichlorophenol	ND	12	11	35
Diethylphthalate	ND	12	17	56
2,4-Dimethylphenol	ND	12	37	120
Dimethylphthalate	ND	12	16	52
4,6-Dinitro-2-methylphenol	ND	12	13	45
2,4-Dinitrophenol	ND	12	290	1000
2,4-Dinitrotoluene	ND	12	8.8	28
2,6-Dinitrotoluene	ND	12	13	44
1,2-Diphenylhydrazine	ND	12	6.7	21
Fluoranthene	ND	12	8.0	26
Fluorene	ND	12	13	44
Hexachlorobenzene	ND	12	8.6	27
Hexachlorobutadiene	ND	12	16	55
Hexachlorocyclopentadiene	ND	12	14	45
Hexachloroethane	ND	12	20	67
Indeno[1,2,3-cd]pyrene	ND	12	8.3	26
Isophorone	ND	12	15	52
2-Methylnaphthalene	ND	12	17	58
2-Methylphenol	ND	12	16	52
3 & 4-Methyphenol	ND	12	18	60
n-Nitroso-di-n-propylamine	ND	12	22	72
n-Nitrosodi-n-butylamine	ND	12	17	55
n-Nitrosodimethylamine	ND	12	19	63
Naphthalene	ND	12	18	62
3-Nitroaniline	ND	12	11	37
2-Nitroaniline	ND	12	12	41
4-Nitroaniline	ND	12	14	47
Nitrobenzene	ND	12	18	58
2-Nitrophenol	ND	12	18	59

ANALYTICAL RESULTS: Semi-Volatile Organic Compounds by EPA 8270B

Customer: Fraser Paper
Project Description: Roadbinder
Northern Lake Service Project Number: 43230

Analyte Name	177407 Roadbinder ug/L	DILUTION FACTOR	LOD ug/L	LOQ ug/L
4-Nitrophenol	ND	12	9.1	31
Pentachlorobenzene	ND	12	15	49
Pentachlorophenol	ND	12	12	36
Phenanthrene	ND	12	7.6	25
Phenol	ND	12	9.1	30
Pyrene	ND	12	15	52
1,2,4,5-Tetrachlorobenzene	ND	12	15	51
2,3,4,6-Tetrachlorophenol	ND	12	8.4	28
1,2,4-Trichlorobenzene	ND	12	16	53
2,4,6-Trichlorophenol	ND	12	12	39
2,4,5-Trichlorophenol	ND	12	8.3	26
Bis(2-chloroethoxy)methane	ND	12	14	46
Bis(2-ethylhexyl)phthalate	ND	12	18	60
Bis(2-chloroisopropyl)ether	ND	12	22	73
n-Nitrosodiethylamine	ND	12	19	63
n-Nitrosodiphenylamine	ND	12	11	35
n-Nitrosopyrrolidine	ND	12	20	66

Surrogate Recovery on 2-Fluorophenol = 35.6 %
Surrogate Recovery on Phenol-d5 = 23.3 %
Surrogate Recovery on Nitrobenzene-d5 = 54.8 %
Surrogate Recovery on 2-Fluorobiphenyl = 50.8 %
Surrogate Recovery on 2,4,6-Tribromophenol = 47.8 %
Surrogate Recovery on Terphenyl-d14 = 35.0 %

Fraser Papers Inc.
Park Falls Operations
200 First Avenue North
Park Falls WI 54552
715 762 3231 Tel
715 762 5299 Fax

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[redacted] 1998
TECHNICAL SUPPORT SECTION
WASTE MANAGEMENT BUREAU

FraserPapers

May 7, 1998

Bob Grefe
Bureau of Solid Waste Management
Department of Natural Resources
P O. Box 7921
101 South Webster Road
Madison, Wisconsin 53707-7921

Subject: Spent Sulfite Liquor Landspreading Plan Approval Annual Report – 1997

Dear Mr. Grefe:

As required by the Spent Sulfite Liquor Landspreading Plan Approval issued by the DNR on June 10, 1994, this letter is provided to satisfy the annual reporting requirement contained in section 10 of that approval.

Because of the continued success of our lignin business, only minimal amounts of spent sulfite liquor were spread for dust suppression. Spent sulfite liquor was spread as follows in 1997:

Date	Location	Quantity(gals)
6/6	Fraser Papers woodyard	5100
	Fraser Papers parking lots	5100
6/12	Fraser Papers woodyard	5100
7/30	Fraser Papers woodyard	5100
	Fraser Papers parking lots	5400

The results of spent sulfite liquor testing conducted on 7/1 and 8/25 for the required parameters are attached. No changes were made to the landspreading program, the sulfite pulping process, sulfite liquor processing, or recovery.

Please call me at (715) 762-5375 if you have any questions.

Sincerely,

Kristin Schroeder
Environmental Engineer

Enclosure: Analytical data

cc: Jeff McCulloch, Fraser Papers

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-3060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

 NLS PROJECT# 36057

Client: Fraser Paper
Attn: Kristin Schroeder
200 First Avenue No.
P.O. Box 340
Park Falls, WI 54552

Project Description: WWTP Sludge & Sulfite Liquor

Sample ID: WWTP Sludge NLS#: 146240 (continued)
Ref. Line 2 of COC 28206 Description: WWTP Sludge
Collected: 08/25/97 Received: 08/26/97 Reported: 10/06/97

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Organics Extraction for Chlorinated Pest/PCBs	yes				SW846 3500	09/04/97	7210264
Base/Neutral/Acid Extraction	yes				SW846 3510	09/05/97	7210264
TCLP A/B/N by EPA 8270	see attached				SW846 8270	09/05/97	7210264

Sample ID: Weak Liquor NLS#: 146241
Ref. Line 3 of COC 28206 Description: Weak Liquor
Collected: 08/25/97 Received: 08/26/97 Reported: 10/06/97

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Alkalinity, tot. as CaCO3 (unfiltered)	ND	mg/L	1.4	4.8	EPA 310.1	08/27/97	7210264
BOD-5 day	33000	mg/L	2.0		SM 5210	08/27/97	7210264
C.O.D. (unfiltered)	150000	mg/L	280	960	EPA 410.1	10/02/97	7210264
Conductivity, lab	8600	umho@25C	1.0		EPA 120.1	08/27/97	7210264
Hardness, tot. as CaCO3 (unfiltered)	9600	mg/L	170	600	EPA 130.2	09/08/07	7210264
Nitrogen, ammonia as N (unfiltered)	3.8	mg/L	0.23	0.76	EPA 350.1	09/08/97	7210264
Nitrogen, Kjeldahl as N (unfiltered)	140	mg/L	7.4	26	EPA 351.2	09/02/97	7210264
pH, lab	2.2	s.u.	1.0		EPA 150.1	08/28/97	7210264
Solids, total	8700	mg/L	2.0		EPA 160.3	09/01/97	7210264
Solids, tot. susp. (TSS)	160	mg/L	1.0		EPA 160.2	08/28/97	7210264
Percent Ash	*				ASTM D5412	09/12/97	7210264
	Additional Comments: Unable to perform percent ash because of the low total solids content of the sample.						
Specific gravity	1.067				SM 2710F	09/03/97	7210264

Values in brackets represent results greater than the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection
LOQ = Limit of Quantitation
ND = Not Detected
DWB = Dry Weight Basis
NA = Not Applicable
%DWB = (mg/kg DWB)/10000

Reviewed by: _____

Authorized by:
R. T. Krueger
Laboratory Manager

Fraser Paper, Inc.
P.O. Box 340
200 First Avenue North
Park Falls, WI 54552

Attn: Kristin Schroeder

CUST NUMBER:
SAMPLED BY: Client
DATE REC'D: 07/02/97
REPORT DATE: 07/17/97
PREPARED BY: BMS
REVIEWED BY:

	Units	Reporting Limit	WEAK LIQUOR 07/01/97	Qualifiers	Date Analyzed
EPA 206.2					
Arsenic (GFAAS)	µg/l	3.0	13.2		07/09/97
EPA 213.2					
Cadmium (GFAAS)	µg/l	0.40	1.53		07/14/97
EPA 220.2					
Copper (GFAAS)	µg/l	16.	26.9		07/14/97
EPA 239.2					
Lead (GFAAS)	µg/l	2.0	3.81	SPL	07/16/97
EPA 270.2					
Selenium (GFAAS)	µg/l	6.0	X		07/15/97
EPA 300.0					
Sol. Chloride	mg/l	700.	2,160.		07/03/97
Sol. Sulfate	mg/l	750.	4,160.		07/03/97
EPA 365.4					
Total Phosphorus	mg/l	11.	29.2		07/09/97
EPA 6010					
Barium	mg/l	0.008	2.19		07/10/97
Calcium	mg/l	20.	3,380.		07/14/97
Chromium	mg/l	0.0044	X		07/10/97
Iron	mg/l	0.040	9.41		07/14/97
Magnesium	mg/l	0.4	53.5		07/14/97
Manganese	mg/l	0.008	12.7		07/15/97
Nickel	mg/l	0.010	0.060		07/10/97
Potassium	mg/l	4.0	113.		07/14/97
Silver	mg/l	0.019	X		07/10/97
Sodium	mg/l	10.0	757.		07/14/97
Strontium	mg/l	0.0016	2.12		07/09/97
Zinc	mg/l	0.040	4.03	SPL DUP	07/10/97

Analytical No.: 9605

X = Analyzed but not detected.

Fraser Paper, Inc.
P.O. Box 340
200 First Avenue North
Park Falls, WI 54552

CUST NUMBER:
SAMPLED BY: Client
DATE REC'D: 07/02/97
REPORT DATE: 07/17/97
PREPARED BY: BMS
REVIEWED BY:

Attn: Kristin Schroeder

	Units	Reporting Limit	WEAK LIQUOR 07/01/97	Qualifiers	Date Analyzed
EPA 3270					
Organic Extraction		-	-		07/08/97
Acenaphthene	µg/l	1000.0	X		07/11/97
Acenaphthylene	µg/l	1000.0	X		07/11/97
Anthracene	µg/l	1000.0	X		07/11/97
Benzo(b)fluoranthene	µg/l	1000.0	X	S1L	07/11/97
Benzo(k)fluoranthene	µg/l	1000.0	X	S1L S2L	07/11/97
Benzo(g,h,i)perylene	µg/l	1000.0	X	S1L	07/11/97
Benzo(a)pyrene	µg/l	1000.0	X	S1L S2L	07/11/97
Chrysene	µg/l	1000.0	X	S2L	07/11/97
Dibenzo(a,h)anthracene	µg/l	1000.0	X	CC	07/11/97
Benzidine	µg/l	5000.0	X	CC S1L S2L	07/11/97
Benzylbutylphthalate	µg/l	1000.0	X	S2L	07/11/97
Bis(2-Chloroethoxy)Methane	µg/l	1000.0	X		07/11/97
Bis(2-Chloroethyl)Ether	µg/l	1000.0	X		07/11/97
Bis(2-Ethylhexyl)Phthalate	µg/l	1000.0	X	S1L S2L	07/11/97
Bis(2-Chloroisopropyl)Ether	µg/l	1000.0	X		07/11/97
4-Bromophenyl Phenyl Ether	µg/l	1000.0	X		07/11/97
4-Chlorophenyl Phenyl Ether	µg/l	1000.0	X		07/11/97
4-Chloro-3-methylphenol	µg/l	1000.0	X		07/11/97
2-Chlorophenol	µg/l	1000.0	X		07/11/97
3-Chlorophenol&4-Chlorophen	µg/l	1000.0	X		07/11/97
2,4-Dinitrophenol	µg/l	5000.0	X		07/11/97
Di-n-butylphthalate	µg/l	1000.0	X	S1L S2L	07/11/97
3,3'-Dichlorobenzidine	µg/l	5000.0	X	S1L S2L	07/11/97
Diethyl Phthalate	µg/l	1000.0	X		07/11/97
Dimethyl Phthalate	µg/l	1000.0	X		07/11/97
2,4-Dinitrotoluene	µg/l	1000.0	X	DUP	07/11/97
2,6-Dinitrotoluene	µg/l	1000.0	X		07/11/97
Di-n-octylphthalate	µg/l	1000.0	X	S1L S2L	07/11/97
1,2-Diphenylhydrazine	µg/l	1000.0	X		07/11/97
Fluoranthene	µg/l	1000.0	X		07/11/97
Fluorene	µg/l	1000.0	X		07/11/97
Isophorone	µg/l	1000.0	X		07/11/97
Indeno(1,2,3-cd)pyrene	µg/l	1000.0	X	S1L	07/11/97
Nitrobenzene	µg/l	1000.0	X		07/11/97
N-Nitrosodi-n-butylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodiethylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodimethylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodiphenylamine	µg/l	1000.0	X		07/11/97
N-Nitrosodi-n-propylamine	µg/l	1000.0	X		07/11/97
N-Nitrosopyrrolidine	µg/l	1000.0	X		07/11/97
Pentachlorobenzene	µg/l	1000.0	X		07/11/97
Phenanthrene	µg/l	1000.0	X		07/11/97
Pyrene	µg/l	1000.0	X		07/11/97
Phenol	µg/l	1000.0	X		07/11/97
1,2,4,5-Tetrachlorobenzene	µg/l	1000.0	X		07/11/97
Aniline	µg/l	1000.0	X	S1L S2L	07/11/97

Analytical No.: 9605

X = Analyzed but not detected.

Fraser Paper, Inc.
P.O. Box 340
200 First Avenue North
Park Falls, WI 54552

Attn: Kristin Schroeder

CUST NUMBER:
SAMPLED BY: Client
DATE REC'D: 07/02/97
REPORT DATE: 07/17/97
PREPARED BY: BMS
REVIEWED BY:

	Units	Reporting Limit	WEAK LIQUOR 07/01/97	Qualifiers	Date Analyzed
EPA 8270					
Benzo(a)anthracene	µg/l	1000.0	X		07/11/97
Benzyl Alcohol	µg/l	1000.0	X		07/11/97
2-Chloronaphthalene	µg/l	1000.0	X		07/11/97
2,4-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,3-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,5-Dichlorophenol	µg/l	1000.0	X		07/11/97
2,4-Dimethylphenol	µg/l	1000.0	X		07/11/97
2,6-Dichlorophenol	µg/l	1000.0	X		07/11/97
1,2-Dichlorobenzene	µg/l	1000.0	X		07/11/97
3,4-Dichlorophenol	µg/l	1000.0	X		07/11/97
1,3-Dichlorobenzene	µg/l	1000.0	X		07/11/97
2,5-Dinitrophenol	µg/l	1000.0	X		07/11/97
1,4-Dichlorobenzene	µg/l	1000.0	X		07/11/97
Hexachlorobutadiene	µg/l	1000.0	X		07/11/97
Hexachloroethane	µg/l	1000.0	X		07/11/97
2-Methylnaphthalene	µg/l	1000.0	X		07/11/97
2-Methyl-4,6-Dinitrophenol	µg/l	5000.0	X		07/11/97
2-Methyl-4-chlorophenol	µg/l	1000.0	X		07/11/97
3-Methyl-6-chlorophenol	µg/l	1000.0	X		07/11/97
2-Methylphenol	µg/l	1000.0	X		07/11/97
3-, & 4-Methylphenol	µg/l	1000.0	X		07/11/97
Naphthalene	µg/l	1000.0	X		07/11/97
2-Nitrophenol	µg/l	1000.0	X		07/11/97
4-Nitrophenol	µg/l	5000.0	X		07/11/97
Pentachlorophenol	µg/l	1000.0	X		07/11/97
1,2,4,-Trichlorobenzene	µg/l	1000.0	X		07/11/97
2,3,4,6-Tetrachlorophenol	µg/l	1000.0	X		07/11/97
2,4,6-Trichlorophenol	µg/l	1000.0	X		07/11/97
2,4,5-Trichlorophenol	µg/l	1000.0	X	S1L S2L	07/11/97
Hexachlorobenzene	µg/l	1000.0	X		07/11/97
Hexachlorocyclopentadiene	µg/l	1000.0	X		07/11/97
Benzoic Acid	µg/l	5000.0	X		07/11/97
4-Chloroaniline	µg/l	1000.0	X	S1L S2L	07/11/97
2-Nitroaniline	µg/l	5000.0	X	S2L	07/11/97
3-Nitroaniline	µg/l	5000.0	X	S1L S2L DUP	07/11/97
Dibenzofuran	µg/l	1000.0	X		07/11/97
4-Nitroaniline	µg/l	5000.0	X	S1L S2L	07/11/97

Analytical No.: 9605

X = Analyzed but not detected.

APPENDIX E

Monitoring Well Boring Logs, Well Construction Forms, Well Development Forms

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Fraser Papers, Inc.		MW-1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants, Ltd. - Dennis Z. - STS Project No. 27077	10/29/2001	10/30/2001	Hollow-stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JY881		MW-1	Feet MSL	Feet MSL	10.8 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S/C/N
1/4 of 1/4 of Section , T N, R

Lat. 44° 33' 20.0"
Long. 90° 29' 20.0"

Local Grid Location (If applicable)
☒ N 506802.1 Feet ☐ S
☒ E 758613.5 Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Price	51	Park Falls

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24/22	15	1.5											
2 SS	24/12	23	3.0	Fill: Dark brown silty sand mixture with trace of gravel - moist - medium dense	Fill									
3 SS	24/6	5	4.5											
4 SS	24/6	2	6.0											
5 SS	24/2	2	7.5	Dark brown to black organic peat (Pt) - wet - very loose	Pt									
6 SS	24/24	2	9.0											
7 SS	24/15	8	10.5											
8 SS	24/24	19	12.0	Light brown silty very fine sand (SM) - moist - loose	SM									
			13.5	Grayish brown silt (ML) - with some very fine sand and trace of gravel - moist - loose to medium dense	ML									
			15.0	Brown silty very fine sand (SM) - with trace of gravel - moist - medium dense	SM									

End of Boring
Boring advanced to 16.0 feet with 4.25-inch hollow-stem auger
2" PVC well installed at 15.0 feet

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, WI 54311	Tel: 920-468-1978 Fax: 920-468-3312

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

Facility/Project Name: Fraser Papers, Inc.	Local Grid Location of Well: 506802.1 ft. ☒ N. ☐ S. 758613.5 ft. ☒ E. ☐ W.	Well Name: MW-1
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. 44° 33' 20.0" Long. 90° 29' 20.0" or	Wis. Unique Well No: JY881 / DNR Well Number
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 10/30/2001
Type of Well: At Grade	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm): Dennis Zehnder, STS Consultants, Ltd.
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☒ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 1498.88 ft. MSL

B. Well casing, top elevation 1498.55 ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
CP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☒ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 4.0 ft.

G. Filter pack, top ____ ft. MSL or 5.0 ft.

H. Screen joint, top ____ ft. MSL or 5.0 ft.

I. Well bottom ____ ft. MSL or 15.0 ft.

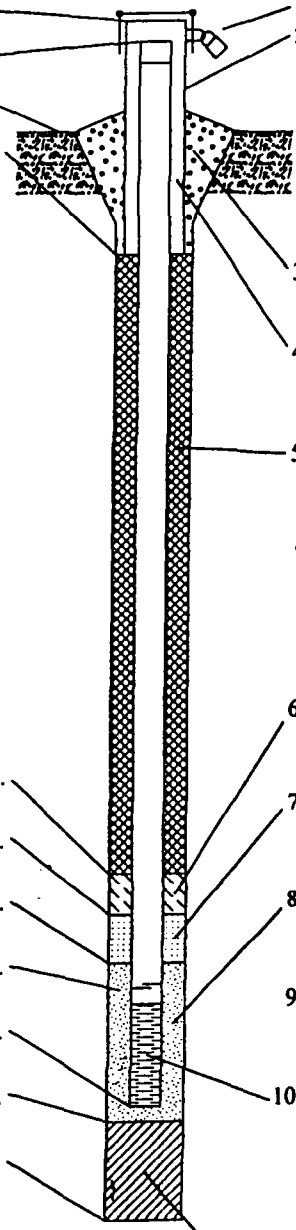
J. Filter pack, bottom ____ ft. MSL or 16.0 ft.

K. Borehole, bottom ____ ft. MSL or 16.0 ft.

L. Borehole, diameter 10.75 in.

M. O.D. well casing ____ in.

N. I.D. well casing 2" in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ____ in.
b. Length: ____ ft.
c. Material: Steel ☒ 04
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
____ Other ☐

4. Material between well casing and protective pipe:
Bentonite ☐ 30
Bentonite Other ☒

5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
a. 40/60 Red Flint
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. 20/40 Red Flint
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
____ Other ☐

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
PVC Other ☒
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: ____ ft.

11. Backfill material (below filter pack): None ☐ 14
None Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm: STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, Wisconsin	Tel: 920-468-1978 Fax: 920-468-3312

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Fraser Papers, Inc.	Price	MW-1

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	51	JY881	

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:
   - surged with bailer and bailed ☒ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed, and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ☐ 51
   - pumped slowly ☐ 50
   - other _____ ☐ [redacted]

3. Time spent developing well 45 min.

4. Depth of well (from top of well casing) 15.0 ft.

5. Inside diameter of well 2" in.

6. Volume of water in filter pack and well casing gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) 10.0 gal.

9. Source of water added City Well

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a. ✓	0.65 ft.	0.85 ft.
Date	b.	10/29/2001	10/30/2001
Time	c.	07:15 am	08:00 am
12. Sediment in well bottom		0.1 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☐ 20 Turbid ☒ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Dennis Zehnder
STS Consultants, Ltd.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: Dennis Zehnder

Firm: STS Consultants, Ltd.

Street: 1035 Kepler Drive

City/State/Zip: Green Bay, Wisconsin 54311

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: STS Consultants, Ltd.

NOTE: See instructions for more information including a list of ...

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Fraser Papers, Inc.		MW-2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants, Ltd. - Dennis Z. - STS Project No. 27077	10/30/2001	10/30/2001	Hollow-stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JY882		MW-2	Feet MSL	Feet MSL	10.8 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S/C/N
1/4 of 1/4 of Section , T N, R
Lat. 44° 33' 20.0"
Long. 90° 29' 20.0"
Local Grid Location (If applicable): ☒ N 505744.9 Feet ☐ S ☒ E 759841.3 Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Price	51	Park Falls

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24/12	8	1.5	Fill: Brown silty sand mixture with trace of gravel - moist - loose to medium dense	Fill									
2 SS	24/3.5	9	3.0											
3 SS	24/2	4	4.5	Dark brown to black peat (Pt) with silty sand - moist - loose (possible fill)	Pt									
4 SS	24/12	3	6.0											
5 SS	24/12	18	7.5	Light brown to reddish brown silty fine to very fine sand (SM) - with trace of gravel - wet - medium dense to dense	SM									
6 SS	24/0	32	9.0											
7 SS	24/18	10	10.5											
8 SS	24/2	46/7"	12.0											
			13.5	Reddish brown silty very fine sand (SM) - wet - medium dense	SM									
			15.0	Grayish brown coarse to fine silty sand (SM) - with trace of gravel - wet - very dense	SM									
				End of Boring Boring advanced to 16.0 feet with 4.25-inch hollow-stem auger 2" PVC well installed at 15.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, WI 54311	Tel: 920-468-1978 Fax: 920-468-3312

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

Facility/Project Name: Fraser Papers, Inc.	Local Grid Location of Well: 505744.9 ft. ☒ N. ☐ S. 759841.3 ft. ☒ E. ☐ W.	Well Name: MW-2
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. 44° 33' 20.0" Long. 90° 29' 20.0" or St. Plane ____ ft. N, ____ ft. E. S/C/N	Wis. Unique Well No: JY882 / DNR Well Number:
Facility ID		Date Well Installed: 10/30/2001
Type of Well: At Grade	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm): Dennis Zehnder, STS Consultants, Ltd.
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 1489.53 ft. MSL

B. Well casing, top elevation 1489.04 ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 2.8 ft.

G. Filter pack, top ____ ft. MSL or 3.8 ft.

H. Screen joint, top ____ ft. MSL or 3.8 ft.

I. Well bottom ____ ft. MSL or 13.8 ft.

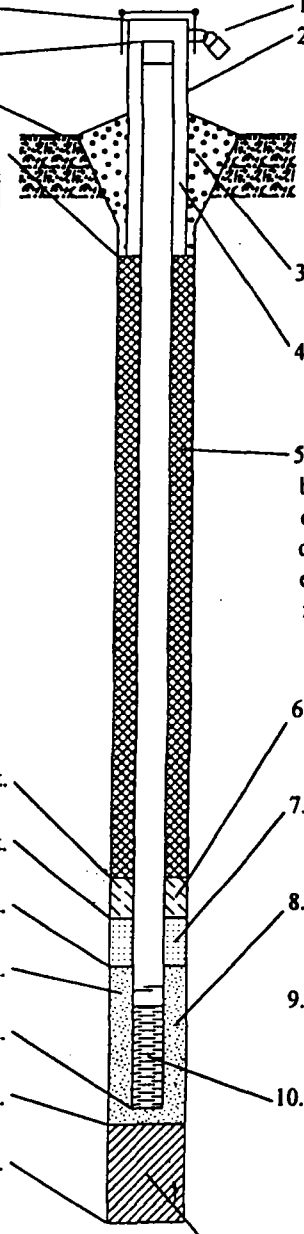
J. Filter pack, bottom ____ ft. MSL or 16.0 ft.

K. Borehole, bottom ____ ft. MSL or 16.0 ft.

L. Borehole, diameter 10.75 in.

M. O.D. well casing ____ in.

N. I.D. well casing 2" in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: ____ in.
   b. Length: ____ ft.
   c. Material: Steel ☒ 04 Other ☐ ____
   d. Additional protection? ☐ Yes ☒ No
   If yes, describe: ____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☐ 30 Other ☒ Bentonite
5. Annular space seal: a. Granular Bentonite ☒ 33
   b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
   c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
   d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
   e. ____ Ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name and mesh size
   a. 40/60 Red Flint
   b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
   a. 20/40 Red Flint
   b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ ____
10. Screen material: PVC
    a. Screen Type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☒ PVC
    b. Manufacturer Johnson
    c. Slot size: 0.010 in.
    d. Slotted length: ____ ft.
11. Backfill material (below filter pack): None ☐ 14 Other ☒ None

12. USCS classification of soil near screen:
    GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
    SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
    Bedrock ☐
13. Sieve analysis attached? ☒ Yes ☐ No
14. Drilling method used: Rotary ☐ 50 Hollow Stem Auger ☒ 41 Other ☐ ____
15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99
16. Drilling additives used? ☐ Yes ☒ No
    Describe ____
17. Source of water (attach analysis): ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm: STS Consultants, Ltd., 1035 Kepler Drive, Green Bay, Wisconsin	Tel: 920-468-1978 Fax: 920-468-3312

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Fraser Papers, Inc.	Price	MW-2

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	51	JY882	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 60 min.

4. Depth of well (from top of well casing) 13.8 ft.

5. Inside diameter of well 2" in.

6. Volume of water in filter pack and well casing: gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) 10.0 gal.

9. Source of water added City Well

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	1.45 ft.	1.60 ft.
Date	b.	10/30/2001	10/30/2001
Time	c.	11:00 am	01:30 pm
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Dennis Zehnder
STS Consultants, Ltd.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: Dennis Zehnder

Firm: STS Consultants, Ltd.

Street: 1035 Kepler Drive

City/State/Zip: Green Bay, Wisconsin 54311

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: STS Consultants, Ltd.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Fraser Papers, Inc.		MW-3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants, Ltd. - Dennis Z. - STS Project No. 27077	10/31/2001	10/31/2001	Hollow-stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JY883		MW-3	Feet MSL	Feet MSL	10.8 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S/C/N
1/4 of 1/4 of Section , T N, R

Lat. 44° 30' 20.0"
Long. 90° 29' 20.0"

Local Grid Location (If applicable)
☒ N 505472.9 Feet ☐ S ☒ E 759628.2 Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Price	51	Park Falls

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 14	12	1.5	Fill Brown silty sand, peat, and gravel mixture - with trace of wood - moist - loose to medium dense	Fill									
2 SS	24 / 2	14	3.0											
3 SS	24 / 3.5	11	4.5											
4 SS	24 / 5	6	6.0											
5 SS	24 / 15	16	7.5											
6 SS	24 / 21.5	40	9.0	Reddish brown fine sand (SP) - with trace of silt - wet - medium dense	SP									
7 SS	24 / 21.5	50	10.5	Reddish brown silty fine sand (SM) - with trace of gravel - wet - dense to very dense	SM									
			12.0	Brown fine sand (SP) - with some gravel - wet - very dense	SP									
			13.5											
			15.0	End of Boring Boring advanced to 15.0 feet with 4.25-inch hollow-stem auger 2" PVC well installed at 14.5 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, WI 54311	Tel: 920-468-1978 Fax: 920-468-3312

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State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Fraser Papers, Inc.	Local Grid Location of Well: 505472.9 ft. ☒ N. ☐ S. 759628.2 ft. ☒ E. ☐ W.	Well Name: MW-3
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. 44° 30' 20.0" Long. 90° 29' 20.0" or	Wis. Unique Well No: JY883 / DNR Well Number:
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 10/31/2001
Type of Well: At Grade	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm) Dennis Zehnder, STS Consultants, Ltd.
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 1489.54 ft. MSL

B. Well casing, top elevation 1489.17 ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 3.5 ft.

G. Filter pack, top ____ ft. MSL or 4.5 ft.

H. Screen joint, top ____ ft. MSL or 4.5 ft.

I. Well bottom ____ ft. MSL or 14.5 ft.

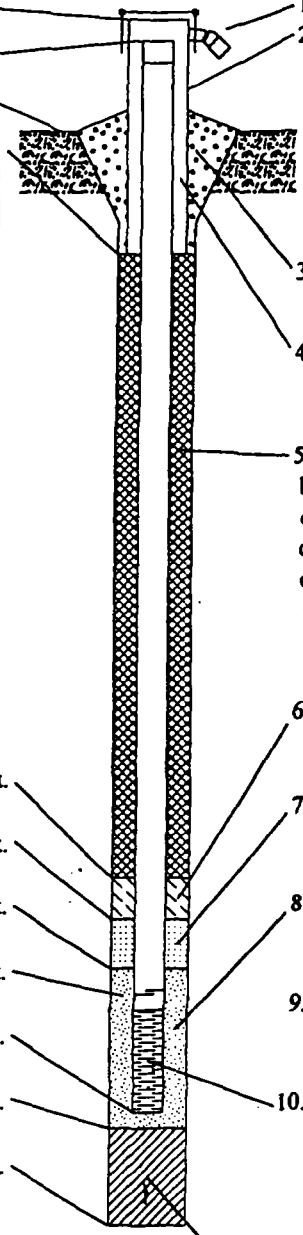
J. Filter pack, bottom ____ ft. MSL or 15.0 ft.

K. Borehole, bottom ____ ft. MSL or 15.0 ft.

L. Borehole, diameter 10.75 in.

M. O.D. well casing ____ in.

N. I.D. well casing 2" in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ____ in.
b. Length: ____ ft.
c. Material: Steel ☒ 04
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
____ Other ☐

4. Material between well casing and protective pipe:
Bentonite ☐ 30
Bentonite Other ☒

5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
a. 40/60 Red Flint
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. 20/40 Red Flint
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
____ Other ☐

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
PVC Other ☒
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: ____ ft.

11. Backfill material (below filter pack): None ☐ 14
None Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm: STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, Wisconsin	Tel: 920-468-1978 Fax: 920-468-3312

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Fraser Papers, Inc.	Price	MW-3

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	51	JY883	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 100 min.

4. Depth of well (from top of well casing) 14.5 ft.

5. Inside diameter of well 2" in.

6. Volume of water in filter pack and well casing gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) 10.0 gal.

9. Source of water added City Well

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	1.65 ft.	1.70 ft.
Date	b.	10/31/2001	10/31/2001
Time	c.	08:00 am	10:00 am
12. Sediment in well bottom		0.5 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Dennis Zehnder
STS Consultants, Ltd.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name Dennis Zehnder

Firm: STS Consultants, Ltd.

Street: 1035 Kepler Drive

City/State/Zip: Green Bay, Wisconsin 54311

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: STS Consultants, Ltd.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Fraser Papers, Inc.		MW-4

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants, Ltd. - Dennis Z. - STS Project No. 27077	10/30/2001	10/30/2001	Hollow-stem auger

WI Unique Well No	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JY884		MW-4	Feet MSL	Feet MSL	10.8 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S/C/N
1/4 of 1/4 of Section , T N, R
Lat. 44° 30' 20.0"
Long. 90° 29' 20.0"
Local Grid Location (If applicable)
☒ N ☒ E
505156 Feet ☐ S 759425.9 Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Price	51	Park Falls

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24/19	9	1.5											
2 SS	24/3.5	9	3.0											
3 SS	24/6	15	4.5											
4 SS	24/9	12	6.0	Fill: Mixture of brown silty sand, peat and roots - with trace of wood and gravel - moist to wet - loose to dense	Fill									
5 SS	24/3.5	32	7.5											
6 SS	24/0	7	9.0											
7 SS	24/12	20	10.5											
8 SS	24/0	11	12.0	Light brown fine sand (SP) - with trace of silt and gravel - wet - medium dense	SP									
			13.5											
			15.0											
				End of Boring Boring advanced to 16.0 feet with 4.25-inch hollow-stem auger 2" PVC well installed at 15.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, WI 54311	Tel: 920-468-1978 Fax: 920-468-3312

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State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

Facility/Project Name: Fraser Papers, Inc.	Local Grid Location of Well: 505156 ft. ☒ N. ☐ S. 759425.9 ft. ☒ E. ☐ W.	Well Name: MW-4
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. 44° 30' 20.0" Long. 90° 29' 20.0" or	Wis. Unique Well No: JY884 / DNR Well Number:
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 10/30/2001
Type of Wel: At Grade	Section Location of Waste/Source: ____1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm): Dennis Zehnder, STS Consultants, Ltd.
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 1490.47 ft. MSL

B. Well casing, top elevation 1498.10 ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
_____ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):

_____

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 3.5 ft.

G. Filter pack, top _____ ft. MSL or 4.5 ft.

H. Screen joint, top _____ ft. MSL or 4.5 ft.

I. Well bottom _____ ft. MSL or 14.5 ft.

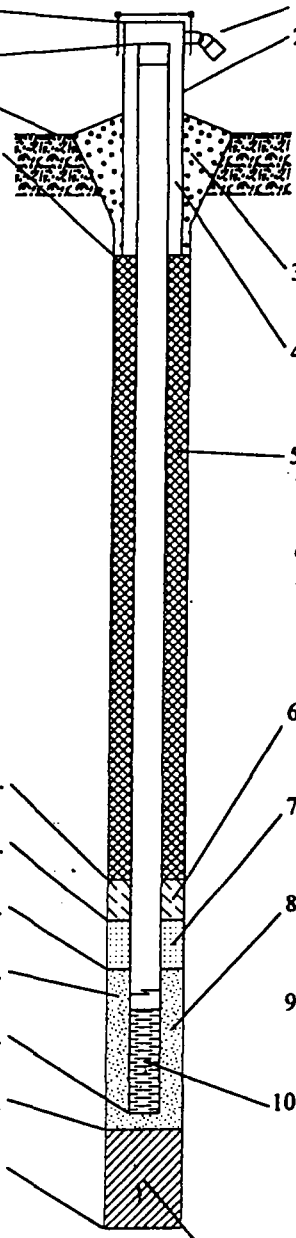
J. Filter pack, bottom _____ ft. MSL or 16.0 ft.

K. Borehole, bottom _____ ft. MSL or 16.0 ft.

L. Borehole, diameter 10.75 in.

M. O.D. well casing _____ in.

N. I.D. well casing 2" in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 0 4
_____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 3 0
Concrete ☒ 0 1
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Bentonite Other ☒

5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. _____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
a. 40/60 Red Flint
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. 20/40 Red Flint
b. Volume added _____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 1 1
Continuous slot ☐ 0 1
PVC Other ☒
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: _____ ft.

11. Backfill material (below filter pack): None ☐ 1 4
None Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm: STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, Wisconsin — Tel: 920-468-1978 Fax: 920-468-3312

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Fraser Papers, Inc.	Price	MW-4

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	51	JY884	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well: 80 min.

4. Depth of well (from top of well casing): 14.5 ft.

5. Inside diameter of well: 2" in.

6. Volume of water in filter pack and well casing: gal.

7. Volume of water removed from well: 70.0 gal.

8. Volume of water added (if any): 10.0 gal.

9. Source of water added: City Well

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	2.80 ft.	2.65 ft.
Date	b.	10/31/2001	10/31/2001
Time	c.	11:00 am	12:00 pm
12. Sediment in well bottom		0.5 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Dennis Zehnder
STS Consultants, Ltd.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: Dennis Zehnder

Firm: STS Consultants, Ltd.

Street: 1035 Kepler Drive

City/State/Zip: Green Bay, Wisconsin 54311

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: STS Consultants, Ltd.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐, Waste Management ☐, Remediation/Redevelopment ☐, Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Fraser Papers, Inc.		MW-5

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants, Ltd. - Dennis Z. - STS Project No. 27077	10/30/2001	10/30/2001	Hollow-stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JY885		MW-5	Feet MSL	Feet MSL	10.8 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S/C/N
1/4 of 1/4 of Section , T N, R

Lat. 44° 30' 20.0"
Long. 90° 29' 20.0"

Local Grid Location (If applicable)
☒ N ☐ S 504884.1 Feet
☒ E ☐ W 759230.3 Feet

Facility ID	County	County Code	Civil Town/City/ or Village
	Price	51	Park Falls

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24/12	7	1.5	Fill: Stratified mixture of brown silty sand, black organic peat - with fragments of lumber - with trace of gravel - moist to wet - loose to dense	Fill									
2 SS	24/9.5	12	3.0											
3 SS	24/3.5	5	4.5											
4 SS	24/2.5	45	6.0											
5 SS	24/18	25	7.5											
6 SS	24/12	49	9.0	Reddish brown silty fine to very fine sand (SM) - with trace of gravel - moist to wet - medium dense to dense (gravel content increases with depth; cobbles from 12.0 to 14.0 feet)	SM									
7 SS	24/0	12	10.5											
			12.0											
			13.5											
			15.0											

End of Boring
Boring advanced to 16.0 feet with 4.25-inch hollow-stem auger
2" PVC well installed at 15.0 feet

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	STS Consultants, Ltd. 1035 Kepler Drive, Green Bay, WI 54311	Tel: 920-468-1978 Fax: 920-468-3312

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Fraser Papers, Inc.	Local Grid Location of Well: 504884.1 ft. ☒ N. ☐ S. 759230.3 ft. ☒ E. ☐ W.	Well Name: MW-5
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. 44° 30' 20.0" Long. 90° 29' 20.0" or	Wis. Unique Well No: JY885 / DNR Well Number
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 10/30/2001
Type of Well: At Grade	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm): Dennis Zehnder, STS Consultants, Ltd.
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 1489.42 ft. MSL

B. Well casing, top elevation 1488.95 ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
____ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 3.5 ft.

G. Filter pack, top ____ ft. MSL or 4.5 ft.

H. Screen joint, top ____ ft. MSL or 4.5 ft.

I. Well bottom ____ ft. MSL or 14.5 ft.

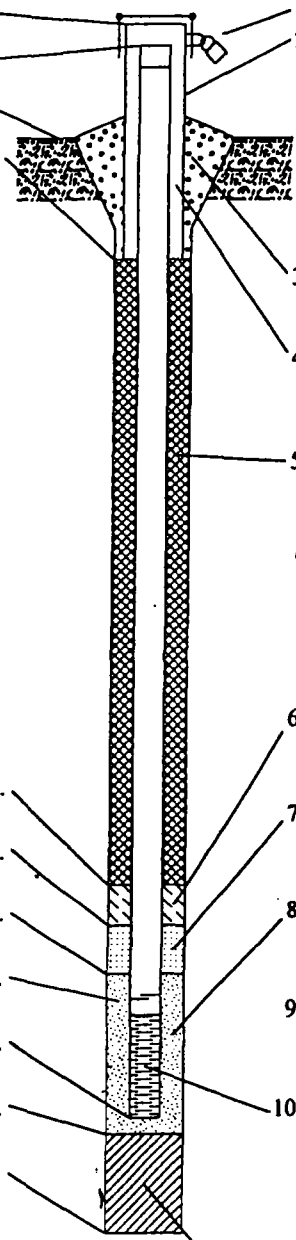
J. Filter pack, bottom ____ ft. MSL or 16.0 ft.

K. Borehole, bottom ____ ft. MSL or 16.0 ft.

L. Borehole, diameter 10.75 in.

M. O.D. well casing ____ in.

N. I.D. well casing 2" in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ____ in.
b. Length: ____ ft.
c. Material: Steel ☒ 0 4
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 3 0
Concrete ☒ 0 1
____ Other ☐

4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Bentonite Other ☒

5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
a. 40/60 Red Flint
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. 20/40 Red Flint
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
____ Other ☐

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 1 1
Continuous slot ☐ 0 1
PVC Other ☒
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: ____ ft.

11. Backfill material (below filter pack): None ☐ 1 4
None Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm: STS Consultants, Ltd., 1035 Kepler Drive, Green Bay, Wisconsin	Tel: 920-468-1978 Fax: 920-468-3312

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
Fraser Papers, Inc.	Price	MW-5

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	51	JY885	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☒	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 75 min.

4. Depth of well (from top of well casing) 14.5 ft.

5. Inside diameter of well 2" in.

6. Volume of water in filter pack and well casing gal.

7. Volume of water removed from well 70.0 gal.

8. Volume of water added (if any) 10.0 gal.

9. Source of water added City Well

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	1.80 ft.	1.60 ft.
Date	b.	10/30/2001	10/30/2001
Time	c.	05:00 pm	09:00 am
12. Sediment in well bottom		0.5 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Dennis Zehnder
STS Consultants, Ltd.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: Dennis Zehnder

Firm: STS Consultants, Ltd.

Street: 1035 Kepler Drive

City/State/Zip: Green Bay, Wisconsin 54311

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: STS Consultants, Ltd.

NOTE: See instructions for more information including a list of county codes and well type codes.

APPENDIX F

Site Specific Sampling Plan

Wisconsin Department of Natural Resources
Superfund Site Assessment
Preliminary Assessment/Site Inspection

SAMPLING PLAN

Site Name:	Flambeau Paper Corporation
U.S. EPA ID#:	WID 093418614
Location:	200 First Ave. North, Park Falls, Price County, W
Directions to Site:	North US Hwy. 13 to Park Falls. East on 9th Street to First Ave. Proceed through fenced/gated area (Gate 1) on the southeast corner of 9th Street and First Ave. The Site is located approximately 1,200 southeast of Gate 1 along the Flambeau River.
Dates of Investigation:	May 21, 2002
Project Manager:	William Schultz, 107 Sutliff Ave., Rhinelander, WI, (715) 365-8965
Field Support Group:	John Sager, Greer Lndquist, Norm Dunbar, William Schultz, Tim Tarris, Dan Boardman

Prepared by William Schultz, Project Manager
Bureau for Remediation and Redevelopment
Wisconsin Department of Natural Resources

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Figure 1 – Site Map with Sampling Locations

Attachment A – Sampling, Analyses, Containers, Preservation, Holding Times, and Field/Lab QC

I. Introduction

The Wisconsin Department of Natural Resources (WDNR), through a Cooperative Agreement with the United States Environmental Protection Agency (USEPA) Region 5, is tasked to conduct combined Preliminary Assessment/Site Inspection (PA/SIs) or Expanded Site Inspection (ESIs) to determine if potentially contaminated sites throughout Wisconsin are eligible for placement on the National Priorities List (NPL) of Superfund sites. A Hazard Ranking System (HRS) score of 28.5 or greater determines NPL eligibility.

A. Purpose of this Sampling Plan

The purpose of this sampling plan is to provide written protocols used by WDNR to ensure that data of known quality are used to determine if Flambeau Paper Wood Yard has an HRS score of 28.5 or greater. This sampling plan will make the Field Support Group aware of site history, potential contaminants, sampling procedures, and their roles and responsibilities during the sampling event. This sampling plan will be sent to USEPA Region 5 in advance of the sampling event so that laboratory services through the EPA's Contract Laboratory Program (CLP) may be obtained.

B. Objective of Investigation

The objective of this investigation is to collect samples of surficial soils and groundwater to establish that hazardous material or waste, attributable to the site, has been released into the environment. Sampling strategy will support that the Soil Exposure and Groundwater Pathways pose, or potentially pose, a threat to human health and the environment.

II. Site Description and History

Flambeau Paper Corp. is an active pulp and paper mill located in the City of Park Falls, Wisconsin. Various owners have operated the paper mill since 1890. It is presently owned by Fraser Paper Inc.-Park Falls, Wisconsin (Fraser Paper). Since 1964, an approximately 40 acre parcel at the north end of the mill property along the west bank of the Flambeau River has been used as a round-wood storage yard for the production of pulp using the sulfite process. As the woodyard expanded, a portion of the wetland within the mill property limits and adjacent to the Flambeau river was progressively filled from the high ground on the west side of the site. This practice, which included disposal of mill debris, continued until 1982 when an agreement with the U.S. Army Corp of Engineers was reached to preserve the remaining wetland. The remaining portion of the wetland is still visible today. Since the area was filled, the area has served as a wood storage yard. The site has, and continues, to experience heavy rail and truck traffic. As many as 15 railroad spur line transect the property and logging trucks are continuously bringing pulpwood to the site. At times as much as 100,000 cords of round wood is stored on the property. In 2001 a new pulpwood chipping facility was constructed just south of the area of concern, and wood storage volumes have decreased from historical averages.

In August 1987, Flambeau Paper reported to the EPA (EPA form 89000-1) that between 1974 and 1977, a warehouse was cleared of obsolete raw materials used in the papermaking process. On May 16, 1989, information was gathered from a site inspection and an interview with personnel that were present during the disposal. According to the interview and Flambeau Paper's EPA Form 8900-1,

hazardous materials were cleared from a warehouse and disposed of in a 15-acre parcel of the northeast portion of the woodyard. (This 15-acre parcel is shown on Figure 1, and is the focus of the Site Investigation.) The materials were of unknown age, but appeared very old and unusable. The containers were rusted and during transportation to the woodyard may have been breached. These materials were placed in a swampy area directly into the groundwater. Over a 3-month period, between 50 and 75 drums, carboys, and other containers were buried. Materials used in the paper making process that might have been buried in this area include biocides, solvents, silicate soda, caustic soda, acids, surfactants, or foam killers.

In August of 2001, Fraser Paper submitted a work plan to the Wisconsin Department of Natural Resources (WDNR) to investigate the woodyard disposal site. The plan included the installation and sampling of an up-gradient and 4 down-gradient monitoring wells near where the materials were believed to be disposed of. With the WDNR input and concurrence, in October and November of 2001 the monitoring wells were installed and sampled. Sampling included volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), arsenic, barium, cadmium, chromium, cyanide, lead, mercury, selenium, silver, and sulfate. Also one sample of natural silty/sandy soil from each boring was analyzed for total organic carbon (TOC). A summary table of the monitoring results from November 2001 is shown in Table 1.

TABLE 1
Historical Data

Groundwater Analyses Result Summary

Parameter Name	MW-1	MW-2	MW-3	MW-4	MW-5	Detection Limit	Limit of Quantitation
TEMPERATURE, WATER (DEG. C)	9.1	11.3	10.8	10.7	10.7		
SPECIFIC CONDUCTANCE-FIELD (UMHOS/CM @ 25C)	340	370	320	480	790		
PH-FIELD (STANDARD UNITS)	6.8	7.1	6.6	6.5	6.5		
SULFATE, DISSOLVED (MG/L AS SO4)	7.9			9.3	52	5.0	5.0
ARSENIC, DISSOLVED (UG/L AS)	2.8			2.3		2.3	8.1
BARIUM, DISSOLVED (UG/L AS BA)	74	83	89	110	120	5.0	5.0
CHROMIUM, DISSOLVED (UG/L AS CR)				0.64		0.57	2.0
1,2,4-TRIMETHYLBENZENE (UG/L)	0.23					0.11	0.39
1,3,5-TRIMETHYLBENZENE (UG/L)	0.12					0.10	0.36
TOLUENE IN WHL WTR SAMPLE (UG/L)			0.38	0.76	0.18	0.17	0.63
1,2,4-TRIMETHYLBENZENE (UG/L)			0.19			0.11	0.39
P-ISOPROPYLTOLUENE (UG/L)			0.74	10	0.98	0.14	0.50
ETHYLBENZENE IN WHOLE WATER SAMPLE (UG/L)				0.19		0.18	0.58
DEPTH TO GROUNDWATER (FEET BELOW WELL TOP)	1.59	1.53	1.79	2.88	1.97		
GROUNDWATER ELEVATION (FEET ABOVE MSL)	1,496.96	1,487.51	1,487.38	1,487.23	1,486.98		
Total Organic Carbon of Solids (mg/kg)	1,500	340	950	1,000	1,100		

(NOTE: Blank cells in the table correlate to no detect.)

III. Site Geology/Hydrogeology

The Flambeau River, which flows southwest into the Mississippi River lies along the east side of the 15-acre woodyard site. The soils/geology of the area is an estimated 50 feet of Pleistocene glacial drift overlaying Middle Precambrian bedrock. Glacial deposits consist of poorly sorted tills, dominated by peat, silt, sand and gravel outwash. The water table is shallow at 1.5-6 feet below the ground surface in the area of the site, and flows east-southeast toward the Flambeau River. The entire 15-acre site is in the 100-year flood plain, and is part of a historically filled wetland.

IV. Description of Work to be performed

Proposed sampling at the site includes collecting groundwater samples from the five existing monitoring wells and sampling them for TCL Organics and TAL Inorganics. This includes one up-gradient (background) well, four down-gradient wells, a field duplicate sample and a blank. This groundwater sampling will help determine if the site is having significant groundwater impacts on the adjacent surface water or down gradient receptors.

In addition, four surficial soil samples will be collected for TCL Organics and TAL Inorganics. This includes one background sample and three samples near the suspected source area. The soil sampling will help determine if a direct contact threat is present at the site.

A. Waste Characteristics and Pathways to be Investigated

In the mid 1970s a warehouse was cleared of 50-75 drums and carboys of obsolete raw materials used in the paper-making process were cleared from a warehouse and disposed of in a wetland adjacent to the Flambeau River. The materials could include biocides, solvents, silicate soda, caustic soda, acids, surfactants, or foam killers. These materials were placed in a swampy area directly into the groundwater and crushed as they were covered over. Potentially, the waste source could pose a direct contact threat at the site and surficial soil samples will be collected. Potential groundwater contamination may migrate to the adjacent surface water (Flambeau River) directly to the east.

B. Sampling Rationale

Five surficial soil samples will be collected to determine if the contaminated soil at the site pose a direct contact risk. Likewise, the five groundwater samples collected will help determine if the contaminated groundwater poses a threat to the adjacent surface water.

A summary of the sampling rationale is in Table 2 below. Sample locations are included in Figure 1.

TABLE 2
Sampling Rationale

Sample Matrix	Sample Location Description	Sample ID Numbers	Analyses	Rationale for Sampling
Soil	Off-site surficial soil, 0-2'	SS-1	TCL Organics TAL Inorganics	Background for surficial soil samples, attribution
	On-site surficial soils, 0-2'	SS-2 thru SS-4	TCL Organics TAL Inorganics	Direct contact threat
Groundwater	Up gradient monitoring well	MW-1	TCL Organics TAL Inorganics	Background for groundwater, attribution
	On-site monitoring wells	MW-2 thru MW-5	TCL Organics TAL Inorganics	Observed release

V. Sampling Procedures

The procedures given below will be used to collect samples at Flambeau Paper Corporation.

A. Soil Sampling

Surficial soils will be collected within the top two feet to investigate the soil exposure pathway. Surficial soils will be obtained using stainless steel trowels, shovels or augers. Soils will be containerized in the following order: 1.) VOCs, 2.) SVOCs and PCB/pesticides, and 3.) metals and cyanide. Loose surface material, grass, or gravel, shall not be included in the soil sample. See **Attachment A** for appropriate sample containers, volumes, preservation, and holding times. VOC samples will be containerized as soon as possible and with as little handling or disturbance as possible to prevent loss of volatile contaminants.

1. VOC Soil Samples for CLP

Soil samples for VOC analysis by the CLP will be collected in EnCore Samplers, two-5 gram size sampler and one-25 gram sampler per soil sample. Material for filling the EnCore Samplers will be selected from multiple points in the hole by plunging the opened EnCore Sampler into the soil until it is completely full, with no headspace. The EnCore Sampler will be capped immediately. Soils will be kept as cold as possible by placing them on dry ice until they reach the laboratory for analysis. Ideally, soil temperature should be maintained at -12° C.

2. SVOCs, PCB/Pesticides and Metals/Cyanide Soil Samples for CLP

Regardless of the depth or method of collection, soil samples obtained for non-volatile chemical analyses will be thoroughly mixed to homogenize the sample material before being placed in the appropriate sample containers. To accomplish this task, additional soil will be removed from the

hole and placed in a stainless steel pan or mixing bowl. Sample will be initially mixed by rolling soils from the sides, corners and bottom into the center of the pan with the help of a stainless steel trowel or spoon. The sample will then be quartered and moved to the four corners of the container. Each quarter of the sample will be mixed individually. Each quarter will then be rolled to the center of the container and the entire sample mixed again.

One-8 ounce jar will be filled for SVOCs and PCB/pesticides and one-8 ounce jar will be filled for metals and cyanide analyses. Soil will be removed from the jar threads so that the cap will fit securely. Samples will be preserved by cooling to 4^{0} C with ice until they arrive at the laboratory. No chemical preservatives are required.

3. Field Screening for Soils

Field screening will be performed on each soil sample. The soil within the hole will be measured for VOCs with a photoionization detector (PID). This should be done as quickly as possible to avoid the loss of volatile organic contaminants. The maximum value registered by the PID will be recorded in the field logbook. Soil samples may be collected preferentially where there is a PID reading or visible staining.

B. Monitoring Well Sampling

A reading with a PID from the head space in the well and water elevations will be taken according to procedures outlined in the department's *Groundwater Sampling Field Manual*. Wells will be purged using the following equation:

EQUATION 1

Volume to be Purged from a Monitoring Well

$$V = \pi \times (D/2)^2 \times H \times 4 \times 7.48 \text{ gallons/ft}^3$$

Where
V = Total purge volume (i.e., four well volumes in gallons)
$\pi = 3.1416$
D = Inside diameter of well casing (feet)
H = Feet of water in well (depth to well bottom minus depth to water)

A piece of 4-mil plastic (~4' x 4') will be centered around the well to reduce the introduction of contamination. Purged water will be collected in graduated 5-gallon plastic pails. Physical features such as color, odor, and turbidity will be recorded in the field logbook.

Wells will be sampled using either disposable bailers or reusable Teflon bailers. Reusable bailers will be decontaminated between wells using the procedures in Section VIII. One-time-use nylon rope will be used to lower the bailers. Some of the bailers are provided with specially designed bottom-emptying devices which will be inserted into the bottom to transfer the groundwater to containers, thus minimizing loss of volatile contaminants.

See **Attachment A** for appropriate sample containers, volumes, preservation, and holding times.

Sample containers will be filled in the following order: VOCs, SVOCs, PCB/Pesticides, Cyanide, and a transfer bottle. The transfer bottle will be used for field measurements of pH, conductivity, and temperature and then for field filtering (using disposable filters) for metals. Procedures for field measurements are found in the WDNR BEAP QAP, Attachment A. The sample containers will be kept at 4° C until they arrive at the laboratory.

1. VOC Groundwater Samples for CLP

The vials for VOC analysis have hydrochloric acid added in advance. The vials will be filled slowly and with caution to avoid loss of volatile contaminants. Containers will be filled completely, without headspace. Once capped, the vials will be inverted to check for trapped air bubbles.

2. SVOC and PCB/Pesticide Groundwater Samples for CLP

Two large amber jugs will be filled for these fractions. No chemical preservation is required, only 4° C until samples arrive at the laboratory.

3. Inorganic Groundwater Analyses for CRL

Preservation of the remaining fractions will take place in a well ventilated area to avoid inhalation of potentially hazardous vapors that may be produced as a result. Groundwater for metals analyses will be field filtered into plastic containers and preserved with nitric acid. Groundwater for cyanide analysis will not be filtered but collected directly from the bailer into a plastic container and preserved with sodium hydroxide. Samples will be kept at 4° C until they arrive at the laboratory.

C. Quality Control Samples

A summary of field and laboratory quality control sample requirements may be found in **Attachment A**. All sample containers will be purchased from commercial suppliers. All sample containers will be cleaned according to EPA's highest standards. A certificate of analysis that substantiates the absence of contamination will accompany shipments of containers. These certificates will be retained as part of the final project files.

Field rinsate blanks, trip blanks, and field duplicates will get *unique* sample numbers. All organic portions and all inorganic portions of the matrix spike/matrix spike duplicate will receive the *same* organic and inorganic sample numbers, respectively.

1. Soil Samples

One field duplicate per ten field samples, or fewer, will be collected. The field duplicate will be collected, containerized, and preserved at the same time and in the same manner as the parent sample. All field duplicates will be analyzed for the entire suite of parameters as the parent sample. Field duplicates will be designated in column K of the CLP Organic and Inorganic Traffic Report/Chain of Custody.

A matrix spike/matrix spike duplicate (MS/MSD) will be designated on the CLP Organic and Inorganic Traffic Report/Chain of Custody Record in the area labeled "Sample(s) to be Used for Laboratory QC" at a frequency of one per twenty field samples, or fewer. No extra volume is needed for PCB/pesticide or metals/cyanide analyses. Three times the volume is required for VOC soil samples that will be used for the MS/MSD (6-5 gram and 3-25 gram EnCore Samplers).

No trip blank or field rinsate blank are required for soil samples.

2. Monitoring Well Samples

One field duplicate per ten field samples, or fewer, will be collected. The field duplicate will be collected, containerized, and preserved at the same time and in the same manner as the parent sample. All field duplicates will be analyzed for the entire suite of parameters as the parent sample. Field duplicates will be designated in column K of the CLP Organic Traffic Report/Chain of Custody.

A matrix spike/matrix spike duplicate (MS/MSD) will be designated on the CLP Organic Traffic Report/Chain of Custody Record in the area labeled "Sample(s) to be Used for Laboratory QC" at a frequency of one per twenty field samples, or fewer. Extra volume is required for all aqueous samples: 3x volume for organic analyses and 2x volume for inorganic analyses.

A trip blank of reagent-free, preserved water will be prepared and shipped at a frequency of 1/cooler with all groundwater for VOC analysis. Trip blanks will be designated in column K of the CLP Traffic Report/Chain of Custody form.

A field rinsate blank prepared from reagent free water using all pertinent field equipment and preservation for groundwater sampling will be prepared at a frequency of one per ten groundwater samples or fewer. Rinsate blanks will be analyzed for the full suite of parameters and will be designated in column K of the CLP Traffic Report/Chain of Custody form.

VI. Documentation and Custody Procedures

Chain of custody procedures and documentation protocol as outlined in Section 5 of the WDNR BEAP QAP will be strictly adhered to. All appropriate information such as field measurements, sample numbers, persons obtaining and handling samples, etc., will be recorded on preprinted field recording sheets and/or preprinted and bound sampling field log books. The date and time of sampling will be recorded on each sample container. If errors occur on any field documentation, a single line will be drawn through the error, signed and dated. No erasures, write-overs, or correction liquids are permitted.

VII. Sample Packaging and Shipping

The sample custodian is responsible for packaging samples and preparing coolers for shipping. The sample custodian will follow protocol specified in Section 5 of the WDNR BEAP QAP and this sampling plan. Samples to CLP/CRL laboratories will be shipped overnight via Federal Express for

next-morning delivery. For samples arriving at the CLP laboratories on Monday through Friday mornings, shipping information must be given to Dyncorp by 8:00 a.m. Central Time the day of arrival. Similarly, CRL needs to be notified in advance of samples arriving at the laboratory. For CLP samples being shipped Friday for a Saturday morning delivery, shipping information must be provided to Dyncorp by 11:00 a.m. Friday, Central Time. CRL does not accept samples on Saturdays.

VIII. Decontamination and Investigative Waste

Disposable sampling equipment such as bailer will not be cleaned by WDNR before use in the field. Dedicated, non-disposable sampling equipment will be cleaned before the sampling event in the following manner:

1. Equipment will be washed with a non-phosphate detergent (Alconox or equivalent) and warm tap water. If possible, a brush will be used to loosen any residual contamination.
2. Sampling equipment will be rinsed with tap water first, followed by a copious de-ionized, reagent-free water rinse.
3. Sampling equipment will be allowed to air dry in a clean environment and then stored in sealed plastic containers until used for sampling.

If sampling equipment is reused in the field, the procedure given above will be followed between sampling locations as closely as practical.

Discarded items such as Tyvek suits, gloves, paper towels, and disposable sampling equipment, etc., will be placed in plastic trash bags, removed from the site, and disposed of at the WDNR regional office. Other investigative waste such as decontamination waters, purge waters from wells, and soil cuttings will be stored in sealed pails or drums on site. The regional WDNR office will arrange for the pick up and disposal of investigative waste by a contractor according to state requirements.

IX. Field Support Group Assignments

Six people will be associated with the field sampling. Two sampling crews of two people each will be assigned to collect either the surficial soil samples or the groundwater samples. The crews will work as pairs and be jointly responsible for properly collecting and preserving the samples in the field. A sample custodian will be responsible for preparing the collected samples for shipment including chain of custody requirements. A sixth person will be a coordinator who oversees on-site health and safety monitoring, photo documentation and assist where needed for the sampling crews or sample custodian.

TABLE 3
Work Assignments

Name	Media	Duties
Greer Lundquist	All	Sample Custodian-Documentation, sample packaging
William Schultz	All	On-site Support, H&S, photos
Tim Tarris Buddy ↓	Monitoring wells	Purging, field measurements, sample filtration,

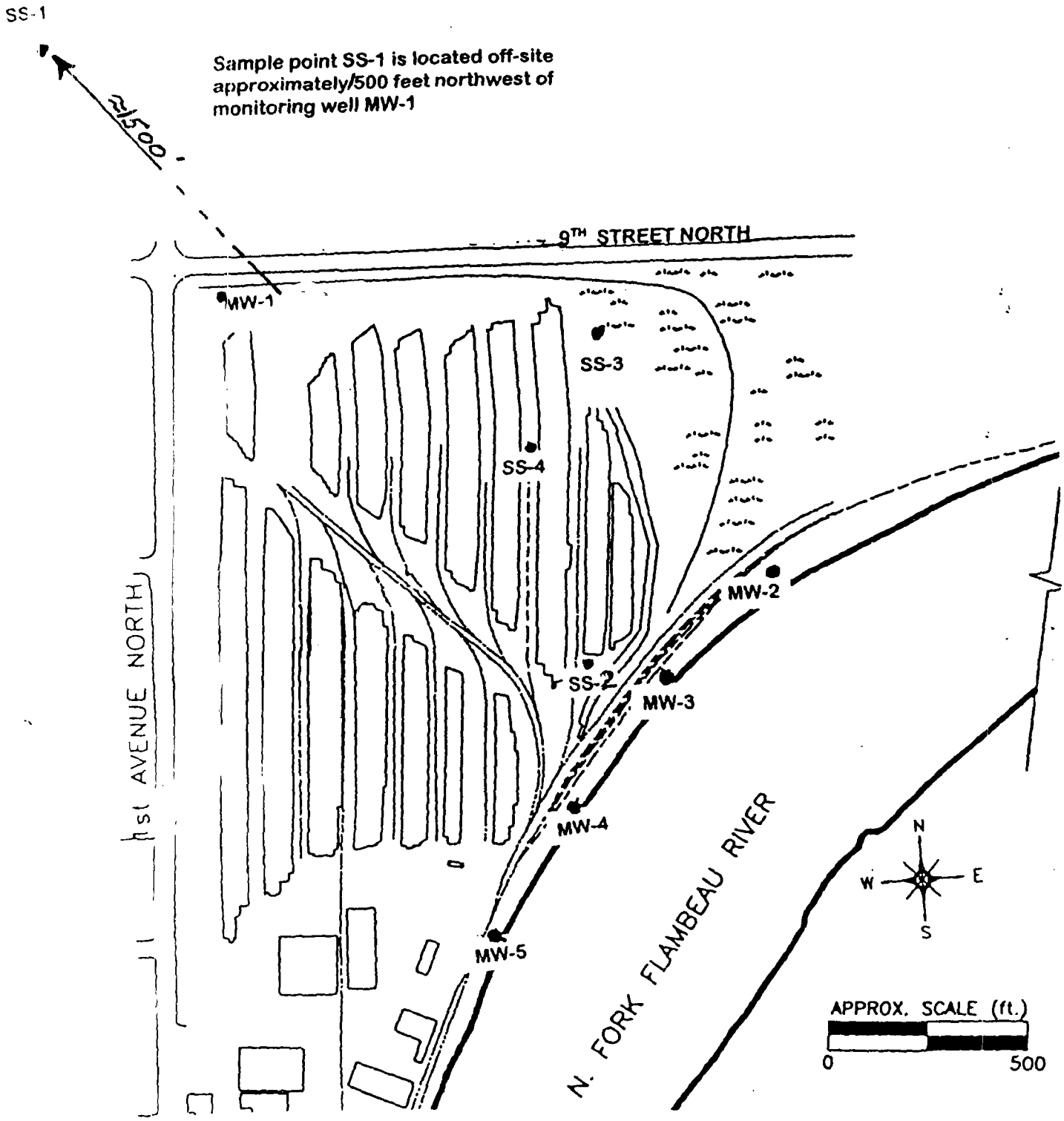
			preservation
Norm Dunbar	Buddy ↑	Monitoring wells	Documentation, sample collection
John Sager	Buddy ↓	Soils	Field screening, documentation
Dan Boardman	Buddy ↑	Soils	Sample collection, preservation

X. Sampling Report

A sampling report will be submitted to the WDNR Quality Assurance Manager after each round of sampling is complete. This report will include a means of matching the traffic report numbers with the field identification numbers and their corresponding locations so that data received may be accurately assessed. In addition, the report will include any deviations from the sampling plan, particularly noting how these deviations might affect data quality and usability.

FIGURE #1

SITE MAP WITH SAMPLING LOCATIONS



Attachment A SAMPLING, ANALYSES, CONTAINERS, PRESERVATION, HOLDING TIME, FIELD/LAB QC SUMMARY
SOILS

MATRIX	NUMBER OF FIELD SAMPLES	LABORATORY ANALYSIS	CONTAINERS	VOLUME	FIELD FILTER	PRESERVATION	HOLDING TIME	FIELD/LAB QC	FREQUENCY	VOLUME	LAB ANALYSIS
Soil	4	VOCs	2-5 g and 1-25 g EnCore Sampler	no headspace	NA	-12° C	**48 hours**	trip blank	NA		
								rinsate	NA		
	4	SVOCs and PCB/Pesticides	1-8 oz. glass jar w/teflon lined lid	full	NA	4° C	14 days until extraction	field duplicate	1/10 samples or fewer/soil matrix (separate sample #)	same as field samples	all
	4	Metals and Cyanide	1-8 oz. glass jar w/teflon lined lid	full	NA	4° C	14 days CN 28 days Hg 6 mo. Others	MS/MSD	1/20 samples or fewer/soil matrix (same sample #)	total 3X for VOCs no extra volume required for other parameters	all

Attachment A SAMPLING, ANALYSES, CONTAINERS, PRESERVATION, HOLDING TIME, FIELD/LAB QC SUMMARY
GROUNDWATER

MATRIX	NUMBER OF FIELD SAMPLES	LABORATORY ANALYSIS	CONTAINERS	VOLUME	FIELD FILTER	PRESERVATION	HOLDING TIME	FIELD/LAB QC	FREQUENCY	VOLUME	LAB ANALYSIS
Groundwater	5	VOCs	2-40 ml vials w/teflon septa	no headspace	no	1:1 HCl, pH<2 4° C	14 days	trip blank	1/cooler of VOC samples	same as field samples	VOCs only
	5	SVOCs	1-80 oz. amber glass w/teflon lined lid	full	no	4° C	7 days until extraction	rinsate	1/10 samples or fewer	same as field samples	all
	5	PCB/Pesticides	1-80 oz. amber glass w/teflon lined lid	full	no	4° C	7 days until extraction	field duplicate	1/10 samples or fewer (separate sample #)	same as field samples	all
	5	Metals	1-1 liter HDPE w/teflon lined lid	full	yes*	5 mls 1:1 HNO_3 pH<2, 4° C	Hg 28 days 6 mo. Others	MS/MSD	1/20 samples or fewer (same sample #)	total 3X	organics
	5	Cyanide	1-1 liter HDPE w/teflon lined lid	full	no	NaOH pH>12, 4° C	14 days		(same sample #)	total 2X	inorganics

* Groundwater should be field filtered for metals within 20 minutes of sample collection, unless a low flow pump is used for collection.

APPENDIX G

Soil and Groundwater Sampling Field Logs

SOIL/~~SEDIMENT~~ SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program

Site Name: Flambeau Paper ~~Inspection~~ Sampling Type: Soils

Cerclis #: WID # 093418614 Inspection Date: 5/21/02

Sampler: John Sager (print)

_____ (sign)

Recorder: John Sager (print)
William Schultz

_____ (sign)
William Schultz

CROSSED-OUT (X) PAGES INDICATE LEFT INTENTIONALLY BLANK BY RECORDER

(SOIL) / SEDIMENT (CIRCLE ONE)

Sample Number: SS-1 Sampling Time: 10:30

QC Sample: YES NO Duplicate MSD

Depth of Sample: 2' PID/FID Reading: 0.0

(Grab) / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

33' off centerline of center Ave. N.

GPS - coordinates taken

(Sketch)

Sampling Methods / Equipment:

sample trowel, encore

Dedicated Equipment: (YES) NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

moist silty sand w/ gravel, brown, no odor.

Comments (include problems encountered/deviations from sampling plan):

1' topsoil

lt. brn. silty sand

Photo number(s): _____ Photo direction(s): _____

(SOIL) / SEDIMENT (CIRCLE ONE)

Sample Number: SS-2 Sampling Time: 11:10

QC Sample: YES (NO) Duplicate MSD

Depth of Sample: 8" 12-16" PID/FID Reading: 0.0

(Grab) / Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

80' from switch

GPS coordinates taken

(Sketch)

Sampling Method / Equipment: shovel, sample trowel encore

Dedicated Equipment: (YES) NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

brn. fine to med. grained sand & gravel 8" topsoil, moist

Comments (include problems encountered/deviations from sampling plan):

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SS-4 Sampling Time: 11:40

QC Sample: YES NO Duplicate MSD Dup. 12:45

Depth of Sample: 1' PID/FID Reading: 0.0

Grab Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

Between log piles

GPS coordinates taken

(Sketch)

Sampling Methods / Equipment: shovel, trowel, encore

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

brown fine to med grained sand w/ gravel & cobbles, moist, organics

Comments (include problems encountered/deviations from sampling plan): _____

Photo number(s): _____ Photo direction(s): _____

SOIL / SEDIMENT (CIRCLE ONE)

Sample Number: SS-3 Sampling Time: 12:25

QC Sample: YES NO Duplicate MSD

Depth of Sample: 2' PID/FID Reading: 0.0

Grab Composite (Circle One) If composite, number of locations: _____

If composite, spacing btwn locations: _____

Sample Location (include distance to a permanent feature):

By fence and log piles NE side of site

GPS coordinates taken

(Sketch)

Sampling Method / Equipment: shovel, trowel, encore

Dedicated Equipment: YES NO

Sample Description (include color, texture, mottling/staining, odor, etc.):

brown to black sand & topsoil w/ cobbles & gravel, moist, no odor organic, no odor

Comments (include problems encountered/deviations from sampling plan): _____

Photo number(s): _____ Photo direction(s): _____

Groundwater

MONITORING WELL SAMPLING FIELDBOOK

WDNR Brownfields Environmental Assessment Program

Site Name: Flambeau Paper ~~Inspection~~ Sampling Type: Ground Water

Cerclis #: WID093418614 ~~Inspection~~ Sampling Date: 5/21/02

Sampler: Norm Dunbar (print)

Norm Dunbar / Bill Schultz (sign)

Recorder: Norm Dunbar / Bill Schultz (print)

Norm Dunbar / Bill Schultz (sign)

CROSSED-OUT (X) PAGES INDICATE LEFT INTENTIONALLY BLANK BY RECORDER

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: 12:00

Well Name: MW 1 PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 14.6 (ft) Water Column Length (A): 14.6 (ft)

Depth to Water: Surface 0.0 (ft) Inside Well Diameter: 2" (in)

Volume to be purged (AxB) 9.51

Time purging began 9:30

Time purging complete 9:45

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: DISPOSABLE BAILER

Dedicated Equipment: YES ~~NO~~ NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): no odor, very turbid

Cond 280 -

pH - 7.1 -

temp - 18.1 -

Comments (include problems encountered/deviations from sampling plan)

cap was open, betonite up over well casing

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: 11:20

Well Name: MW 2 PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 13.29 (ft) Water Column Length (A): 11.68 (ft)

Depth to Water: 1.61 (ft) Inside Well Diameter: 2" (in)

Volume to be purged (AxB) 7.62

Time purging began 11:13

Time purging complete 11:20

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: Disposable bailer

Dedicated Equipment: YES ~~NO~~ NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): clear - turbid - light sulfur odor

Cond 430

pH 7.19

temp 13.9

Comments (include problems encountered/deviations from sampling plan)

betonite up over well casing

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: 12:51

Well Name: MW 3 PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 14.30 (ft) Water Column Length (A): 12.45 (ft)

Depth to Water: 1.85 (ft) Inside Well Diameter: 2" (in)

Volume to be purged (AxB) 8.11

Time purging began 12:43

Time purging complete 12:51

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: dedicated bailer

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): clear - turbid BROWN

Cond 330

pH 7.23

temp 19.2

Comments (include problems encountered/deviations from sampling plan) _____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: 13:40

Well Name: MW 4 PID/FID Reading: 0

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 12.58 (ft) Water Column Length (A): 9.89 (ft)

Depth to Water: 2.69 (ft) Inside Well Diameter: ~~4~~ 2" (in)

Volume to be purged (AxB) 8.45

Time purging began 13:28

Time purging complete 13:39

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: dedicated bailer

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): clear - turbid brown

cond 6.90

pH 6.64

temp 19.0

Comments (include problems encountered/deviations from sampling plan) _____

wellcap gapped - bentonite over cap

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: _____

Well Name: MW 5 PID/FID Reading: 0

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: 14.15 (ft) Water Column Length (A): 13.07 (ft)

Depth to Water: 1.48 (ft) Inside Well Diameter: 2" (in)

Volume to be purged (AxB) 8.52

Time purging began 2:45

Time purging complete 2:55

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: dedicated bailer

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.) clear, Turbid Brown

cond = 830

pH 6.55

Temp. 19.0

Comments (include problems encountered/deviations from sampling plan) _____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

MONITORING WELL SAMPLING

Sample Number: _____ Sampling Time: _____

Well Name: _____ PID/FID Reading: _____

QC Sample: YES NO Duplicate MSD Rinsate Trip Blank

Depth to Bottom: _____ (ft) Water Column Length (A): _____ (ft)

Depth to Water: _____ (ft) Inside Well Diameter: _____ (in)

Volume to be purged (AxB) _____

Time purging began _____

Time purging complete _____

Purged dry YES NO

Inches*	B
1.00	0.163
1.25	0.255
1.50	0.367
2.00	0.652
3.00	1.469
4.00	2.610

*Inside Well Diameter

Sampling Equipment: _____

Dedicated Equipment: YES NO Bailer No.: _____

Sample Description (include color, odor, turbidity, etc.): _____

Comments (include problems encountered/deviations from sampling plan) _____

Photo number(s): _____ Photo direction(s): _____

WELL CAP REPLACED AND LOCKED YES NO

APPENDIX H

Site Specific Health and Safety Plan

Wisconsin Department of Natural Resources
Superfund Site Assessment
Preliminary Assessment/Site Inspection

HEALTH AND SAFETY PLAN

Site Name:	Flambeau Paper Corporation
U.S. EPA ID#:	WID 093418614
Location:	900 First Ave. North, Park Falls, Price County, Wisconsin
Directions to Site:	North US Hwy. 13 to Park Falls. East on 9th Street to First Ave. Proceed through fenced/gated area (Gate 1) on the southeast corner of 9th Street and First Ave. The Site is located approximately 1,200 feet southeast of Gate 1 along the Flambeau River.
Dates of Investigation:	May 21, 2002 (back-up date of May 22, 2002 for inclement weather)
Project Manager:	William Schultz, 107 Sutliff Ave., Rhinelander, WI, (715) 365-8965
Field Support Group:	*I certify that I have read and agree to abide by this Health & Safety Plan when at the site.* (please sign and date)

John Sager _____
Greer Lndquist _____
Norm Dunbar _____
Bill Schultz _____
Dan Boardman _____
Tim Tarris _____

Reviewed and Approved by: _____ 5/7/02

John Robinson **Date**
Team Supervisor
Northern Region

Prepared by William Schultz, Project Manager
Bureau for Remediation and Redevelopment
Wisconsin Department of Natural Resources

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ANTICIPATE

A. Objective

This plan was developed to help protect the health and safety of all DNR personnel investigating potentially contaminated sites. The primary purpose of this health and safety plan is to help site workers recognize and evaluate the chemical, physical, and biological hazards they may potentially encounter and implement controls to minimize the risks of these hazards.

B. Site Description and History

The site is part of an active papermill round-wood storage yard. The total storage area is about 35 acres in size with piles of wood stored between access roads and railroad spur lines. The site is a 10-acre portion located in the northeast portion of the total storage area where the waste was buried. The wood piles are constructed of logs 100 inch long and 6 to 12 inches in diameter. Piles vary in size but average 15 feet high by 100 feet long. The size and location of the log piles are changing daily, which makes referencing sample locations prior to the day of sampling difficult. Activities in the area include heavy mobile equipment stockpiling and removing the wood piles. Railroad car and truck spotting/unloading are ongoing activities in the area. The Flambeau River is located along the east side of the site with railroad tracks running parallel to the riverbank approximately 30 feet from the river edge. Four down gradient monitoring wells are located between the river's edge and the railroad tracks.

In 1989 it was reported, by the owner of the site at the time (Flambeau Paper Corporation), that obsolete paper-making material were buried in what is now a portion of the wood storage yard (the site). Over a three-month period, between 50-75 drums, carboys, and other containers were buried and used as fill in a low wetland area adjacent to the Flambeau River. The continents are unknown and cannot be identified by visual inspection. The material might have included biocides, solvents, silicate soda, caustic soda, acids, surfactants, or foam killers. This list was generated from materials that are used in the paper-making process.

C. Directions to Site and Site Access

The wood yard property is located between the west bank of the Flambeau River on the east, North First Avenue on the west, 9th Street North on the north and the papermill complex (starting at about 5th Street North) on the south. The wood yard property is encircled with an 8-foot chain-link fence and access is controlled through several gates along North First Avenue. Gate #1 at the corner or 9th Street North and North First Avenue, Gate #2 approximately 500 feet south of Gate #1 along North First Avenue, and Gate #3 at the corner of 5th Street North and North First Avenue are active gates controlled by papermill personnel. Written permission has been obtained from the present owners (Fraser Paper) to access the monitoring wells and sampling locations. Attachment #5 includes a location map and directions to emergency facilities.

RECOGNIZE AND EVALUATE

D. Description of Work,

Four surficial soil samples will be collected. One soil sample and will be collected near by but outside of the designated exclusion zone to be used for background data. The one background soil sample will be obtained off the paper mill property west of First Avenue. The remaining three surficial soil samples will be collected on-site in the suspected waste disposal area. All samples will be collected using a hand auger as described in the approved Sampling Plan. A duplicate soil sample will be collected for quality assurance.

Five groundwater samples will be collected from the five groundwater monitoring wells already installed at the site. One of the wells (MW-1) is located outside of the designated restricted work zone area just inside Gate #1, and will be used as a background data point. All wells will be developed/sampled/filtered (if needed)\ and properly preserved as described in the approved Sampling Plan. A blank and duplicate groundwater sample will also be collected for quality assurance

E. Work Assignments and Training/Medical Exam Confirmation

All personnel working on site shall have completed, as required, a minimum of 24 hours of health and safety training and most staff have completed 40 hours of health and safety training. Annual refresher training will also be completed as required.
The following persons will be working on the Site Assessment for Flambeau Paper Corporation and the duties they may be assigned to the following duties:

William Schultz - Project Manager, field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

Norm Dunbar - Site Safety Officer, field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

John Sager - field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

Greer Lundquist - field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

Dan Boardman - field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

Tim Tarris - field screening, field measurements, monitoring well purging, sample collection/filtering/preservation, sample packaging, photo documentation, on-site support,

F. Known or Potential Hazards and Risk Analysis

Risk Analysis Work Sheets for the task of sampling at the site has been completed and are included with this health and safety plan in **Attachment 2.**

Listed are the chemical contaminants and (maximum concentrations) found historically in the monitoring wells:
Sulfate (52 mg/l as SO_4), Arsenic (2.8 ug/l), Barium (120 ug/l), Chromium (0.64 ug/l), Trimethylbenzene (0.35 ug/l), Toluene (0.76 ug/l), P-Isopropyltoluene (0.98 ug/l), ethylbenzene (0.19 ug/l).

Surficial soil sampling within two feet of the ground surface will not encounter historical waste fill. Sampling will be done of the cover material only to evaluate any direct contact threats. Cover material includes sand/gravel, cinders and slag. Historical soil sampling in the mill area has shown trace metals above background, sulfates and low pH.

Information regarding chemical preservatives can be found in Section I.

Physical:

The site is an active storage yard for round wood used to make pulp. The area consists of large piles of logs intersected by roadways and railroad spurs. Heavy mobile equipment and railroad traffic can be expected and all sampling personnel will need to remain alert for heavy equipment movement around their location. The terrain is flat, but typical slip, trip and fall hazards do exist. Railroad tracks, railroad switches, ties and bedding will need to be traversed. The sampling will not be performed in severe weather, but sampling will continue with light rain (no lighting) and/or moderate winds (< 20 MPH). The health and safety officer will be responsible to suspend sampling if weather conditions become a concern. A safety meeting will be conducted with all on-site sampling personnel prior to entering the site to alert all sampling personnel to potential physical hazards. The effects of extreme weather conditions may be exacerbated by PPE. Heat stress and cold stress information is in **Attachment 3.**

Biological:

Potential biological hazards associated with the site may include poison ivy and ticks. PPE will help prevent contact and decontamination wash-up after sampling will reduce any potential biological hazards at the site. Blastomycosis fungus is known to be present in the general Price County area. Care will be taken to avoid the inhalation of soils or dust. All soil sampling will be conducted with the sampler being upwind of any soil disturbance.

G. Air Monitoring

Ambient air will be monitored periodically with a 11.7 eV probe while personnel are in the exclusion zone. This will include monitoring the air adjacent to where surficial soil samples and ground water samples will be collected. Monitoring will correlate to where sampling personnel could be exposed. Air monitoring at groundwater wells will be done 4.5 feet above the ground, up-

wind of the well. Air monitoring during soil samples will be done 2 feet above the ground surface, up-wind, while initial soil is being excavated and collected.

CONTROL

H. Selection of Personal Protective Equipment and Action Levels

The level of protection required for all personnel entering the exclusion zone will be level D. Persons handling samples will be required to wear a minimum of a full tyvek suit or tyvek apron (dependent on the activity) and disposable gloves (neoprene or other suitable material). Specific protective equipment such as hard hat, gloves, safety glasses or goggles, hearing protection and aprons will be worn by personnel doing specific sampling tasks such as preserving samples, bailing wells, collecting soil samples with a hand auger, or decontaminating sampling equipment. Potential hazards associated with poison ivy and ticks will be addressed with the proper personal protective equipment being worn.

Conditions will be monitored continuously by the Health and Safety officer. If the conditions at the site change such as to require a higher level of protection greater than level D, all sampling will be suspended and all personnel shall retreat to the support/clean zone or off of the site.

I. Site Control Procedures

The risks involved in conducting this site investigation are considered minimal. Nevertheless, a three-zone system will be used to limit the potential of spreading contamination. These zones include 1.) the exclusion zone, 2.) the decontamination zone, and 3.) the support/clean zone. A map of the site with these designated work zones is in **Attachment 1**.

In the event of an emergency the site shall be evacuated and the personnel working on the site shall meet outside of Gate 1 at the corner of 9th Street North and 1st Avenue North.

J. Decontamination Procedures

All sampling equipment will be decontaminated according to procedures outlined in the site-specific sampling plan.

Site personnel will decontaminate according to the following procedures:

- All equipment potentially exposed to contamination shall be cleansed or disposed of as required.
- Wash and rinse outer gloves (repeat as necessary)
- Roll off Tyvek suit or apron and place in plastic garbage bag.
- Wash and rinse boots
- Remove latex inner gloves and place in plastic garbage bag
- Wash hands and face thoroughly as soon as possible

K. Spill Containment and Investigative Waste

Preservatives for aqueous samples include hydrochloric acid, nitric acid, and sodium hydroxide. Material Safety Data Sheets for these preservatives and all other chemical products used on site are in a folder in each of the sampling vans. Spill containment kits for acids and bases are available for each of the sampling vans. Absorbent material such as vermiculite will also be available for chemical spills.

Investigative derived wastes will consist of disposable Tyvek coveralls, aprons, disposable gloves, boot covers, decontamination waters, purge waters and soil cuttings. All disposable personal protective equipment will be disposed of in plastic garbage bags and disposed of at DNR offices. Disposable personal protective equipment that has come in contact with heavily contaminated media or potentially hazardous material, however, will be containerized on site and disposed of at a licensed facility.

L. Standard Work Practices

These initial procedures will be performed before any site work begins:

- The project manager will brief the field support team regarding health and safety concerns associated with the site and confirm that all workers have read and understood this health and safety plan,
- All site workers will be shown how to use the mobile telephones in the sampling vans or available cellular phones,
- A vehicle (with all emergency information, Attachment 4) will be designated for emergency use,
- Prevailing wind direction will be determined,
- Air monitoring equipment will be calibrated up wind and off site, and
- The exclusion, contamination reduction, and support/clean zones will be delineated.

The following standard work practices shall be adhered to at all times:

- No eating, drinking, smoking, or applying of cosmetics or personal hygiene products shall be permitted on site (drinking of water, etc., will be allowed off site),
- No ignition sources shall be permitted on site,
- The "buddy system" shall be in effect at all times in the exclusion zone,
- No one shall enter a confined space,
- No one shall enter areas that require the use of PPE Levels A or B,
- Gloves shall be worn until sample containers are thoroughly decontaminated,
- Work shall be restricted to daylight hours,
- Site work will cease during severe weather conditions, including when thunder and lightning are present,
- Air monitoring shall occur when personnel are in the exclusion zone, and

- Eye protection and gloves shall be worn while handling chemical preservatives.

M. Emergency Information

All emergency information specific to this site is in **Attachment 5**.

N. Check List of Safety Equipment and Supplies

Below is a checklist of safety equipment and related supplies:

Safety Equipment and Supplies:

Fire extinguisher
First-aid kit
"Strip" thermometers
Air monitoring instrument (PID) and calibration gas
Portable eye/face wash with sterile solutions
Two-way communication system (walkie-talkies)
Material Safety Data Sheets

Personal Protective Equipment and Supplies:

Hard hats
Ear plugs or muffs
Tyvek coveralls, suits, aprons, sleeve covers, boot covers
Outer gloves (neoprene or other suitable material)
Inner disposable gloves
Safety boots (washable with steel toes/shanks)
Eye protection (safety goggles of face shields)
Duct tape
Drinking water or "sports drinks" and vessels
Hand and face soap, tap water, paper towels

Decontamination Supplies:

Alconox or equivalent
Wash tubs
Carboys of tap water
Carboys of contaminant-free distilled water
Hudson sprayer for contaminant-free distilled water
Paper towels
Trash bags
Barrels/buckets for investigative waste

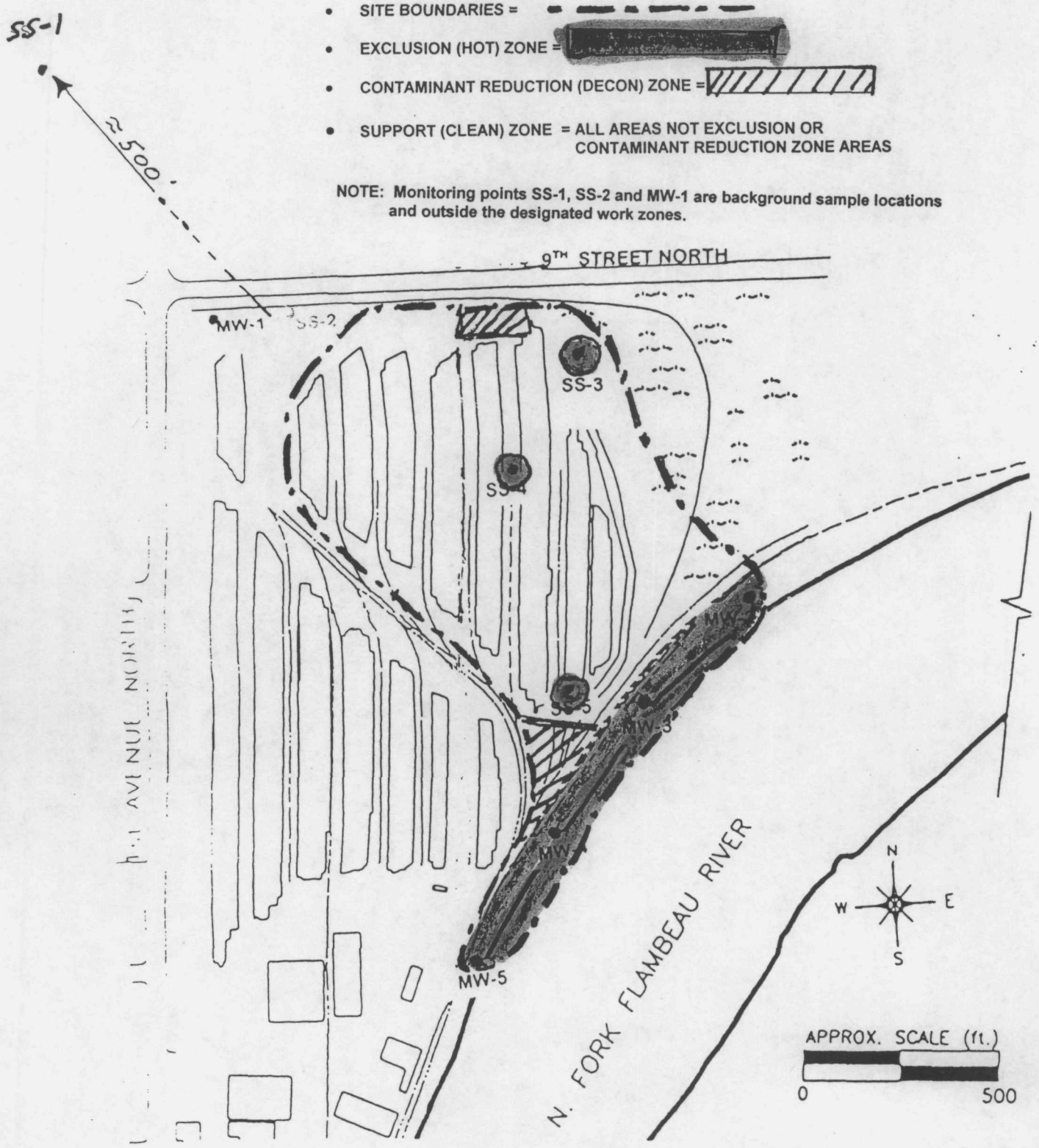
ATTACHMENT 1

Map of Site with Designated Work Zones

LEGEND KEY

- SITE BOUNDARIES =
- EXCLUSION (HOT) ZONE =
- CONTAMINANT REDUCTION (DECON) ZONE =
- SUPPORT (CLEAN) ZONE = ALL AREAS NOT EXCLUSION OR CONTAMINANT REDUCTION ZONE AREAS

NOTE: Monitoring points SS-1, SS-2 and MW-1 are background sample locations and outside the designated work zones.



Risk Analysis

The purpose of risk analysis is to identify conditions that may pose immediate danger to life or health (IDLH) or other conditions that may cause death or serious harm to staff at a work site. If such conditions are noted, they need to be addressed in appropriate sections of the site safety plan. Site conditions need to be reviewed to determine if any real or potential physical, biological or chemical hazards exist at the site before entering the site. Below we have analyzed risks under three categories: Physical hazards, biological hazards and chemical hazards.

Physical Hazard

	Yes	No
Will the site activity at the time it is performed result in stress?	☐	☒
Is there a potential for a noise exposure in excess of 90 dBA?	☒	☐
Will site activity be performed in extreme temperature (> 70°F and < 40°F?	☒	☐
Will site activity be performed in windy conditions? (wind in excess of 10 mph)	☒	☐
Will site activity be performed in severe weather? (rain or lightening)	☒	☐
Will site activity require lifting of heavy objects (> 30 lbs)?	☒	☐
Will site activity require repetitive twisting hand movements?	☐	☒
Will the work activity require repetitive elbow and shoulder movement?	☐	☒
Will the site activity require arms outstretched or elbows high?	☐	☒
Is there a potential for site workers to be struck by moving objects?	☒	☐
Will site activity include excessive physical effort (over exertion)	☐	☒
Will site activity be performed on platforms or at elevated heights?	☐	☒
Will site activity be performed in area with an increase potential for slip, trip or fall?	☒	☐
Will site activity be performed between moving or stationary objects?	☒	☐
Will work activity be performed in Level 1 confined space?	☐	☒

Department employees are forbidden to enter level 2 confined space

*** If Yes to any of these questions please refer to Chapter 4 for appropriate risk evaluation and control alternatives.**

Biological Hazard

	Yes	No
Do you know or suspect the presence of blood-borne pathogens and infections (Hepatitis A & B, HIV/AIDS)	☐	☒
Do you know or suspect the presence of blastomycosis causing fungus on site?	☒	☐
Is there potential for sharp rusty objects at work site (Is this addressed better under the medical monitoring?)	☐	☒
Do you know or suspect the presence of poisonous ivy, sumac or other poisonous plants at work site?	☒	☐
Do you know or suspect the presence of poisonous snakes at the worksite?	☐	☒
Do you know or suspect the presence of dangerous spiders and insects (including ticks)?	☒	☐

*** If yes to any of these questions please refer to Chapter 4 for the appropriate risk evaluation and control alternatives.**

Chemical Hazard

	Yes	No
Are there any known or suspected containers/drums? **	☐	☒
Are there any known or suspected vapor clouds?	☐	☒
Are there any known or suspected dead or stressed animals or vegetation?	☐	☒
Are there any known or suspected staining of surfaces or soils?	☐	☒
Are there any known or suspected sheens on water other clue to the presence of chemicals?	☐	☒
Are there any known or suspected manmade or naturally occurring pathways including storm or sanitary sewers, culverts, electrical race ways, gas pipes, telephone wires, cables, etc.?	☐	☒

*** If the answer is "YES" to any of the above questions, complete Table 1 and quantify concentration.**

** Based on reports, drums may have been crushed and buried on site. Contact potential is minimal

ATTACHMENT 3
Heat Stress and/or Cold Stress Information

Heat Stress:

The protective clothing will increase the potential for **heat rash, heat cramps, heat exhaustion, and heat stroke**. The symptoms for each disorder are listed below:

1. **Heat rash** is caused by continuous exposure to heat and humid air and aggravated by chafing clothes. It decreases the ability to tolerate heat as well as being a nuisance.

2. **Heat cramps** are caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen. Muscles fatigued from work are usually most susceptible to cramps.

3. **Heat exhaustion** is caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, moist skin; profuse sweating; dizziness and lassitude.

4. **Heat stroke** is the most extreme form of heat stress. The body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma. Medical help must be obtained immediately.

Heat Stress Monitoring:

For monitoring the body's recuperative ability to excess heat, one or both of the following techniques should be used as a screening mechanism. Monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit (F) or above. Frequency of monitoring should increase as ambient temperature increases or if slow recovery rates are indicated. When temperatures exceed 80 degrees F workers must be monitored for heat stress after every work period.

1. **Heart rate** (HR) should be measured by the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. If the HR is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33%.

2. **Body temperature** should be measured orally with a clinical thermometer (or forehead strip thermometer) as early as possible in the resting period. Oral temperature (OT) at the beginning of the rest period should not exceed 99 degrees F. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. However, if the OT exceeds 99.7 degrees F at the beginning of the next period, the following work cycle should be further shortened by 33%. OT should be measured again at the end of the rest period to make sure that it has dropped below 99 degrees Fahrenheit.

The following steps will be taken to reduce the potential for heat stress if temperature extremes are reached:

1. Gatorade will be available as a source of electrolytes. Water will also be available. Personnel should be sure that they have decontaminated their hands and faces prior to consuming liquids. The liquids will be kept in a cooler in the van.

2. For temperatures between 70 and 90 degrees F a minimum of one ten minute rest break for each hour work period is planned. For temperatures exceeding 90 degrees F the planned rest break will be increased to 15 minutes. Monitoring for heat stress will be performed after each work period when temperatures exceed 80 degrees F with rest periods being modified as necessary,

3. Shade will be provided and an air conditioned car will be available. When possible, overheated personnel will cool down in the shade prior to entering an air conditioned car.

4. The team members will use the buddy system while working. They should report any potential symptoms immediately to their partner.

Cold Stress:

Although samplers may not be exposed to extreme cold conditions for prolonged periods, there are several different kinds of cold injuries which can occur, even at temperatures above freezing. This section describes exposure conditions which may cause cold injuries, and methods to prevent or care for such injuries.

Local Cold Injuries

Chilblains can result from prolonged exposures of bare skin to temperatures in the low sixties or below. The injury usually affects the extremities as a chronic injury of the skin and peripheral capillary circulation. Protecting the skin against exposure to cold for prolonged periods is the method for prevention and for treatment of chilblains.

Immersion foot results from wet cooling of the extremities. Although more common in wet feet exposed over hours or days at temperatures slightly above freezing, it can occur at higher temperatures if wet feet are exposed to cooling over prolonged periods. Prevention depends upon dry shoes and socks, and limited exposures with wet feet. Severe exposures will require emergency treatment.

Frostbite can affect hands, feet, ears and exposed parts of the face, and the severity of the frostbite can range from incipient frostbite, to superficial, to deep frostbite. Incipient frostbite, or frostnip, appears as a sudden blanching or whiteness of the skin, and often is not noticed by the person affected because it comes on slowly and is painless. If identified early, incipient frostbite can be treated effectively by warm hands or breath or by holding the nipped fingers in the armpits. No type of frostbite should be rubbed, and snow should not be used to rub frostbite.

Superficial frostbite causes the skin to have a white, waxy appearance and firm touch, with the tissue

beneath soft and resilient. Treatment is protection from the cold and steady and careful re-warming of the frostbitten area. Do not rub any frostbitten area.

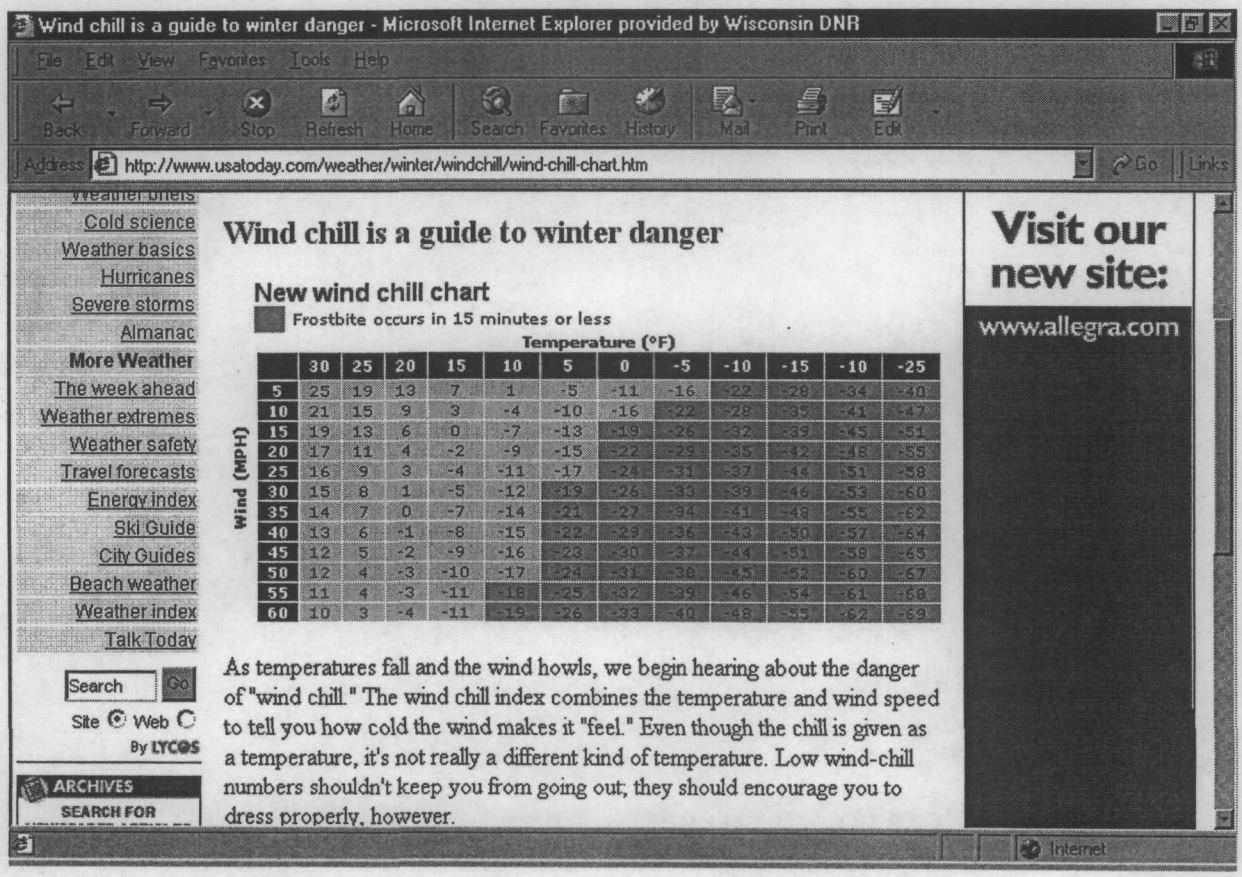
Deep frostbite usually involves the hands and feet, and is an extremely serious injury. Tissues are pale, cold, and solid, and emergency medical treatment is urgent. The injured person must be kept dry, given external warming, and watched to see if cardiopulmonary resuscitation is necessary.

Systemic Hypothermia

Severe and general body cooling, known as systemic hypothermia, can occur at temperatures well above freezing by exposure to low or rapidly dropping temperatures, or cold moisture, or to snow and ice. Fatigue, exertion, and hunger are contributing factors.

Generalized body cooling can progress through five stages: Shivering; apathy, sleepiness, listlessness, and indifference; unconsciousness, with slow respiratory rate and very slow pulse rate; freezing of the extremities; and death. Sustained shivering begins when the body core temperature falls below 95 degrees Fahrenheit. With continued cooling there will be stumbling, fumbling, clumsiness, slow reactions, mental confusion, and difficulty in speaking. If the cold conditions are extremely severe, death may occur within two hours of the first symptoms. Emergency treatment of hypothermia requires moving the person out of the wind, replacing wet clothing and providing external heat in any way possible, because the person is unable to generate sufficient body heat. Warm liquids and nourishing food should be provided if the person is conscious. However, since hypothermia is such a severe emergency, emergency medical treatment is needed promptly.

Wind Chill:



Wind (MPH)	30	25	20	15	10	5	0	-5	-10	-15	-10	-25
5	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40
10	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47
15	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51
20	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55
25	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58
30	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60
35	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62
40	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64
45	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65
50	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67
55	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68
60	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69

The two important factors which contribute to cold injuries are the temperature of the environment and the velocity of the wind. Thermal conductivity of the environment is the mechanism that allows for the effects of the extreme cold. The most common conductors of cold to samplers are moisture, such as wet hands, and metal, such as ladders and railings. Still air is a very poor conductor, but increased velocity increases the wind chill factor. Sampling operations should not generally be conducted when the wind chill temperature is below -20 degrees Fahrenheit.

ATTACHMENT 4
Observation Note Sheet

The Project Manager or other site workers may use this sheet to note any observations made related to health and safety. For example, in extreme weather, work periods may be shortened to protect workers from the hazards of heat and cold. You may record the duration of work periods here. In cases of medical concerns or emergencies, health care professionals may find information, such as the persons body temperature, or other observed conditions, helpful. This sheet should not take the place of filing an incident report or a Workman's Compensation claim, but information recorded here may be useful in remembering events at a work site.

ATTACHMENT 5

Map with Directions to the Site with Highlighted Route to the Hospital And Emergency Information

Nearest Hospital: Flambeau Hospital, 98 Sherry Avenue, Park Falls, WI., (715) 762-2484

Fire/Rescue/Police: 911

Complete Street Address of Site: 900 North First Avenue

Mobile/Cell Phone Number at Site: (715) 790-0187

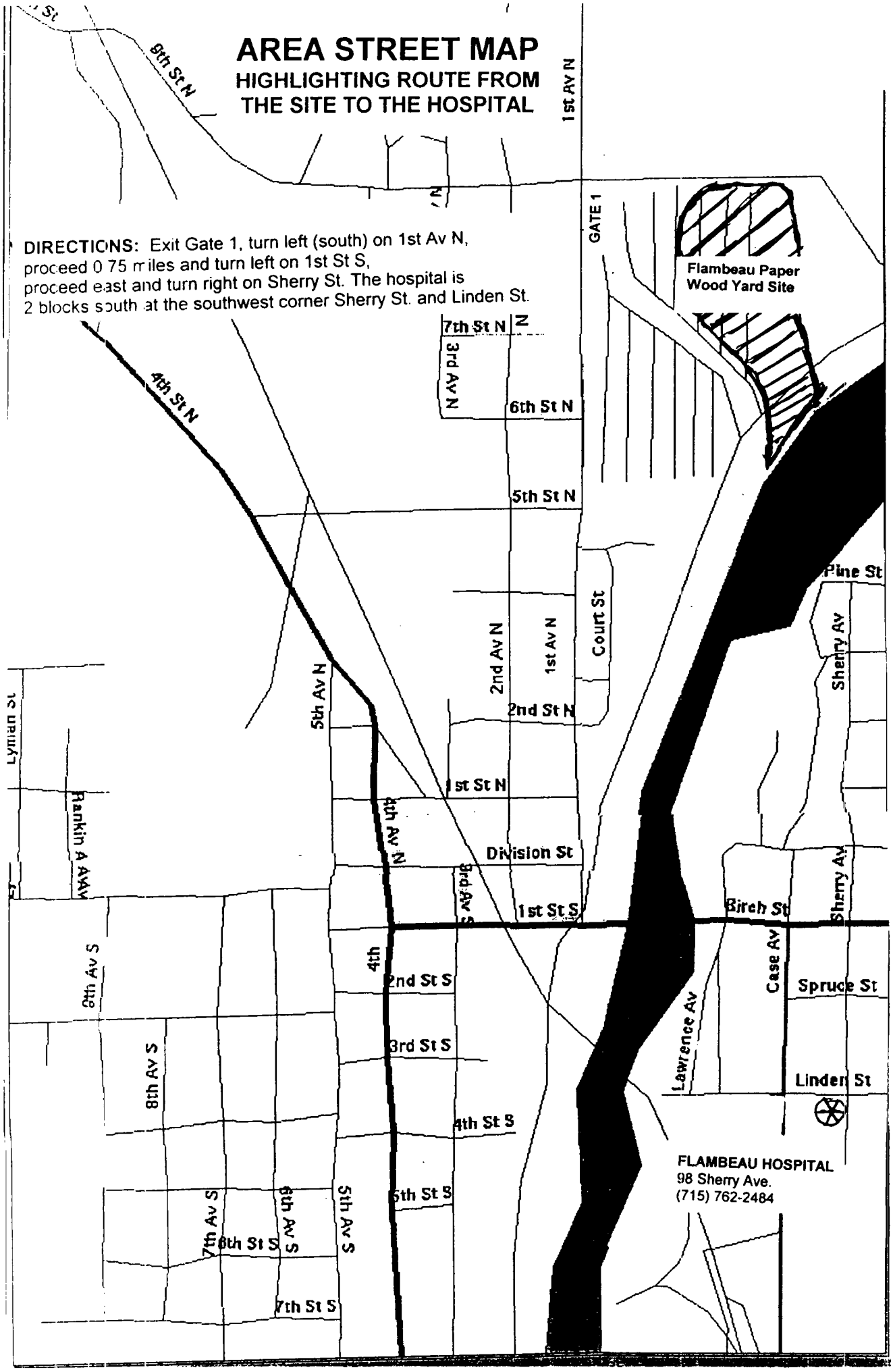
Driving Directions to the Site: from US Hwy. 13 in Park Falls. East on 9th Street to First Ave. Proceed through fenced/gated area (Gate 1) on the southeast corner of 9th Street and First Ave. The Site is located approximately 1,200 feet southeast of Gate 1 along the Flambeau River.

Poison Control Center-Madison: (608) 262-3702

Chemtrec: (800) 424-9300

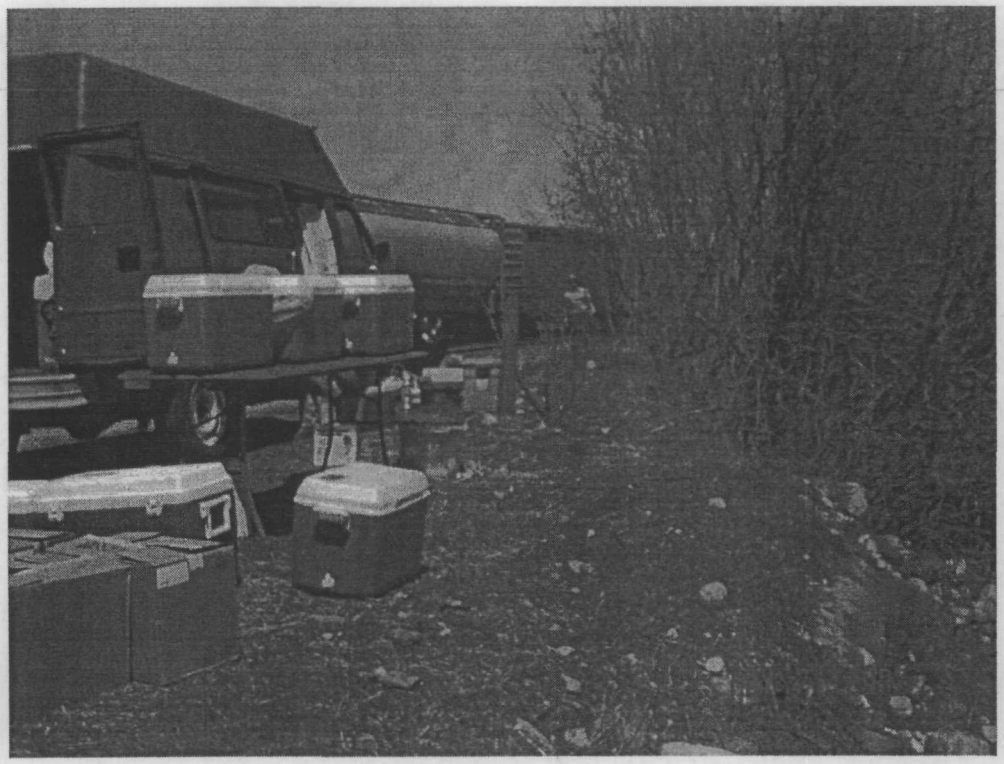
MED-TOX: (501) 370-8203

AREA STREET MAP
HIGHLIGHTING ROUTE FROM THE SITE TO THE HOSPITAL

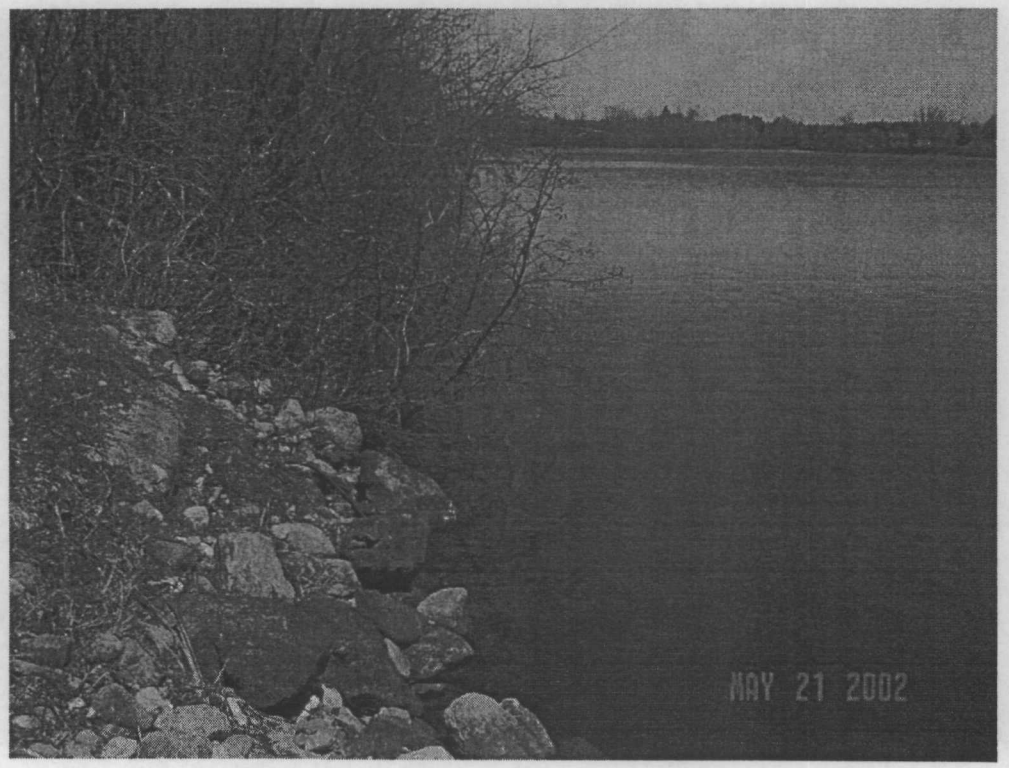


APPENDIX I

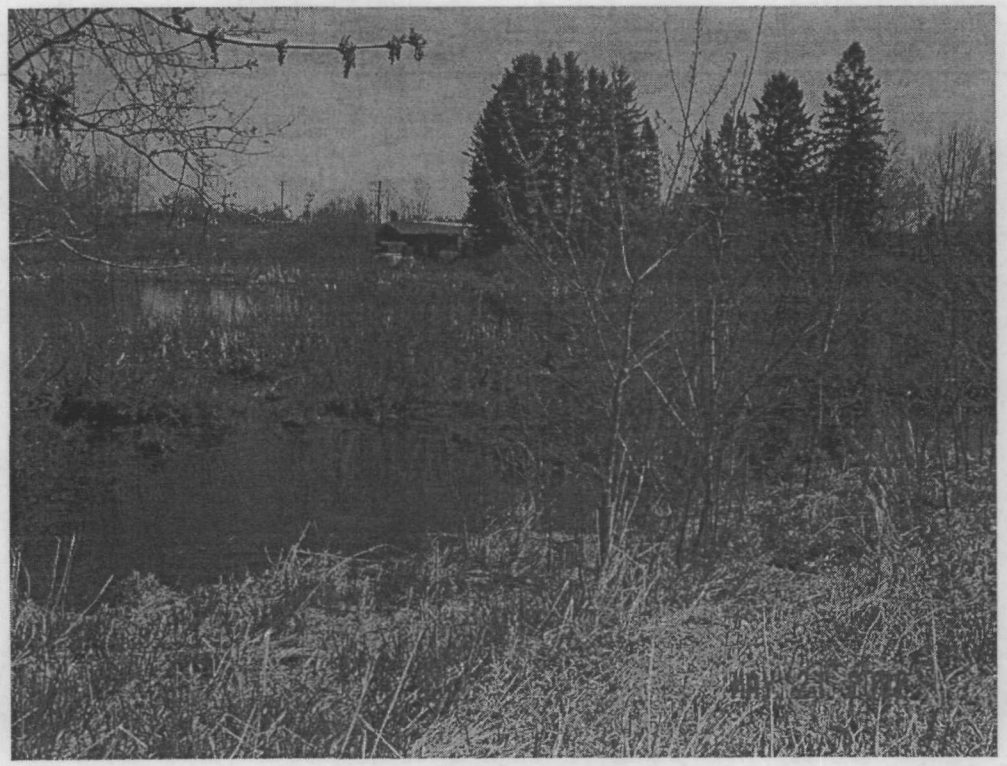
Photographic Log



SAMPLE PACKAGING, CONTAMINANT REDUCTION ZONE

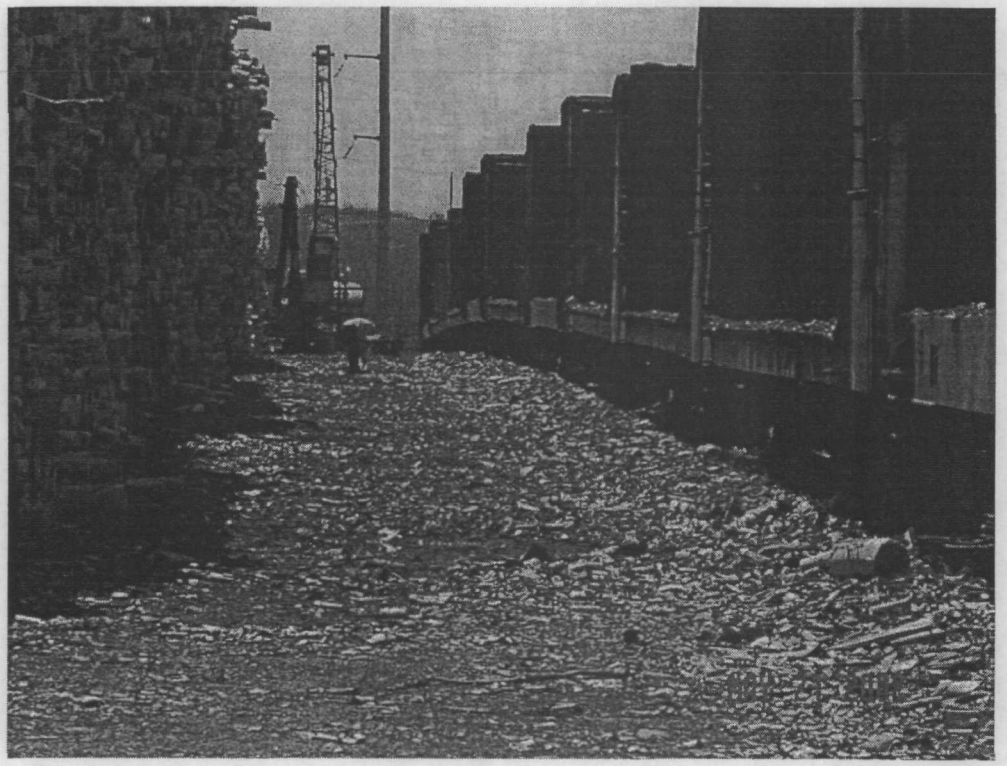


FLAMBEAU RIVER – SHORELINE EDGE

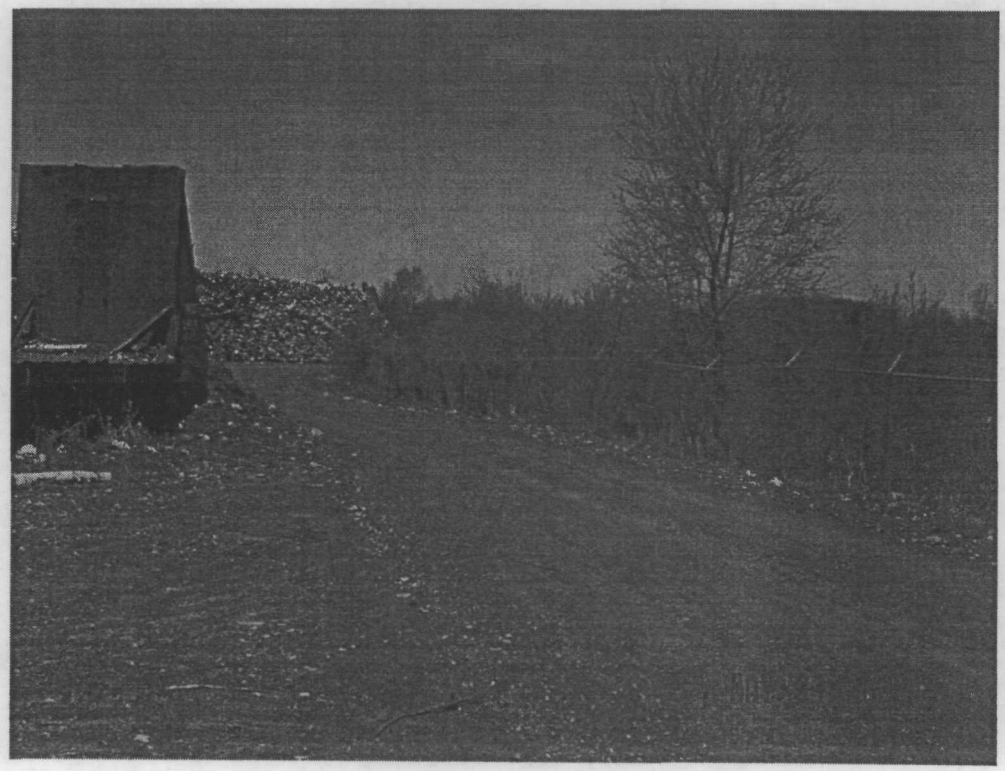


WETLAND ALONG NE PORTION OF SITE

WETLAND ALONG NE PORTION OF SITE. NO VISUAL POLLUTION PROBLEMS

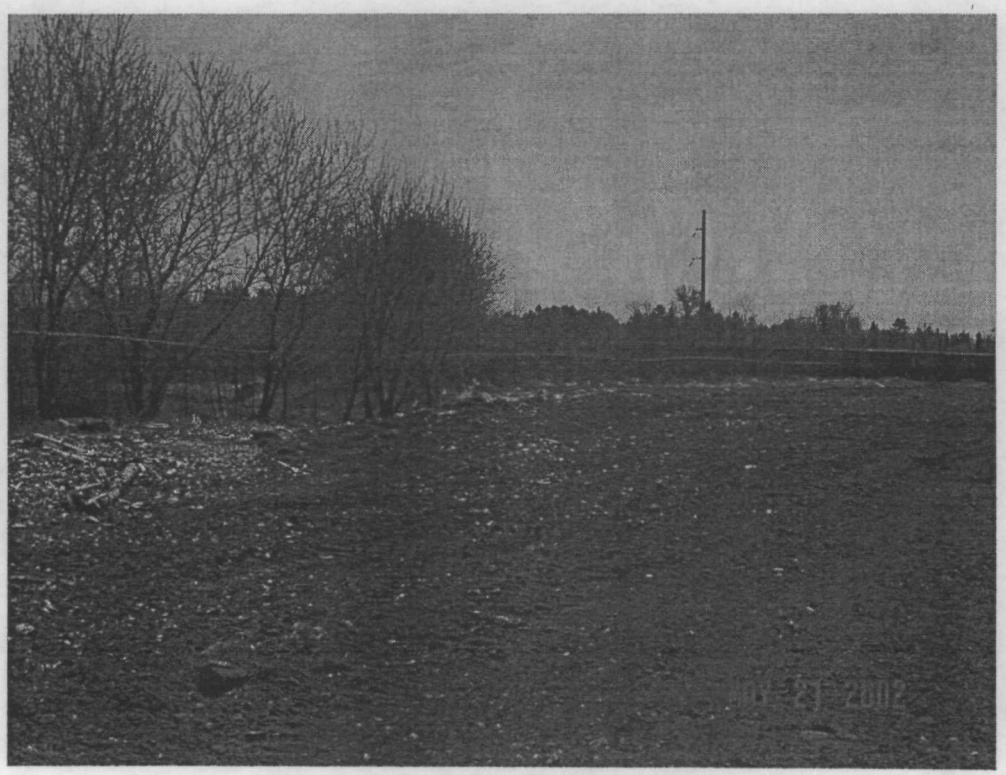


SITE VIEW FROM CENTER TOWARDS SOUTH

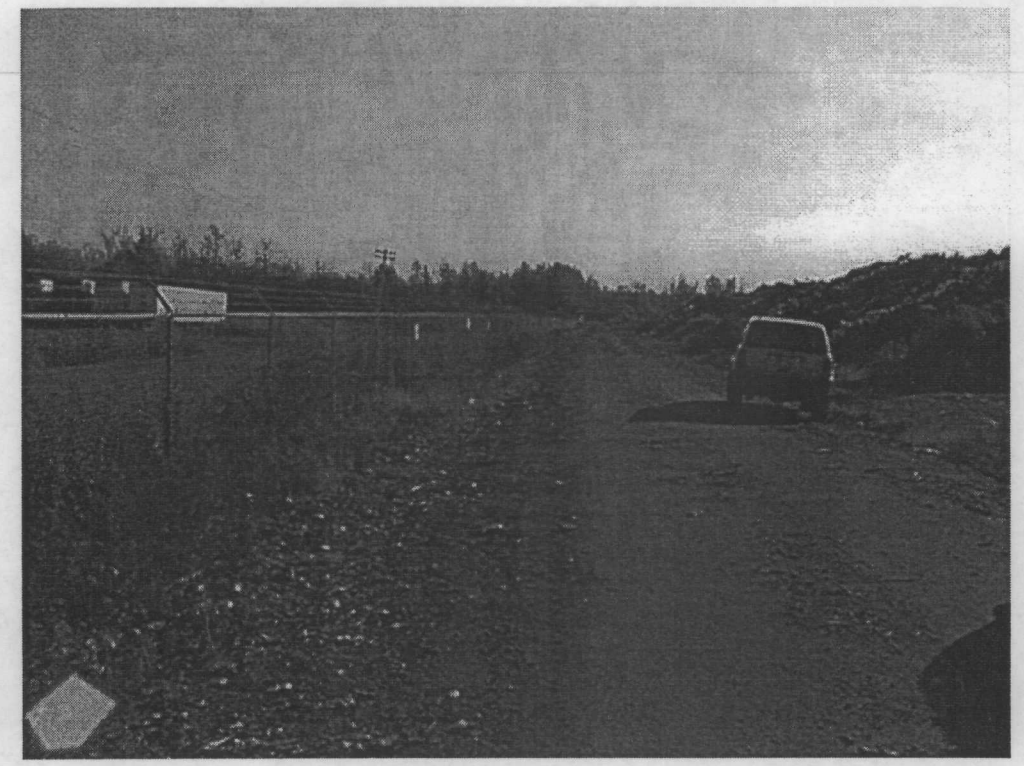


ACCESS CONTROL FENCE NE OF SITE

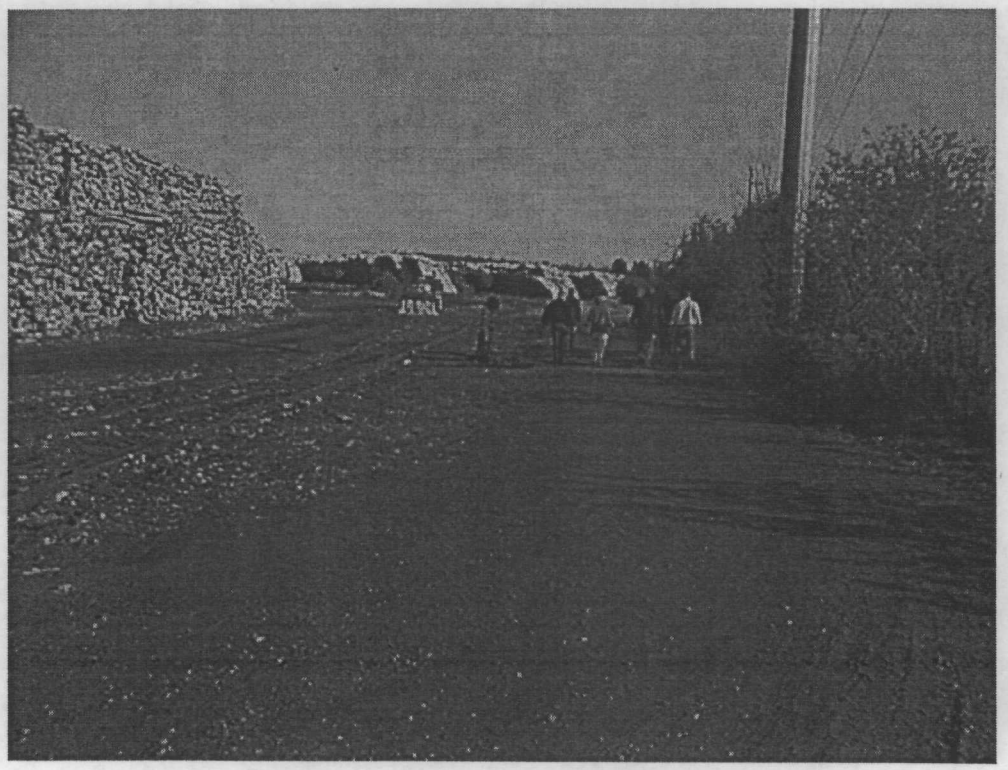
SITE VIEW FROM NE TOWARDS W



SITE VIEW FROM NE TOWARDS SE

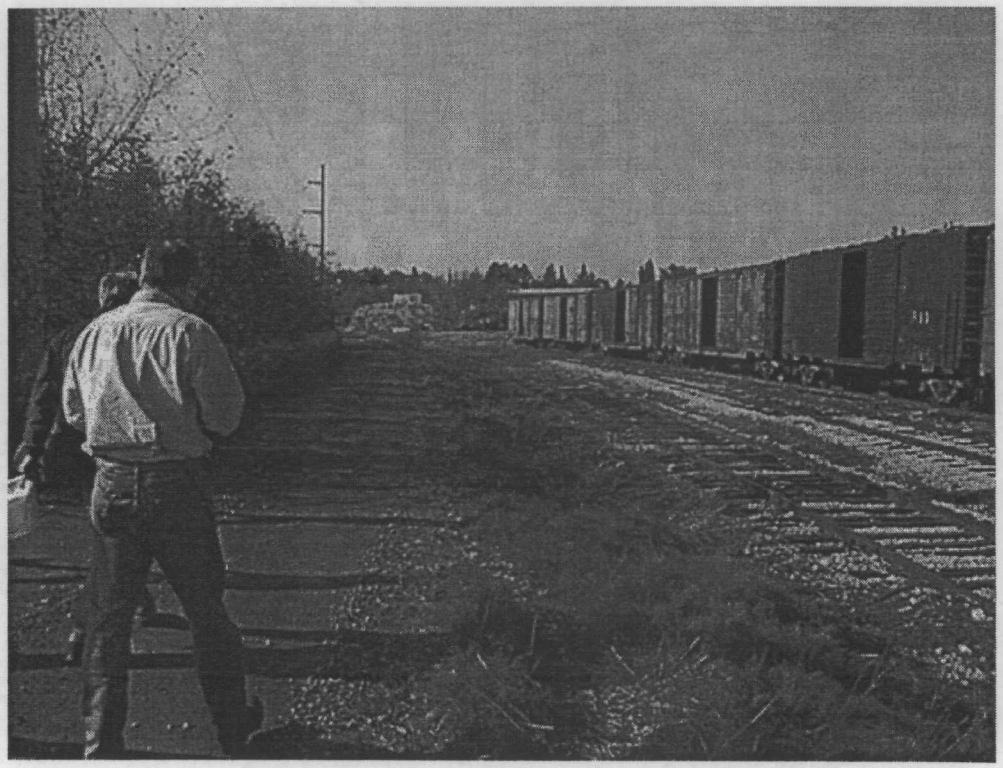


NORTH PROPERTY BOUNDARY. VIEW LOOKING EAST

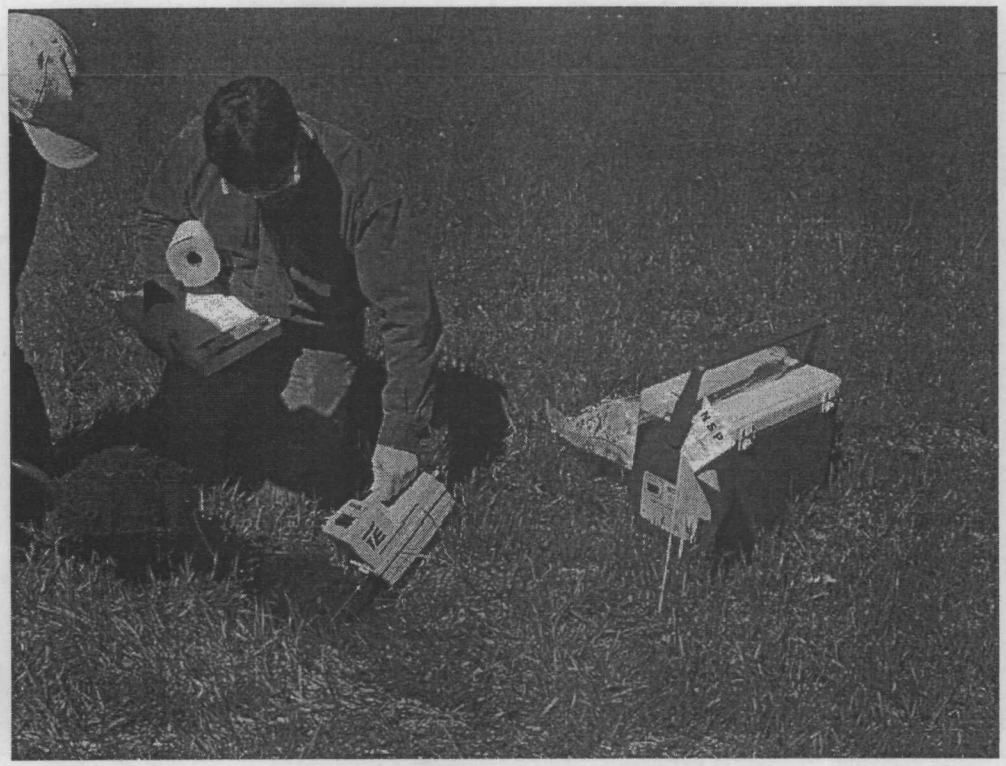


ACCESS RD ALONG FLAMBEAU RIVER. VIEW LOOKING NORTH

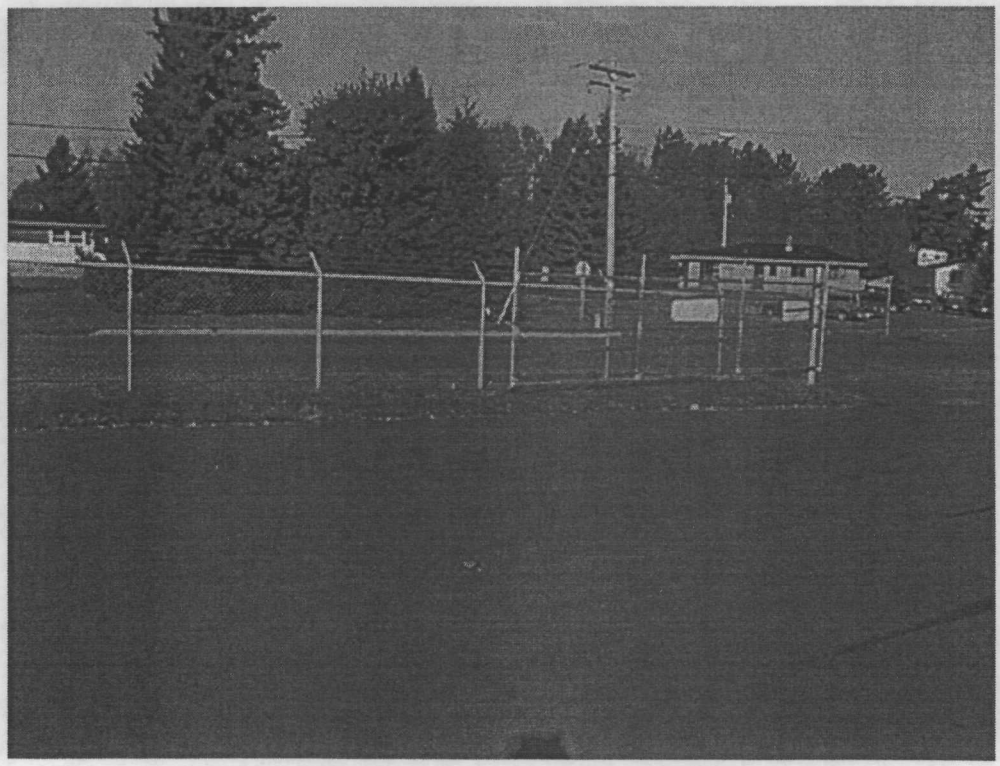
ACCESS ROAD AND FLAMBEAU - RIVER VIEW LOOKING EAST



ACCESS ROAD & RAILROAD SPUR LINES ALONG FLAMBEAU RIVER – VIEW LOOKING SOUTH



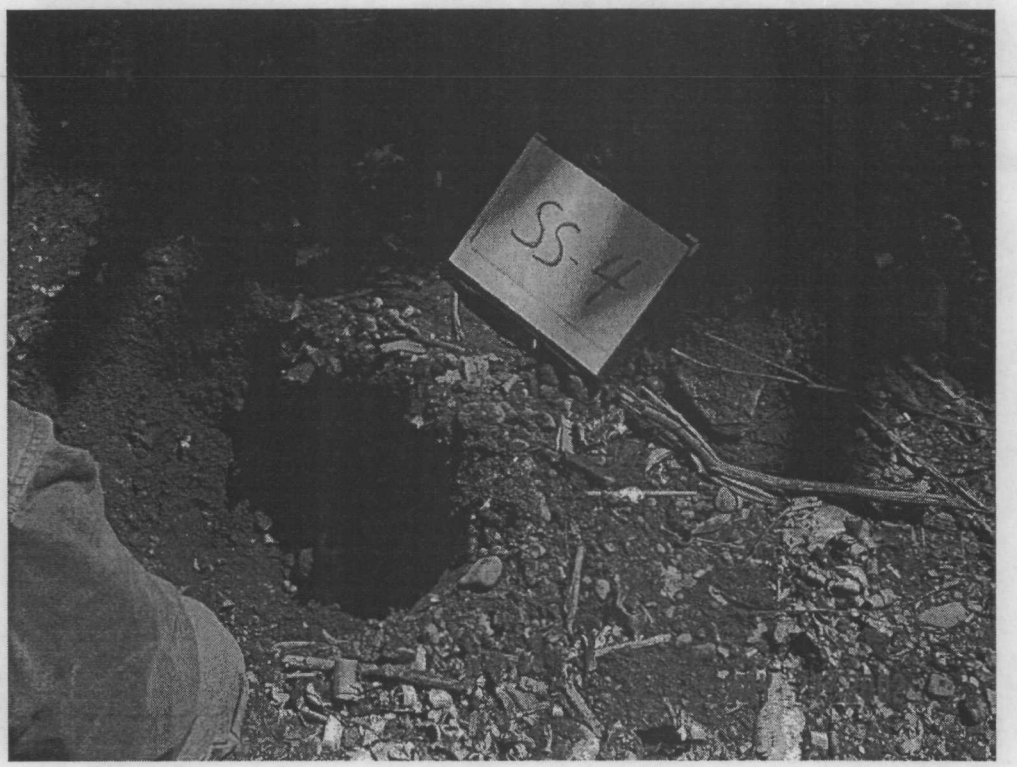
AIR SAMPLING SOIL SAMPLES WITH PID



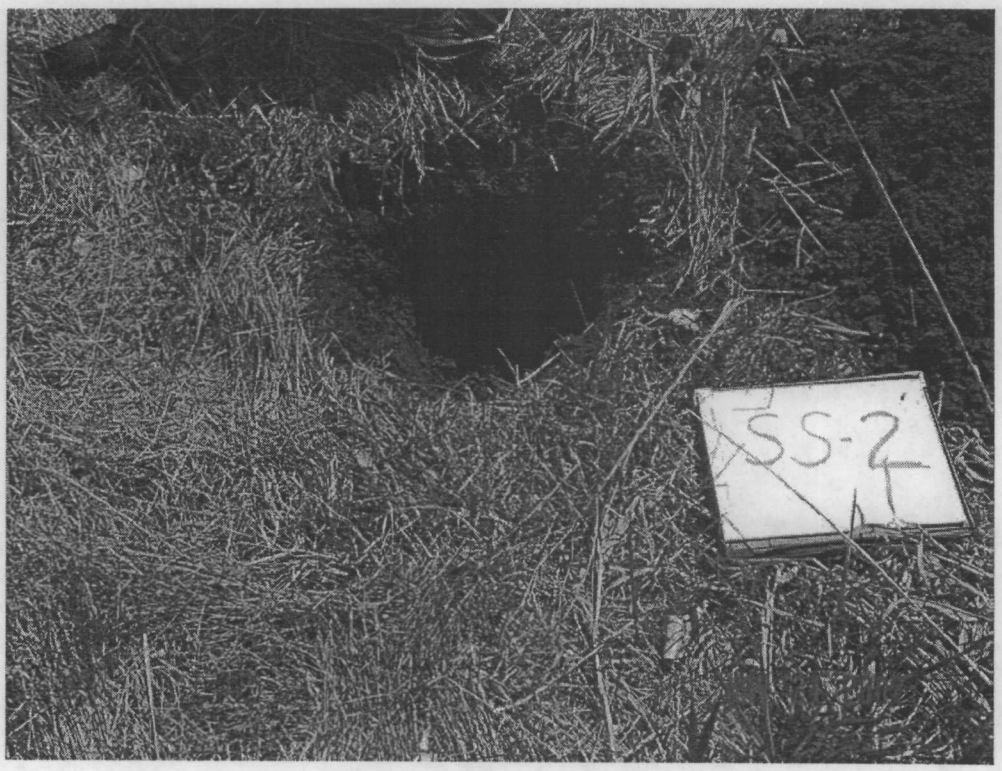
SITE FENCING – RESTRICTED SITE ACCESS. GATE AT NW CORNER OF SITE.
VIEW LOOKING WEST

SOIL SAMPLE COLLECTING

SOIL SAMPLE SS-1



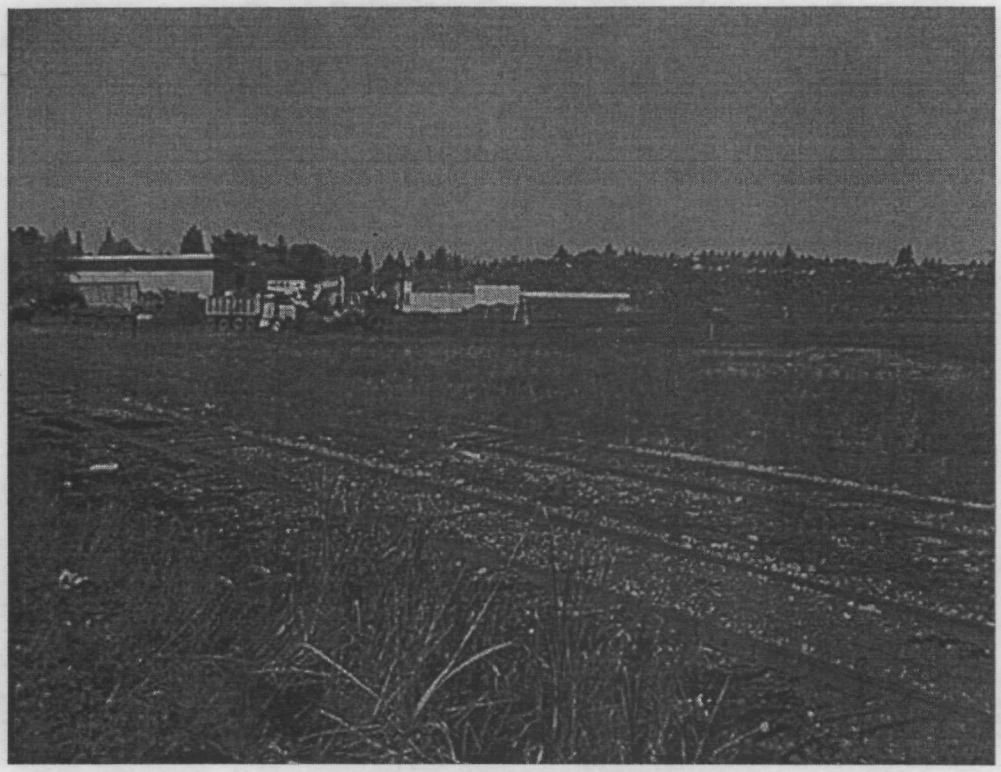
SAMPLING LOCATION SS-4



SAMPLE LOCATION SS-2

SAMPLE LOCATION SS-3

SOIL SAMPLE COLLECTING

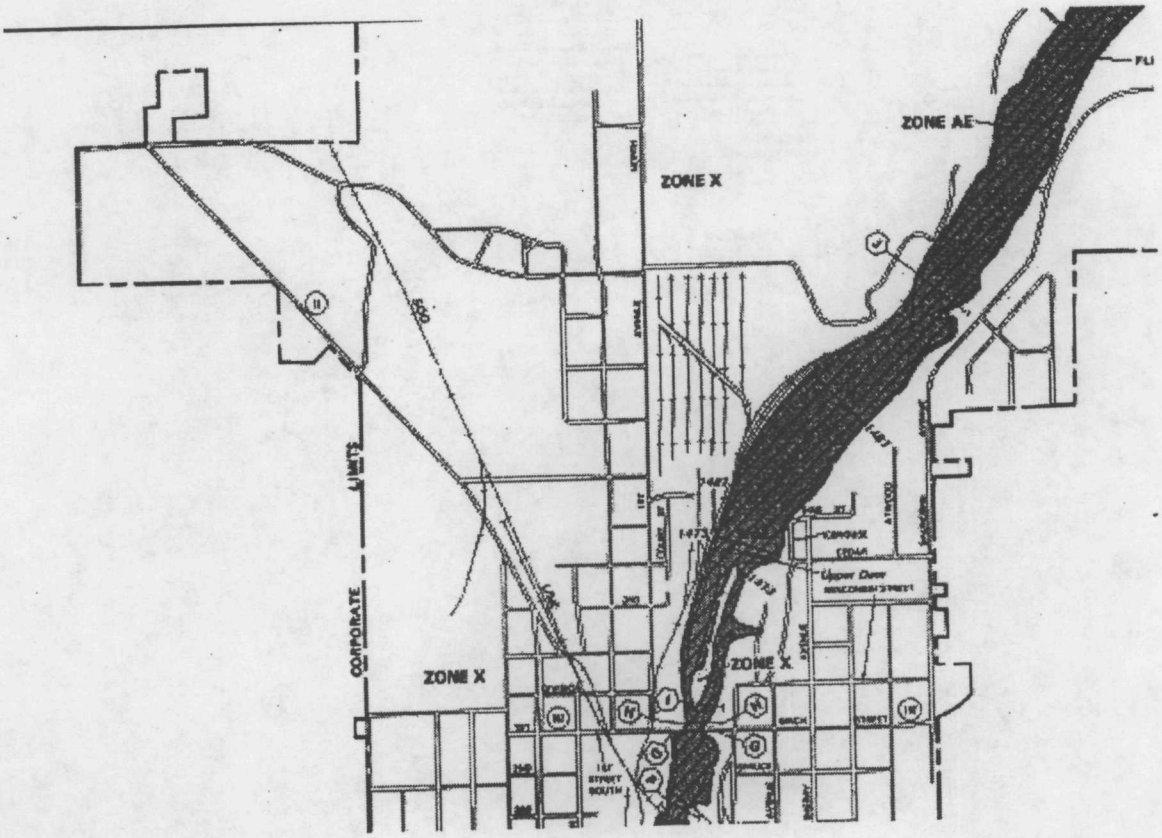


NEW WOOD CHIPPING FACILITY – SE PART OF THE SITE - VIEW LOOKING WEST

APPENDIX J

FEMA Issued Flood Insurance Map

PARK FALLS FLOOD PLAIN MAP



Section of FEMA issued Flood Insurance Map
ID #5503440005B.P dated February 2, 1989.

ZONE VE Coastal flood with velocity hazard (
base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 10
with average depths of less than 1
drainage areas less than 1 square mi
protected by levees from 100-yea

OTHER AREAS

ZONE X Areas determined to be outside 50
plain.

ZONE D Areas in which flood hazards are ur

UNDEVELOPED COASTAL BARRIERS

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Fl
Zones, and Boundary Dividin
Different Coastal Base Flood Eleva
Special Flood Hazard Zone.

APPENDIX K

Complete Analytical Sampling Results

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: August 21, 2002

TO: Bill Schultz - NoR

FROM: Charlene Khazae - RR/3

SUBJECT: Flambeau Paper Corp. Data Summary

Attached is the completed data summary for the Site Assessment activities at the above site. Included with this summary are the sample summary tables, data summary tables, and the WDNR narrative. Also included for your review are the laboratory and EPA case narratives listing all the QC results and their possible effect on data quality, along with the volatile and semivolatile tentatively identified compound reporting sheets for soil and groundwater and estimated concentrations.

Where ever possible, electronic copies of the enclosed material have been transferred to the disks provided. Data packages for organic and inorganic groundwater data from EPA's Central Regional Laboratory were available in hard copy, only. Photocopies of CRL data are included in the folder.

As always, you may contact me if you have any questions regarding this data review.

Cc: Mike Netzer – RR/3, letter only
Amy Walden – RR/3, letter only
Mark Gordon – RR/3, letter only
John Burnett – RR/3, letter only

WV DEPT OF NATURAL RESOURCES
AUG 29 2002
Rhinelander Service Center

Printed on Recycled Paper

FLAMBEAU PAPER- Data Summary Narrative

General Information

Five soil samples and eight water samples were collected from this project and submitted for analysis.

The five soil samples were collected for the complete Target Compound List (TCL) analyses of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and PCB/pesticides and the complete target analyte list (TAL) analyses of metals and cyanide.

Seven of the eight groundwater samples were analyzed for the complete TCL analyses of organic compounds and complete TAL analyses of inorganic analytes. In addition, one trip blank was collected for VOC analysis only.

Soil samples analyses were performed at laboratories that participate in the USEPA's Contract Laboratory Program (CLP). CLP generated data received a Level III data review by an EPA contractor. These data packages include data summary tables and validators' narratives listing all pertinent QC results and their possible effect on data quality. Also included are reporting sheets for the VOC and SVOC tentatively identified compounds (TICs) and their estimated concentrations. The validators' narratives and applicable TIC reporting sheets are included with this data summary for review.

The analyses for the groundwater were performed at EPA Region 5's Central Regional Laboratory (CRL). The data was reviewed internally at CRL. Data summaries and narratives from CRL are provided along with the WDNR narrative. The data from several CRL summaries has been tabulated by WDNR into a combined summary as an aid to the data user.

WDNR prepared sample summaries for soil and water (Tables I and II respectively). Where necessary, the validators' narratives and data summary tables, prepared by the EPA contractor, have been modified by WDNR to aid the data user. Modifications in both text and tables appear in blue font.

SOILS

Organic Soils

VOCs

Laboratory instruments must be initially calibrated using a series of standards of known concentrations. This calibration is checked throughout the analysis by using one standard of known concentrations. If the compounds of these standards are not detected within appropriate ranges of the true values, all samples associated with the standards are flagged for the compounds outside the QC limits.

SVOCs

Due to calibration outliers, positive results are estimated (J). Non-detect analytical results are estimated (UJ) for the following compounds in all soil samples:

Benzaldehyde; Hexachlorocyclopentadiene; 2,4-Dinitrophenol; 3,3'-Dichlorobenzene; bis(2-Ethylhexyl) phthalate; Di-n-octylphthalate.

The following soil samples are associated with laboratory method blanks that contain bis(2-Ethylhexyl)phthalate, a common laboratory contaminant. The presence of a common laboratory contaminant in the samples has been flagged as (U) in sample SS-1 (E1YJ8) and as (UJ) in sample SS-DUP (E1YK2) when the sample concentration is less than 10 times the concentration in the associated blank.

The following sample has surrogate recoveries below the lower limit of the lab QC criteria. Positive results are estimated (J) and non-detected results are flagged (UJ) for:

SS-2 (E1YJ9).

A number of samples measured analyte concentrations below their respective contract required quantitation limits (CRQLs). All positive results detected below the CRQL are estimated (J). For a complete listing of these samples and affected compounds, see the EPA validator's case narrative.

Pesticide/PCBs

The following sample has a surrogate recovery that exceeds the upper limit of the lab QC criteria. Positive results are estimated (J) and non-detected results are not flagged for:

SS-3 (E1YK0).

Inorganic Soils Data

The following soil samples are associated with a negative blank concentration whose absolute value is greater than the instrument detection limit (IDL), but less than 5X the absolute value of the blank concentration.

Positive results for Sodium are estimated (J) for soil samples SS-1 (ME1YJ8) and SS-2 (ME1YJ9).

Positive results for Cyanide are estimated (J) for samples:
SS-1 (ME1YJ8), SS-3 (ME1YK0)

Non-detect results for Cyanide are flagged (UJ) for samples:
SS-2 (ME1YJ9), SS-4 (ME1YK1), SS-DUP (ME1YK2)

GROUNDWATER

Organic Groundwater Data

VOCs

Due to calibration outliers, positive results are estimated (J) and non-detects are estimated (UJ) for the following compounds in all water samples:

> Bromomethane; Chloroethane; Chloromethane; Dichlorodifluoromethane; Methylene chloride; n-Butylbenzene; p-Isopropyltoluene; Trichlorotrifluoroethane; Vinyl Chloride; 1,3,5-Trimethylbenzene; and 1,2,4-Trimethylbenzene.

For the matrix spike/ matrix spike duplicate (MS/MSD) samples, either accuracy (percent recoveries) or precision (relative percent difference-RPD) were outside QC limits. Positive results are estimated (J) and non-detected results are estimated (UJ) in the unspiked groundwater sample MW-04 (2002XF01S04) for the following compounds:

> Bromobenzene; Methylene chloride; and 1,2-Dibromoethane.

The field rinsate blank (R02) contained Acetone; 2-Butanone; and 2-Hexanone. Likewise, the trip blank contained Acetone and 2-Hexanone. Monitoring well sample MW-04 (S04) and its field duplicate, MW04DUP (D04) contained Acetone, a common laboratory contaminant. For HRS purposes, only, detects of Acetone in the investigative samples are deemed as undetected when the concentration of the contaminant in the sample is less than ten times the concentration in the associated blank.

SVOCs

Due to calibration outliers, positive results are estimated (J). Non-detects are estimated (UJ) for the following compounds in all groundwater samples:

> Benzoic acid; Hexachlorocyclopentadiene; 2,4-Dinitrophenol; and Pentachlorophenol.

The compound bis (2-Ethylhexyl)phthalate was detected at 3.0ug/L in a lab prepared method blank. The (B) flag was applied by the lab to all results. This compound was also present in the field rinsate blank at 13.9 ug/L. According to EPA's National Functional Guidelines, for monitoring well samples, results indicating the presence of a common laboratory contaminant such as bis(2-Ethylhexyl)phthalate should be flagged as undetected (U) when the sample concentration is less than 10 times the concentration in the associated blank. WDNR has applied this 10X rule by adding the (U) qualifier to the applicable results. The same corrective action has been applied to private well data for HRS scoring purposes, only. However, positive results in private or municipal wells that exceed NR140 groundwater standards may require confirmational analysis.

Results from analysis of the matrix spike/matrix spike duplicate (MS/MSD) analysis were inconsistent with previous QC verifications. In this case, the results from column #1 were better than those of column #2. The lab attributed this phenomenon to "an increased detector response over time". As a result, since none were detected, all compounds were flagged (UJ) for all associated samples.

Inorganic Groundwater Data

Antimony was measured in the RINSATE- "2002XF01R02" at just above the reporting limit of 4ug/L. Low-level field contamination of the rinsate sample is suspected but since it was isolated to the rinsate itself, no flags were applied to the other samples for Antimony.

The presence of interference required some samples to be diluted in order to meet analytical spike recovery criteria and detection limits have been raised accordingly. This applies to Selenium for MW-04 field duplicate (D04) and MW-05 (S05) and Thallium for MW-04 (S04).

All sample results for Vanadium are flagged (B). Vanadium was found in the laboratory method blank. Positive sample results for sample MW-04DUP (2002XF01D04) are flagged "BJ" and are understood to be estimated due to a possible high bias.

Field duplicates are noted on the sample summary Tables (I and II) and the data summary tables. Results are not qualified based on the results of field duplicates. For HRS scoring purposes, however, the lower of the two values should be used.

A number of sample results for several analytes in all types of inorganic data are reported between the method detection limit and the lowest concentration of the calibration curve. These sample results are flagged "M". All data flagged "M" are understood to be estimated.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Data
Received for Review on June 5, 2002

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: WDNR

We have reviewed the data for the following case:

SITE NAME: Flambeau Paper Corp. (WI)
CASE NUMBER: 30529 SDG NUMBER: E1YJ8
Number and Type of Samples: 5 Soils
Sample Numbers: E1YJ8-9, E1YK0-2
Laboratory: Envirosystems Hrs. for Review: _____

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SMF-4J

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Case Number : 30529 **SDG Number: E1YJ8**
Site Name: Flambeau Paper Corp (WI) **Laboratory: Envirosystems**

1. HOLDING TIME

No problems found for this qualification.

2. GC/MS TUNING AND GC INSTRUMENT PERFORMANCE

No problems found for this qualification.

3. CALIBRATION

The following volatile samples are associated with an initial calibration with relative response factor (RRFs) outside primary criteria. All positive results are estimated "J" and non-detected results are unusable "R".

1,2-Dibromo-3-chloropropane
E1YJ8, E1YJ9, E1YK0, E1YK0RE, E1YK1, EIYK1MS, E1YK1MSD, E1YK2, VBLKFQ, VHBLKF3

The following volatile samples are associated with a continuing calibration whose corresponding initial calibration has percent relative standard deviation (%RSD) outside the primary criteria. Hit are qualified "J" and non-detects are flagged "UJ".

Chloroethane
E1YJ8, E1YJ9, E1YK0, E1YK0RE, E1YK1, EIYK1MS, E1YK1MSD, E1YK2, VBLKFQ, VHBLKF3

The following volatile samples are associated with a continuing calibration whose corresponding initial calibration has percent difference (%D) outside the primary criteria. Hit are qualified "J" and non-detects are flagged "UJ".

Dichlorodifluoromethane, Chloromethane, Chloroethane, 1,1-Dichloroethene, 1,1,2-Trichloro-1,2,2-trifluoroethane, Acetone, Carbon Disulfide, 1,2,4-Trichlorobenzene
E1YJ8, E1YJ9, E1YK0, E1YK0RE, E1YK1, EIYK1MS, E1YK1MSD, E1YK2, VHBLKF3

The following semivolatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria. Hits are qualified "J" and non-detects are qualified "UJ".

Benzaldehyde, Hexachlorocyclopentadiene, 2,4-Dinitrophenol, 3,3'-Dichlorobenzidine, bis(2-Ethylhexyl)phthalate, Di-n-octylphthalate
E1YJ8, E1YJ9, E1YK0, E1YK1, E1YK1MS, E1YK1MSD, E1YK2, SBLK05

4. BLANKS

The following volatile samples have analyte concentrations reported below the CRQL and less than or equal to ten times (10X) the associated method blank concentration. Reported sample

Reviewed By: Richard Baltrus/IITRI-ESAT
Date: July 23, 2002

Case Number : 30529 **SDG Number: E1YJ8**
Site Name: Flambeau Paper Corp (WI) **Laboratory: Envirosystems**

E1YK1MSD
Pentachlorophenol

The presence of Pentachlorophenol in the unspiked sample E1YK1 is qualified "J" and non-detects are not qualified.

7. FIELD BLANK AND FIELD DUPLICATE

No samples were identified as field blanks. Sample E1YK2 is a field duplicate of Sample E1YK1. Results are not qualified based upon the results of the field blank or field duplicates.

Volatile Analytes	E1YK1	E1YK2
	µg / KG	µg / KG
Acetone	27	23
2-Butanone	6	

There were no TICs found.

Semivolatile Analytes	E1YK1	E1YK2
	µg / KG	µg / KG
Fluoranthene	80	82
Pyrene	92	140
Benzo (b) fluoranthene	39	
Benzo (k) fluoranthene	39	
TICs	24	23

8. INTERNAL STANDARDS

The following volatile samples have internal standard area count that are outside the lower limit of primary criteria. Hits are qualified "J" and non-detects are qualified "UJ".

E1YK0, E1YK0RE
4-Methyl-2-pentanone, Toluene, Tetrachloroethene, 2-Hexanone, 1,2-Dibromoethane, Chlorobenzene, Ethylbenzene, Xylenes (total), Styrene, Isopropylbenzene, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene

Reviewed By: Richard Baltrus/IITRI-ESAT
Date: July 23, 2002

Case Number : 30529 **SDG Number: E1YJ8**
Site Name: Flambeau Paper Corp (WI) **Laboratory: Envirosystems**

The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits are qualified "J".

E1YK1MS
gamma-BHC (Lindane)

11. SYSTEM PERFORMANCE

GC/MS baseline indicated acceptable performance. The GC baseline for the pesticide analysis was acceptable.

12. ADDITIONAL INFORMATION

None.

Reviewed By: Richard Baltrus/IITRI-ESAT
Date: July 23, 2002

Volatile Analysis Data - E1YJ8
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN ALKANE	9.41	7.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 1

Volatile Analysis Data - E1YJ9
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN ALKANE	9.40	11.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 2

Volatile Analysis Data - E1YK0
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN ALKANE	9.41	19.000	J
	UNKNOWN ALKANE	23.74	9.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 3

Volatile Analysis Data - E1YK1
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN ALKANE	9.41	13.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 4

Volatile Analysis Data - E1YK0RE
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
3983-03-7	CYCLOHEXENE,1-(2-METHYLPROPYL)-	22.29	15.000	NJ

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 5

Semivolatile Analysis Data - E1YJ8
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	16.18	77.000	J
	UNKNOWN	19.17	130.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 6

Semivolatile Analysis Data - E1YJ9
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	20.79	120.000	J
	UNKNOWN	21.14	220.000	J
	UNKNOWN	25.60	160.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 7

Semivolatile Analysis Data - E1YK2
Tentatively Identified Compounds

CASE NO: 30529 LABORATORY: ENVIROSYSTEMS
SDG NO: E1YJ8

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	13.98	88.000	J
	UNKNOWN	14.24	240.000	J
	UNKNOWN	14.39	93.000	J
	UNKNOWN	14.55	140.000	J
	UNKNOWN	15.18	140.000	J
	UNKNOWN	20.33	89.000	J
	UNKNOWN	21.55	330.000	J
	UNKNOWN	21.63	200.000	J
	UNKNOWN	22.15	190.000	J
	UNKNOWN	23.31	260.000	J
	UNKNOWN	25.60	730.000	J
	UNKNOWN	27.11	390.000	J
	UNKNOWN	27.54	860.000	J
	UNKNOWN	28.49	650.000	J
	UNKNOWN	29.54	210.000	J
	UNKNOWN	30.88	3300.000	J
83-47-6	.GAMMA.-SITOSTEROL	30.97	2300.000	NJ
	UNKNOWN	31.49	4700.000	J
	UNKNOWN	31.72	420.000	J
	UNKNOWN	31.83	2800.000	J
	UNKNOWN	32.00	1600.000	J
1058-61-3	STIGMAST-4-EN-3-ONE	32.19	3400.000	NJ
	UNKNOWN	32.32	1700.000	J

FILE NAME: E1YJ8.SDG DATE: 06/05/2002 TIME: 15:35 CADRE99 PAGE: 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: July 24, 2002

SUBJECT: Review of Data
Received for Review on May 31, 2002

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: WDNR

We have reviewed the data for this case. We have also reviewed the CADRE generated validation files.

SITE NAME: Flambeau Paper Corp.

CASE NUMBER: 30529 SDG NUMBER: ME1YJ8

Number and Type of Samples: 5 soils

Sample Numbers: ME1YJ8,9; ME1YK0-2

Laboratory: Compuchem Hrs. for Review: _____

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Case Number : 30529 SDG Number: ME1YJ8
Site Name: Flambeau Paper Corp. Laboratory: Compuchem

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Five soil samples numbered ME1YJ8, ME1YJ9, and ME1YK0-2 were collected on May 21, 2002. The lab received the samples on May 22, 2002 in good condition. All samples were analyzed for metals and cyanide. All samples were analyzed using CLP SOW ILM04.1 analysis procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using the MIDI Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectrometric procedure.

Reviewed By: J. Ganz
Date: July 24, 2002

the absolute value of the blank concentration. Hits are qualified "J". Some non-detect concentration values are sufficiently high that the detection limit may be elevated. These non-detects are qualified "UJ".

ME1YJ8
Sodium, Cyanide

ME1YJ9
Sodium, Cyanide

ME1YK0
Cyanide

ME1YK1
Cyanide

ME1YK2
Cyanide

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Antimony
ME1YJ8, ME1YK0, ME1YK1

Beryllium
ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

Selenium
ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

Sodium
ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

Cyanide
ME1YJ8, ME1YK0

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

MATRIX SPIKE CRITERIA

Reviewed By: J. Ganz
Date: July 24, 2002

Potassium
ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

The following result is associated with a replicate RSD that was excessively high (>20%), indicating interference or poor sample aspiration precision. Hits are qualified "J".

Selenium
ME1YJ8

7. GFAA ANALYSIS

No GFAA analyses were performed for this case.

8. SAMPLE RESULTS

The following results are associated with negative concentrations whose absolute values were much greater than the CRDL.
Non-detects are qualified "R".

Thallium
ME1YJ8, ME1YJ9, ME1YK0, ME1YK1, ME1YK2

All data, except those qualified above, are acceptable.

Reviewed By: J. Ganz
Date: July 24, 2002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 21 2002

Subject: Review of Region 5 Data for **Flambeau Paper (Park Falls WI)**

From: **Richard Baltrus, Chemist, ESAT/IITRI**
Contractor to Region 5 Central Regional Laboratory
Submitted to EPA: 6/20/02

To: Charlene Khazae
WDNR

Attached are the results for:

CRL data set number: **20020077 Flambeau Paper (Park Falls WI)**

Samples analyzed for: **Mercury**

Results are reported for sample designations: **2002XF01S01-S05, D04, R02**

Sylvia Griffin JUN 21/2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 21/2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____ / /

Received by and Date

Comments:

Rev. 4/10/02

Parameter: Mercury
Method: 245.2*DNS (AIG044 dated 01/23/01)
Analyst: Richard Baltrus
Date: June 14, 2002

Data Set: 20020077 000006
TDF: 5-02-053
JOB: 249-0-1476-102-029-001
Task Order: 05-0-02

NARRATIVE

Seven (7) water samples from the Flambeau Paper (Park Falls, WI) site (data set 20020077) were collected on May 21, 2002. The samples were received properly preserved on May 23, 2002. The water samples are stated with the sample number and station identification as follows: 2002XF01S01 (MW-01), 2002XF01S02 (MW-02), 2002XF01S03 (MW-03), 2002XF01S04 (MW-04), 2002XF01S05 (MW-05), 2002XF01D04 (MW-04DUP), and 2002XF01R02 (Rinsate) These seven samples were assigned to ESAT for mercury analysis. All samples were analyzed within the 28 day holding time limit.

The samples were digested on June 10, 2002 and analyzed on June 11, 2002. The samples were digested with data set 20020074 and P & A. The data sets were digested by adding the acid mixture, potassium permanganate, and potassium persulfate manually. The samples were covered and the autodigestion unit was then used for heating only. After the samples cooled the hydroxylamine solution was manually added.

All QC were within limits; all results are acceptable.

Details of this analysis can be found in the EPA instrument logbook, and IITRI logbook number C31623 , pages 7 and 9.

Samples pair 2002XF01S04/D04 are field duplicates which show good correlation. Sample 2002XF01R02 is a Rinsate blank which shows no contamination.

The narrative, spreadsheet, QC summary and raw data results are stored in file folder: r5crl\vol2\iitri-aig\rbaltrus\PSAMercury\Hg Water\20020077

At this time RLIMS is not available, therefore WordPerfect reports were generated. Time must be allotted in the future to enter the data into RLIMS when it does become available.

Richard 6/20/02

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM MINERALS-NUTRIENTS

DIVISION/BRANCH: SUPERFUND SAMPLING DATE: 05/21/02 LAB ARRIVAL DATE: 05/23/02 DUE DATE: 06/20/02
DU NUMBER: 50102D DATASET NUMBER: 20020077 STUDY: Flambeau Paper (Park Fall ,WI) PRIORITY: Routine LABORATORY :ESAT

	CRL LOG	SAMPLE	Mercury ug/l	Flag	
1	2002XF01S01	MW-01	0.5	U	
2	2002XF01S02	MW-02	0.5	U	
3	2002XF01S03	MW-03	0.5	U	
4	2002XF01S04	MW-04	0.5	U	
5	2002XF01D04	MW-04 DUP	0.5	U	
6	2002XF01S05	MW-05	0.5	U	
7	2002XF01R02	RINSATE	0.5	U	
8					
9					
10					
11					
12					
13					
14					
15					
16					
DATE OF ANALYSIS			June 11, 2002		
ANALYST		9/20/02	R. Baltrus		

000008

Reviewed by: M. Mattson Date: 6 / 20 / 02

2002077

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM METALS

501020

DIVISION/BRANCH SUPERFUND SAMPLING DATE 5/21/02 LAB ARRIVAL DATE 5/23/02 DUE DATE 6/24/02

MU NUMBER 501020 DATASET NUMBER 2002077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	MATRIX WATER TEST CD UNITS PE1235B26	MATRIX WATER TEST Hg UNITS PE1235B26	MATRIX TEST UNITS PE1235B26	MATRIX TEST UNITS PE1235B26	MATRIX TEST UNITS PE1235B26	
W02XF01							
S01	MW-01	X	X				5093242
S02	MW-02	X	X				5-093251
S03	MW-03	X	X				5-093258
S04	MW-04 MS/MSD	X	X				5-093267-68
D04	MW-04 DUPLICATE	X	X				5-093281
S05	MW-05	X	X				5-093291
R02	RINSATE BLANK	X	X				5-093298

CRL V.2: 3/85

000004

CRL Data Review Qualification Codes

000011

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

June 20, 2002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 21 2002

Subject: Review of Region 5 Data for **Flambeau Paper, IN**

From: **Thomas Sedlacek, Chemist, ITTRI/ESAT**
Contractor to Region 5 Central Regional Laboratory
submitted: TJS 6/13/02

To: Charlene Khazae
WDNR

Attached are the results for: **Flambeau Paper, IN**

CRL data set number: **20020077**

Samples analyzed for: **Volatile Organic Compounds**

Results are reported for sample designations: **2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01D04, 2002XF01S05, 2002XF01R01 and 2002XF01R02**

Sylvia Griffin JUN 21 2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 21 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

Charlene Dorge 6/25/02

Received by and Date

Comments:

Rev. 4/10/02

2002 0077

50102D

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/2002 LAB ARRIVAL DATE 5/23/2002 DUE DATE 6/24/2002

DU NUMBER 50102D DATA SET NUMBER 2002 0077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CHL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17664	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
2002XF01S01	MW-01 5-093243-44-45	X			
2002XF01S02	MW-02 5-093252-53-54	X			
2002XF01S03	MW-03 5-093259-260-61	X			
2002XF01S04	MW-04 MS/MSD 5-093269-70-71-72-73-74-75-76-77	X			
2002XF01D04	MW-04 DUPLICATE 5-093285-86-87	X			
2002XF01S05	MW-05 5-093292-93-94	X			
2002XF01R01	TRIP BLANK 5-093248	X			
2002XF01R02	RINSATE BLANK 5-093244/5-093301-302	X			
2002XF01S01	MW-01 5-093241		X		
2002XF01S02	MW-02 5-093250		X		
2002XF01S03	MW-03 5-093257		X		
2002XF01S04	MW-04 5-093264-65-66		X		
2002XF01D04	MW-04 DUPLICATE 5-093283		X		
2002XF01S05	MW-05 5-093290		X		
2002XF01R02	RINSATE BLANK 5-093297		X		

CASE NARRATIVE

DATE: May 29, 2002

PROJECT NAME: Data Set SF20020077: Flambeau Paper Samples for Volatile Analysis

ANALYST: Thomas Sedlacek, IITRI/ESAT

I. CASE DESCRIPTION:

ESAT was tasked to perform volatile organic analysis on 8 water samples numbered 2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01D04, 2002XF01S05, 2002XF01R01 and 2002XF01R02 from the Flambeau Paper Site using CRL SOP GCMS023. The preserved samples were analyzed on May 28 and 29, 2002 on GCMS#5. No other problems were observed.

II INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Checks:** A GC/MS instrument performance check using p-BFB was completed each day of analysis to determine if acceptable EPA tuning criteria were met. The QC criteria are the same as those found in CRL SOP GCMS023. All criteria were met. No problems were observed.

2. **Initial Calibrations (IC):** An acceptable five point IC is required for all target compounds before samples can be analyzed. The QC criteria for the IC states each analyte's %RSD must be <30% for Superfund samples analyses.

The IC run on May 13, 2002 met all QC requirements except for the %RSD for Methylene Chloride (39.1%), 1,3,5-Trimethylbenzene (31.0%), 1,2,4-Trimethylbenzene (30.3%), p-Isopropyltoluene (31.9%), and n-Butylbenzene (30.5%). These analytes were flagged estimated "J" or "UJ" in the associated samples. No problems were observed

3. **Continuing calibration (CC):** An acceptable CC is required for all target compounds before samples can be analyzed. The QC criteria for CC states each analytes's %D must be <30%.

All of the analytes in the continuing calibration check analyzed on May 28, 2002 met the QC requirements for %D with the exception of Dichlorodifluoromethane (68%), Chloromethane (53.3%), Vinyl Chloride (52.0%), Bromomethane (42.8%) Chloroethane (49.3%), and Trichlorofluoromethane

(46.9%). Dichlorodifluoromethane is not a target analyte These target analytes were flagged estimated "J" or "UJ" in the associated samples. No other problems were observed.

All of the analytes in the continuing calibration check analyzed on May 29, 2002 met the QC requirements for %D with the exception of: Methylene Chloride (78%). This analyte is flagged estimated "J" for detects and "UJ" for non-detects in the associated samples. No other problems were observed.

4. **Internal Standard (IS) Area and Retention Time Summary:** The QC criteria states that the IS area of the samples must range from 50 to 200% of the internal standard area of the corresponding CC. The RT of the IS for samples must also be within ±30 seconds of the RT of the IS for the corresponding standard. All internal standards met the QC requirements. (see Form VIII VOA-1). No other problems were observed.

II **METHOD QUALITY CONTROL:**

1. **Method Blank Results:** A lab blank was made daily of reagent water and analyzed to check the GC\MS purge and trap systems and the reagents for laboratory contamination (see form I VOA-1).

Method Blank MB052802 contained none of the target analytes and no Tentatively Identified Compounds.

Method Blank MB052902 contained the target analyte Methylene Chloride at 10 µg/L and no Tentatively Identified Compounds.

2. **Surrogate Spike Compound Results:**
All sample surrogate compound recoveries were within the control limits stated in the CRL SOP GCMG023. (please refer Form II VOA). No other problems were observed.

3. **Laboratory Control Sample (LCS) Results:**
The LCS/LCSD was not required for this project.

4. **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results**
Sample 2002XF01S04 was used for the Matrix spike/matrix duplicate. All analyte recoveries were within QC limits with the exception of:
- in sample 2002XF01S04MS: Methylene Chloride (33%), 1,2-Dibromoethane (70%) were out of control low.
- in sample 2002XF01S04MSD Methylene Chloride (35%), 1,2-Dibromoethane (70%) were out of control low.
The RPD for all analytes was within the QC limits with the exception of Bromobenzene. In the native (unspiked) samples

for Methylene Chloride, 1,2-Dibromoethane and Bromobenzene detects are flagged as "J" and non-detects are qualified "UJ". No other problems were observed.

IV. SAMPLE RESULTS:

Sample 2002XF01R01 was a trip blank which contained Acetone, and 2-Hexanone below the stated detection limit. Sample 2002XF01R02 was a rinseate blank which contained Acetone, and 2-Hexanone below the stated detection limit. Sample 2002XF01D04 is a field duplicate of 2002XF01S04. Both samples contained Acetone and Chloroethane below the SOP stated detection limit.

Some peaks in the standards and or the samples required manual integration due to improper computer integrations. All manual integrations were performed in accordance with CRL SOP GEN014. A before and after graphic is included for all manual integrations in this package.

The raw/processed data files, method files and sequence files are archived on R5CRL\VOL2\TSEDLAC\2002\.

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated *B*lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
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N	This flag applies to GC/MS Te*N*tatively Identified Compounds (TICs) that have a mass spectral library match.
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03/07/01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB052802

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB052802

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	10	UJ
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

DKS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB052802

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB052802

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	U J
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	U J
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	U J
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

Q ns 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB052802

Lab Name: Fiambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB052802

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB052902

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: . Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB052902

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E529006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/29/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	10	J
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083336423	m- &/or p-Xylene	5	U

DMS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB052902

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB052902

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E529006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/29/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	UJ
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	UJ
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	UJ
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	UJ
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

DJS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB052902

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB052902

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E529006.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/29/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528016.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	10	UJ
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083833423	m- &/or p-Xylene	5	U

DMS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528016.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	U J
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	U J
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-3	n-Butylbenzene	5	U J
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

JMS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528016.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

000013

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528008.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	10	UJ
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

QAS 6/4/02

000014

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528008.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	U J
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	U J
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	U J
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

DHS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528008.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	column bleed	7.81	7	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S03

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528009.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	10	UJ
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

SHS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S03

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528009.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	UJ
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	UJ
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	UJ
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	UJ
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

JMS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S03

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528009.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-04

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528010.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	8	J
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	4	J
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	UJ
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

6/45
6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-04

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528010.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	UJ
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	UJ
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	UJ
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	UJ
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	UJ
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

GMS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-04

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528010.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01D04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-DUP

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528013.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	8	J
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	6	J
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	UJ
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

Q NS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01D04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-DUP

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528013.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	UJ
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	UJ
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	UJ
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	UJ
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	UJ
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01D04

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-DUP

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528013.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S05

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MW-5

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528014.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U J
75-01-4	Vinyl chloride	10	U J
74-83-9	Bromomethane	10	U J
75-00-3	Chloroethane	10	U J
75-69-4	Trichlorofluoromethane	10	U J
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	U J
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

QAS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S05

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-5

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528014.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	U J
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	U J
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	U J
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

Jhs 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S05

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MW-5

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528014.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: trip blank

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528007.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U J
75-01-4	Vinyl chloride	10	U J
74-83-9	Bromomethane	10	U J
75-00-3	Chloroethane	10	U J
75-69-4	Trichlorofluoromethane	10	U J
67-64-1	Acetone	19	J
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	U J
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	5	J
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

DAS 6/5/02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: trip blank

Sample wt/vol 5.0 (g/ml) ML Lab File ID: 5E528007.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	U J
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	U J
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	U J
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

DNS 6/5/02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01R01

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: trip blank

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528007.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: FLAMBEAU RINSE

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528015.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	UJ
75-01-4	Vinyl chloride	10	UJ
74-83-9	Bromomethane	10	UJ
75-00-3	Chloroethane	10	UJ
75-69-4	Trichlorofluoromethane	10	UJ
67-64-1	Acetone	16	J
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene chloride	5	UJ
75-15-0	Carbon disulfide	5	U
75-34-3	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	13	J
156-59-2	cis-1,2-Dichloroethene	5	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
594-20-7	2,2-Dichloropropane	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
563-58-6	1,1-Dichloropropene	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	10	U
10061-01-5	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
108-88-3	Toluene	5	U
142-28-9	1,3-Dichloropropane	5	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
127-18-4	Tetrachloroethene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1083836423	m- &/or p-Xylene	5	U

DHS 6/5/02

000032

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: FLAMBEAU RINSE

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528015.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
75-25-2	Bromoform	5	U
100-42-5	Styrene	5	U
95-47-6	o-Xylene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
96-18-4	1,2,3-Trichloropropane	5	U
98-82-8	Isopropylbenzene	5	U
108-86-1	Bromobenzene	5	U
103-65-1	n-Propylbenzene	5	U
95-49-8	2-Chlorotoluene	5	U
106-43-4	4-Chlorotoluene	5	U
108-67-8	1,3,5-Trimethylbenzene	5	UJ
98-06-6	tert-Butylbenzene	5	U
95-63-6	1,2,4-Trimethylbenzene	5	UJ
135-98-8	sec-Butylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
99-87-6	p-Isopropyltoluene	5	UJ
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
104-51-8	n-Butylbenzene	5	UJ
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
87-68-3	Hexachlorobutadiene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

9/25 6/5/02

000033

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01R02

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: FLAMBEAU RINSE

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 5E528015.D

Level: (low/med) LOW Date Received: 5/23/02

% Moisture: not dec. _____ Date Analyzed: 5/28/02

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SMC1 (BEN) #	SMC2 (TOL) #	SMC3 (BFB) #	TOT OUT
01	MB052802	104	93	105	0
02	2002XF01R01	112	98	108	0
03	2002XF01S02	103	90	104	0
04	2002XF01S03	109	88	104	0
05	2002XF01S04	107	97	103	0
06	2002XF01D04	106	90	106	0
07	2002XF01S05	101	92	105	0
08	2002XF01R02	101	90	109	0
09	2002XF01S01	108	90	102	0
10	MB052902	103	91	100	0
11	2002XF01S04M	102	102	99	0
12	2002XF01S04M	101	102	99	0

				QC LIMITS
SMC1	(BEN)	=	BENZENE-D6	(70-130)
SMC2	(TOL)	=	TOLUENE-D8	(70-130)
SMC3	(BFB)	=	p-BROMOFLUOROBENZENE	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	10	0.0	7.6	76	4 - 173
Methylene chloride	10	0.0	3.3	33 *	44 - 174
trans-1,2-Dichloroethene	10	0.0	6.6	66	35 - 179
1,1-Dichloroethane	10	0.0	7.3	73	35 - 177
cis-1,2-Dichloroethene	10	0.0	6.7	67	32 - 164
Bromochloromethane	10	0.0	6.7	67	37 - 175
Chloroform	10	0.0	6.8	68	46 - 157
2,2-Dichloropropane	10	0.0	6.9	69	12 - 158
1,2-Dichloroethane	10	0.0	7.2	72	20 - 188
1,1,1-Trichloroethane	10	0.0	6.9	69	18 - 180
1,1-Dichloropropene	10	0.0	6.7	67	37 - 157
Carbon tetrachloride	10	0.0	7.4	74	9 - 173
Benzene	10	0.0	7.1	71	34 - 167
Dibromomethane	10	0.0	6.5	65	42 - 168
Trichloroethene	10	0.0	6.6	66	44 - 159
1,2-Dichloropropane	10	0.0	6.6	66	44 - 156
Bromodichloromethane	10	0.0	6.9	69	36 - 153
cis-1,3-Dichloropropene	10	0.0	6.4	64	24 - 156
trans-1,3-Dichloropropene	10	0.0	5.6	56	12 - 160
1,1,2-Trichloroethane	10	0.0	6.8	68	27 - 174
Toluene	10	0.0	7.1	71	51 - 151
1,3-Dichloropropane	10	0.0	7.2	72	42 - 163
Dibromochloromethane	10	0.0	6.9	69	24 - 168
1,2-Dibromoethane	10	0.0	7.0	70 *	109 - 116
Tetrachloroethene	10	0.0	7.3	73	45 - 165
1,1,1,2-Tetrachloroethane	10	0.0	7.1	71	28 - 176
Chlorobenzene	10	0.0	6.8	68	44 - 167
Ethylbenzene	10	0.0	6.6	66	43 - 163
m- &/or p-Xylene	20	0.0	13	65	45 - 163

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 32 outside limits

Spike Recovery: 4 out of 64 outside limits

COMMENTS: _____

000042

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

Bromoform	10	0.0	6.2	62	17 - 157
Styrene	10	0.0	4.8	48	43 - 157
o-Xylene	10	0.0	6.6	66	44 - 163
1,1,2,2-Tetrachloroethane	10	0.0	6.6	66	20 - 215
1,2,3-Trichloropropane	10	0.0	5.7	57	37 - 181
Isopropylbenzene	10	0.0	6.6	66	44 - 163
Bromobenzene	10	0.0	6.9	69	44 - 167
n-Propylbenzene	10	0.0	6.2	62	55 - 156
2-Chlorotoluene	10	0.0	6.8	68	35 - 173
4-Chlorotoluene	10	0.0	6.6	66	43 - 164
1,3,5-Trimethylbenzene	10	0.0	5.0	50	37 - 171
tert-Butylbenzene	10	0.0	6.3	63	45 - 162
1,2,4-Trimethylbenzene	10	0.0	5.6	56	39 - 171
sec-Butylbenzene	10	0.0	6.0	60	43 - 164
1,3-Dichlorobenzene	10	0.0	6.6	66	42 - 173
p-Isopropyltoluene	10	0.0	5.6	56	46 - 164
1,4-Dichlorobenzene	10	0.0	6.8	68	41 - 170
1,2-Dichlorobenzene	10	0.0	6.6	66	47 - 163
n-Butylbenzene	10	0.0	6.3	63	39 - 157
1,2-Dibromo-3-chloropropane	10	0.0	6.6	66	11 - 188
1,2,4-Trichlorobenzene	10	0.0	7.2	72	36 - 154
Naphthalene	10	0.0	6.4	64	27 - 161
Hexachlorobutadiene	10	0.0	6.5	65	21 - 166
1,2,3-Trichlorobenzene	10	0.0	7.4	74	37 - 159

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	10	7.2	72	5	25	4 - 173
Methylene chloride	10	3.5	35 *	6	25	44 - 174
trans-1,2-Dichloroethene	10	6.4	64	3	25	35 - 179
1,1-Dichloroethane	10	6.8	68	7	25	35 - 177

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 24 outside limits

Spike Recovery: 2 out of 47 outside limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

cis-1,2-Dichloroethene	10	6.5	65	3	25	32 - 164
Bromochloromethane	10	5.9	59	13	25	37 - 175
Chloroform	10	6.5	65	5	25	46 - 157
2,2-Dichloropropane	10	6.4	64	8	25	12 - 158
1,2-Dichloroethane	10	6.4	64	12	25	20 - 188
1,1,1-Trichloroethane	10	7.0	70	1	25	18 - 180
1,1-Dichloropropene	10	6.5	65	3	25	37 - 157
Carbon tetrachloride	10	7.0	70	6	25	9 - 173
Benzene	10	6.7	67	6	25	34 - 167
Dibromomethane	10	6.4	64	2	25	42 - 168
Trichloroethene	10	6.6	66	0	25	44 - 159
1,2-Dichloropropane	10	7.0	70	6	25	44 - 156
Bromodichloromethane	10	6.3	63	9	25	36 - 153
cis-1,3-Dichloropropene	10	5.9	59	8	25	24 - 156
trans-1,3-Dichloropropene	10	5.7	57	2	25	12 - 160
1,1,2-Trichloroethane	10	6.7	67	1	25	27 - 174
Toluene	10	6.6	66	7	25	51 - 151
1,3-Dichloropropane	10	6.9	69	4	25	42 - 163
Dibromochloromethane	10	6.5	65	6	25	24 - 168
1,2-Dibromoethane	10	6.7	67 *	4	25	109 - 116
Tetrachloroethene	10	7.0	70	4	25	45 - 165
1,1,1,2-Tetrachloroethane	10	6.6	66	7	25	28 - 176
Chlorobenzene	10	6.6	66	3	25	44 - 167
Ethylbenzene	10	6.3	63	5	25	43 - 163
m- &/or p-Xylene	20	12	60	8	25	45 - 163
Bromoform	10	5.6	56	10	25	17 - 157
Styrene	10	4.0	40 *	18	25	43 - 157
o-Xylene	10	6.1	61	8	25	44 - 163
1,1,2,2-Tetrachloroethane	10	6.2	62	6	25	20 - 215
1,2,3-Trichloropropane	10	6.1	61	7	25	37 - 181
Isopropylbenzene	10	6.2	62	6	25	44 - 163
Bromobenzene	10	5.3	53	26 *	25	44 - 167
n-Propylbenzene	10	6.2	62	0	25	55 - 156

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 0 outside limits

Spike Recovery: 2 out of 0 outside limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: _____ Case No.: 20020077 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

2-Chlorotoluene	10	6.8	68	0	25	35 - 173
4-Chlorotoluene	10	6.2	62	6	25	43 - 164
1,3,5-Trimethylbenzene	10	4.5	45	11	25	37 - 171
tert-Butylbenzene	10	6.5	65	3	25	45 - 162
1,2,4-Trimethylbenzene	10	5.3	53	6	25	39 - 171
sec-Butylbenzene	10	6.1	61	2	25	43 - 164
1,3-Dichlorobenzene	10	6.5	65	2	25	42 - 173
p-Isopropyltoluene	10	5.5	55	2	25	46 - 164
1,4-Dichlorobenzene	10	6.7	67	1	25	41 - 170
1,2-Dichlorobenzene	10	6.2	62	6	25	47 - 163
n-Butylbenzene	10	5.8	58	8	25	39 - 157
1,2-Dibromo-3-chloropropane	10	5.5	55	18	25	11 - 188
1,2,4-Trichlorobenzene	10	6.8	68	6	25	36 - 154
Naphthalene	10	5.5	55	15	25	27 - 161
Hexachlorobutadiene	10	5.8	58	11	25	21 - 166
1,2,3-Trichlorobenzene	10	6.7	67	10	25	37 - 159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 0 outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB052802

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Lab File ID: 5E528006.D Lab Sample ID: MB052802

Date Analyzed: 5/28/02 Time Analyzed: 13:40

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	2002XF01R01	TRIP BLANK	5E528007.D	14:12
02	2002XF01S02	MW-02	5E528008.D	14:43
03	2002XF01S03	MW-03	5E528009.D	15:15
04	2002XF01S04	MW-04	5E528010.D	15:46
05	2002XF01D04	MW-DUP	5E528013.D	17:21
06	2002XF01S05	MW-5	5E528014.D	17:53
07	2002XF01R02	FLAMBEAU RINSEATE B	5E528015.D	18:24
08	2002XF01S01	MW-01	5E528016.D	18:56

COMMENTS

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB052902

Lab Name: Flambeau Paper Contract: ESAT

Lab Code: Case No.: 20020077 SAS No.: SDG No.:

Lab File ID: 5E529006.D Lab Sample ID: MB052902

Date Analyzed: 5/29/02 Time Analyzed: 13:26

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	2002XF01S04MS	MW-04 MS	5E529007.	13:58
02	2002XF01S04MSD	MW-04 MSD	5E529008.	14:30

COMMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUL 0 8 2002

Subject: Review of Region 5 Data for **"Flambeau Paper"**

From: BORIS Agre
Boris Agre, Chemist, IITRI/ESAT
Contractor to Region 5 Central Regional Laboratory
Submitted to EPA: BA 6/28/02

To: Charlene Khazae 7/12/02
WDNR

Attached are the results for: **"Flambeau Paper"**

CRL data set number: **20020077**

Samples analyzed for: Pesticides in water

Results are reported for sample designations: **2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01S05, 2002XF01D04, 2002XF01R02**

20020077 Plst

Sylvia Griffin JUL 0 8 2002

Data Management Coordinator and Date Received

Date Transmitted: JUL 0 8 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

Charlene Hazell 7/12/02

Received by and Date

Comments:

Rev. 4/10/02

2002 0077 5U02D

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/2002 LAB ARRIVAL DATE 5/23/2002 DUE DATE 6/24/2002

DU NUMBER 5U02D DATA SET NUMBER 2002 0077 STUDY FLAMBOAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17439
2002XF01S01	MW-01 5-093246		X	X		
2002XF01S02	MW-02 5-093255		X	X		
2002XF01S03	MW-03 5-093266		X	X		
2002XF01S04	MW-04 5-093278-279-280		X	X		
2002XF01D04	MW04-DUPLICATE 5-093287		X	X		
2002XF01S05	MW05 5-093295		X	X		
2002XF01R02	RINSATE BLANK 5-093299		X	X		

CASE NARRATIVE

DATE: June 22, 2002

PROJECT NAME: " Flambeau Paper" Samples for Pesticide Analysis.

DATA SET NUMBER: 20020077

ANALYSTS: J. Mokos

REVIEWERS: J. Mokos and A. Harvey

Case Narrative by: B. Agre

I CASE DESCRIPTION:

This case contains the results for seven Flambeau Paper samples for Pesticides organic compounds in water by Gas Chromatography/ECD (GC/ECD according to CRL SOP#GC007 (revision #4)). The samples were extracted on May 28, 2002. The samples were then processed through the florisil cleanup procedure on June 04, 2002 following CRL SOP# GC015. The Pesticides samples were analyzed on June 20, 2002. Column#2 provided better QC results; therefore, quantitated results were calculated using Column#2 and Column#1 was used for confirmation.

C2

II INSTRUMENT QUALITY CONTROLS:

1. Instrument Performance Checks:

An instrument blank was run prior to the initial calibration and all calibration verification samples. No detectable amounts of the target compounds were present in the blank sample.

OK

2. Initial Calibration Check:

An initial calibration for Pesticides and the surrogates was performed on June 20, 2002. All analytes met the requirement of %RSD ≤20%.

OK

3. Endrin/DDT Breakdown:

An Endrin/DDT breakdown standard was analyzed every 12 hours to assess compound degradation in the injector. All Endrin/DDT analysis met the QC criteria which states that either Endrin or DDT degradation must be ≤20% and ≤30% combined.

OK

4. Calibration Verification Standards (CVS):

The calibration verification standard was analyzed every 12 hours or less. The percent difference in responses for all analytes for the first CVS (June 20, 2002 3:33pm) was within QC limits. The percent difference in responses on Column 1 (RTx CLP) for the second CVS (June 20, 2002 8:38 pm) was greater than the QC limits for all compounds

%D

C1(9)

Column difference

except for TCMX, Heptachlor, DDE, Endosulfan I, Endrin, Endosulfan II, DDT, Methoxychlor, Endrin Aldehyde and DCB. The percent difference in responses on the Column 2 (RTx CLP 2) for second CVS (June 20, 2002 8:38 pm) was within the QC limits for all compounds. The TOPO was notified and it was decided to continue the study of the Flambeau Paper samples and flag the results accordingly.

C2 good for all compounds RPD + %RSD

5. QC Check Standard:

The QC Check Standard was independently prepared to verify the accuracy of the working calibration standards. The calculated concentration should be within ±20% of the expected value. The QC Check Standard (June 20,2002 3:16pm) was analyzed after the initial calibration standards. The percent recovery (%REC) on Column 1 (RTx CLP) and on Column 2 (RTx CLP 2) was within the QC limits for all compounds. C2+C1 ok

OK

5. Retention Time (RT) Summary:

Please note that the software on GC #4 did not print out the RT summary table; therefore, retention times were checked manually. The retention time precision between the initial calibration and the subsequent CVS runs was within QC limits.

OK

III METHOD QUALITY CONTROL:

1. Method Blank Results:

Sample MB052802 (June 20, 2002 4:07pm) was the method blank associated with this data set. No target compounds were present.

OK

2. Cleanup Blank:

The cleanup blank was sample Pest Florisil Blank 060302 (June 20, 2002 4:24 pm). The sample did not contain any of the analytes of interest.

OK

3. Cleanup Standard:

The cleanup standard was sample Pest Florisil Standard 060302 (June 20, 2002 7:47 pm). The florisil standard and LCS/LCSD samples were spiked at 2.5 µg/ml. The reported percent recoveries are based on the 2.5 µg/ml spike concentration. The recoveries on Column 1 (RTx CLP) met the QC limits except of beta-BHC (44.3%), Heptachlor (60.6%), Endrin Aldehyde (34.6%), Methoxychlor (45.8%) and Endosulfan Sulfate (57.5%). The recoveries on Column 2 (RTx CLP 2) met the QC limits for delta-BHC, Aldrin, Endosulfan I, Endrin and DDT; all other analytes were below the lowest QC acceptance limits.

C1 better

4. Surrogate Spike Results:

Please note, that only TCMX was used to evaluate Pesticides data.

The recoveries for TCMX on Column 1 (RTx CLP) were within the QC limits except for samples Pest LCSD052802 (33.0%) and 2002XF01S05 (22.5%) which were below the lowest QC acceptance limit (33.3%). Also, the recovery for sample 2002XF01S03 (144%) was greater than the upper QC limit (138.8%).

The recoveries for TCMX on Column 2 (RTx CLP 2) were within the QC limits, except for samples PEST LCSD052802 (35.0%) and 2002XF01S04MS (39.3%) which were below the lowest acceptance limit (39.5%). Also, the recovery for 2002XF01S03 (152.5%) was greater than the upper QC limit (144.7%).

C2 (3)

The recoveries for DCB on Column 1 (RTx CLP) were within the QC limits, except for 2002XF01S01 (188.5%) and 2002XF01S03 (230.0%) which were greater than the upper QC limit (174.4%).

The recoveries for DCB on Column 2 (RTx CLP 2) were within the QC limits, except for MB052802 (163.0%), Florisil FB060302 (133.0%), 2002XF01S01 (150.5%), 2002XF01S03 (195.0%), 2002XF01S05 (138.0%) and 2002XF01D04 (137.0%) which were greater than the upper QC limit (130.6%).

C2 (6)

Therefore, in all affected samples, detected compounds were flagged "J" and non-detected compounds were flagged "UJ".

?

It is not clear form SOP GC007 revision #4 if we have to provide %RPDs in the case narrative. Therefore, all %RPD values for surrogate recoveries are presented in the "Surrogate Recovery" forms.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results:

MS C2-(10)
MSD C2-OK
MS C1-(5)
MSD C1-OK

The sample 2002XF01S04 was used as the sample for the MS/MSD. This sample was spiked with 1000 µl of the Pest/PCB Surrogate at 0.2 µg/ml and with target compounds using 1000 µl of the Pesticide spiking solution at 2.5µl/ml. The recoveries on Column 2 (RTx CLP 2) for the matrix spike were within the QC limits except for delta-BHC (44.1%), Aldrin (38.2%), Heptachlor Epoxide (48.6%), gamma-Chlordane (40.9%), alpha-Chlordane (40.9%), DDE (49.9%), Endosulfan I (39.5%), Dieldrin (48.6%), DDD (44.4%) and DDT (44.4%). The recoveries on Column 2 (RTx CLP 2) for the matrix spike duplicate were within the QC limits without exceptions. The recoveries on Column 1 (RTx CLP) for the matrix spike met the QC limits except for delta-BHC (45.4%), Aldrin (49.4%), alpha-Chlordane (47.5%), DDE (46.2%) and DDT (47.8%). The recoveries on Column 1 (RTx CLP) for the matrix spike duplicate were within the QC limits without exceptions. Possible explanation for this event was an increased response at the detector over-time. Therefore, the detected compounds were flagged "J" and non-detected compounds were flagged "UJ" for all associated samples.

There are no %RPD requirements for the MS/MSD samples stated in SOP GC007, revision #4. All the %RPD values for the matrix spike/matrix spike duplicate recoveries are listed on the "MS/MSD Recovery" forms.

6. Laboratory Control Samples (LCS) and Duplicate (LCSD):

All tables

The LCS/LCSD samples were prepared by spiking organic-free reagent water with 1000 µl the Pesticide spiking solution at 2.5 µg/ml. The reported recoveries are based on the 2.5 µg/ml solution, which was five times greater than the concentration stated in the CRL SOP. Future analysis will use the 0.5 µg/ml spike solution. All recoveries for LCS/LCSD were below CRL's QC limits. Therefore, the detected compounds were

flagged "J" and non-detected compounds were flagged "UJ" for all associated samples.

There are no %RPD requirements for the LCS/LCSD samples stated in SOP GC007, revision #4. All the %RPD values for the matrix spike/matrix spike duplicate recoveries are listed on the "LCS/LCSD Recovery" forms.

7. <u>Performance Evaluation Sample (PES):</u>
A performance evaluation sample was not required for this data package.

IV. SAMPLE RESULTS:

The calculated sample results are summarized on the attached forms. No analytes of interest above the reporting limit were detected in any of the samples.

The raw/processed data files, method files and sequence files are archived on R5CRL\VOL1\BAGRE\GC#4.

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062014.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No: Method Blank
Lab Sample ID: MB052802
Date Prepared: 05/28/02
Time analyzed: 06/20/02 4:07 pm
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062016.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No: 2002XF01S01
Lab Sample ID:S01
Date Prepared: 05/28/02
Time analyzed: 06/20/16 4:41
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper SAMPLE No:2002XF01S02
Lab File ID: 4E06217.D Lab Sample ID:S02
Instrument ID: GC#4 Date Prepared: 05/28/02
Sample Wt. (ml) 1000 Time analyzed: 06/20/02 4:58 pm
Matrix: Water Dilution Factor: 1
Level: Low Final Volume: 10 ml
Units: ug/L

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062018.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No:2002XF01S03
Lab Sample ID: S03
Date Prepared: 05/28/02
Time analyzed: 06/20/02 5:15 pm
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper SAMPLE No:2002XF01S04
Lab File ID: 4E062019.D Lab Sample ID: S04
Instrument ID: GC#4 Date Prepared: 05/28/02
Sample Wt. (ml) 1000 Time analyzed: 06/20/02 5:32 pm
Matrix: Water Dilution Factor: 1
Level: Low Final Volume: 10 ml
Units: ug/L

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062020.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No:2002XF01S05
Lab Sample ID: S05
Date Prepared: 05/28/02
Time analyzed: 06/20/02 5:49 pm
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062021.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No:2002XF01D04
Lab Sample ID: D04
Date Prepared: 05/28/02
Time analyzed: 06/20/02 6:06 pm
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

FORM 1
Pesticides Results

SITE: Pest Water Flambeau Paper
Lab File ID: 4E062022.D
Instrument ID: GC#4
Sample Wt. (ml) 1000
Matrix: Water
Level: Low
Units: ug/L

SAMPLE No:2002XF01R02
Lab Sample ID: R02
Date Prepared: 05/28/02
Time analyzed: 06/20/02 6:23 pm
Dilution Factor: 1
Final Volume: 10 ml

Analyte	Results	Q
alpha-BHC	0.05	UJ
Lindane	0.05	UJ
beta-BHC	0.05	UJ
delta-BHC	0.05	UJ
Heptachlor	0.05	UJ
Aldrin	0.05	UJ
Heptachlor Epoxide	0.05	UJ
gamma-Chlordane	0.05	UJ
alpha-Chlordane	0.05	UJ
p,p'-DDE	0.05	UJ
Endosulfan I	0.05	UJ
Dieldrin	0.05	UJ
Endrin	0.05	UJ
p,p'-DDD	0.05	UJ
Endosulfan II	0.05	UJ
p,p'-DDT	0.05	UJ
Endrin Aldehyde	0.05	UJ
Methoxychlor	0.05	UJ
Endosulfan Sulfate	0.05	UJ
Endrin Ketone	0.05	UJ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 20 2002

Subject: Review of Region 5 Data for **Flambeau Paper** 6/24

From: **Boris Agre, Chemist, IITRI/ESAT**
Contractor to Region 5 Central Regional Laboratory
Submitted to EPA: BA 6/17/02

To: Charlene Khazae
WDNR

Attached are the results for: **Flambeau Paper**

CRL data set number: **20020077**

Samples analyzed for: PCB in water

Results are reported for sample designations: **2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01S05, 2002XF01D04 and 2002XF01R02.**

Sylvia Griffin JUN 20 2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 20 2002 / /

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____ / /

Received by and Date

Comments:

Rev. 4/10/02

CASE NARRATIVE

DATE: June 12, 2002

PROJECT NAME: Flambeau Paper (PCB Analysis for Water Samples)

DATA SET NUMBER: 20020077

ANALYST: B. Agre

Case Narrative by: B. Agre

I CASE DESCRIPTION:

This case contains the results for Flambeau Paper samples for PCB organic compounds in water by Gas Chromatography/ECD (GC/ECD) according to CRL SOP# GC007. The samples were extracted on May 28, 2002. The samples were then processed through the florisil cleanup procedure on June 03, 2002 following CRL SOP# GC015. The PCB samples were analyzed on June 10, 2002.

II INSTRUMENT QUALITY CONTROLS:

1. Instrument Performance Checks:
An instrument blank was analyzed prior to the initial calibration, and at a frequency of 12 hours or less. None of the blanks contained any analyte of interest.

2. Initial Calibration Check:
An initial calibration for AR1242 and the surrogates was performed on June 10, 2002. All analytes met the requirement of %RSD≤20%.
Please note that software on GC #5 did not print out values for Level #5 on the calibration plots form. All levels were manually verified and all calibration plots are correct with five levels. Please refer to attached quant reports and method.

3. Calibration Verification Standards (CVS):
The initial calibration was verified before samples were analyzed. A calibration verification standard was injected at the start of the sequence and at a frequency of 12 hours or less, thereafter, during the continuous analytical sequence.
For CVSs 061008.D, 061019.D and 061026.D the average percent difference for analytes was within QC limits.

4. QC Check Standard:
The QC Check Standard was independently prepared to verify the accuracy of working calibration standards. The QC Check Standard was analyzed after the initial calibration standards. The average percent differences for analytes in QC Check Standard, 061007.D was within QC limits.

5. **Retention Time (RT) Summary:**
Please note that software on GC #5 did not print out RT Summary table; therefore, retention times were checked manually. The retention time precision between the initial calibration and the subsequent CVS runs was within QC limits.

III METHOD QUALITY CONTROL:

1. **Method Blank Results:**
The method blank was MB052802. The sample did not contain any of the analytes of interest.

Clean-up Blank
The cleanup blank was sample PCB Florisil Blank 060302 . The sample did not contain any of the analytes of interest.

2. **Surrogate Spike Results:**
Please note, that only DCB is used to evaluate PCB data. All samples, QC and blanks were spiked with 1000 µl of the 0.2 µg/ml Pest/PCB Surrogate.
The recovery for DCB on Column 1 (DB-608) was within the QC limits .
The recovery for DCB on Column 2 (DB-5) was within the QC limits.
The %RPD for DCB met the QC limits.

3. **Cleanup Standard Results:**
The cleanup standard was AR1242 Florisil Standard 060302. The AR1242 percent recovery and the RPD were within the QC limits.

4. **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results:**
The sample 2002XF01S04 was used as the sample for MS/MSD. This sample was spiked with 1000 µl Pest/PCB Surrogate at 0.2 µg/ml and with target compounds using 1000 µl PCB AR1242 spiking solution at 10.0 µl/ml. The recoveries of AR1242 for the MS and for MSD samples on Column 1 (DB-608) were within the QC limits. The recoveries of AR1242 for the MS and for MSD sample on Column 2 (DB-5) were within the QC limits.

5. **Laboratory Control Samples (LCS) and Duplicate (LCSD):**
The pair of LCS/LCSD samples was prepared by spiking of organic-free reagent water with 1000 µl Pest/PCB Surrogate at 0.2 µg/ml and with target compounds using 1000 µl PCB AR1242 spiking solution at 10.0 µl/ml. The recoveries of AR1242 for the LCS and LCS Duplicate samples on Columns 1 (DB-608) and on Column 2 (DB-5) were within the QC limits.

6. **Performance Evaluation Sample (PES):**
A Performance Evaluation Sample was not part of this data package.

IV. SAMPLE RESULTS:

The samples results are summarized in the attached form. Therefore, all samples including duplicate sample, field and rinsate blanks are clean.

The raw/processed data files, method file and sequence file are archived on R5CRL\VOL1\BAGRE\GC#4.

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

Form 1

PCB Results

Sample No MB052802

SITE: Flambeau Paper

Lab File ID:	5E061009.D	Lab Sample ID:	MB052802
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/10/02 6:11 pm
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No S01

SITE Flambeau Paper

Lab File ID:	5E061016.D	Lab Sample ID:	20020XF01S01
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/10/02 12:04 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No S02

SITE: Flambeau Paper

Lab File ID:	5E061017.D	Lab Sample ID:	20020XF01S02
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 12:54 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No S03

SITE: Flambeau Paper

Lab File ID:	5E061020.D	Lab Sample ID:	20020XF01S03
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 3:25 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No S04

SITE: Flambeau Paper

Lab File ID:	5E061021.D	Lab Sample ID:	20020XF01S04
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 4:16 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No S05

SITE: Flambeau Paper

Lab File ID:	5E061022.D	Lab Sample ID:	20020XF01S05
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 5:06 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No R02

SITE: Flambeau Paper

Lab File ID:	5E061023.D	Lab Sample ID:	20020XF01R02
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 5:57 am
Matrix	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

Form 1

PCB Results

Sample No D04

SITE: Flambeau Paper

Lab File ID:	5E061024.D	Lab Sample ID:	20020XF01D04
Instrument ID:	GC #5	Date Prepared	05/28/02
Sample V((ml)	1000	Time Analyzed	06/11/02 6:48 am
Matrix:	Water	Dilution Factor	1
Level	low	Final Volume	10 mL
Units	ug/L		

Analyte	Final	Q
AR1242	1.0	U

2002 0077 50102D

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/2002 LAB ARRIVAL DATE 5/23/2002 DUE DATE 6/24/2002

DU NUMBER 50102D DATA SET NUMBER 2002 0077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17439
2002XF01S01	MW-01 5-093246		X	X		
2002XF01S02	MW-02 5-093255		X	X		
2002XF01S03	MW-03 5-093266		X	X		
2002XF01S04	MW-04 5-093278-279-280		X	X		
2002XF01D04	MW04-DUPLICATE 5-093287		X	X		
2002XF01S05	MW05 5-093295		X	X		
2002XF01R02	RINSATE BLANK 5-093299		X	X		

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 0 7 2002

Subject: Review of Region 5 Data for **Flambeau Paper**

From: **J. Ganz, Chemist, ESAT/IITRI** JG 6-7-02
Contractor to Region 5 Central Regional Laboratory

Date Submitted to CRL: **June 7, 2002**

To: CHARLENE KHAZAE, WDNR

Attached are the results for: **Flambeau Paper**

CRL data set number: **20020077**

Samples analyzed for: **Total Cyanide**

Results are reported for sample designations: **2002XF01S01-S05, D04, R02**

RECEIVED
JUN 11 2002
BUREAU FOR
REMEDIATION & REDEVELOPMENT

William [illegible] 6/7/2002

Data Management Coordinator and Date Received

Date Transmitted: 6/7/2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____ / /

Received by and Date

Comments:

Rev. 4/10/02

Method: AIG025
Site: Flambeau Paper
Date: June 3, 2002
Analyst: J. Ganz

TDF: 5-02-053
Job #: 246-0-1476-102-029-001
Task Order: 05-0-02
Data Set: 20020077

NARRATIVE

Seven water samples from the Flambeau Paper site were collected on May 21, 2002 and were received properly preserved by CRL on May 23, 2002. The following is a list of the sample numbers and station IDs:

CRL Sample Number	Station ID
2002XF01S01	MW-01
2002XF01S02	MW-02
2002XF01S03	MW-03
2002XF01S04	MW-04
2002XF01D04	MW-04
2002XF01S05	MW-05
2002XF01R02	RINSATE BLANK

The samples were assigned to ESAT for cyanide analysis. All samples tested negative for chlorine and sulfide using the indicator paper methods outlined in the SOP. All samples were distilled using the MIDI distillation method on May 30, 2002. All samples were analyzed on May 31, 2002 for cyanide using a Lachat QuickChem FIA+ 8000 Analyzer. All samples were analyzed within the 14-day holding time limit.

Throughout the entire raw data package the samples are identified with the prefix 2002XF02... instead of 2002XF01... which is the actual prefix. This was not discovered until after the analyses had been completed. The user should note that the sample identifications listed above and on the final results report are correct.

The method detection limit is 2 ug/l; the reporting limit is 8 ug/l. Results are reported to the reporting limit. The QCS concentration was about half of the true concentration; this most likely indicates an error in the preparation of the standard. Since (1) all other QC audits were in control including an independent positive control standard, (2) the sample holding time was approaching the maximum limit, and (3) all sample results were non-detects; it was decided not to redistill and reanalyze. All sample results are acceptable.

Samples 2002XF01S04 and D04 are field duplicates and show good correlation. Sample 2002XF01R02 is a field blank with no contamination evident.

6-3-02

Since RLIMS was unavailable, the results are reported in a word-processing document only. Time will be necessary in the future to enter all results into RLIMS.

Analytical results are stored in the following database file:

R5CRL\vol2\iitri-aig\jaganz\lachat2(sn1327)\cyanide-t\20020077\053102d.fdt

The sample results, QC summary table, and this narrative are stored as

R5CRL\vol2\iitri-aig\jaganz\lachat2(sn1327)\cyanide-t\20020077\cyanide results 2077.wpd
R5CRL\vol2\iitri-aig\jaganz\lachat2(sn1327)\cyanide-t\20020077\20020077 narrative cyanide.wpd
R5CRL\vol2\iitri-aig\jaganz\lachat2(sn1327)\cyanide-t\20020077\qc2077cn.wpd

JS 6-3-02

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH: SUPERFUND SAMPLING DATE: 05/21/02 LAB ARRIVAL DATE: 05/23/02 DUE DATE: 06/20/02
DU NUMBER: 50102D DATASET NUMBER: 20020077 STUDY: Flambeau Paper PRIORITY: Routine LABORATORY :ESAT

	CRL LOG	SAMPLE	CYANIDE IN WATER
			(ug/l)
1	2002XF01S01	MW-01	8 U
2	2002XF01S02	MW-02	8 U
3	2002XF01S03	MW-03	8 U
4	2002XF01S04	MW-04	8 U
5	2002XF01D04	MW-04	8 U
6	2002XF01S05	MW-05	8 U
7	2002XF01R02	RINSATE BLANK	8 U
ANALYSIS DATE			5/31/02
ANALYST		6-3-02	J. GANZ

Reviewed by: Date: 6/4/02

000007

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH: SUPERFUND SAMPLING DATE: 05/21/02 LAB ARRIVAL DATE: 05/23/02 DUE DATE: 06/20/02
DU NUMBER: 50102D DATASET NUMBER: 20020077 STUDY: Flambeau Paper PRIORITY: Routine LABORATORY :ESAT

	CRL LOG	SAMPLE	CYANIDE IN WATER
			(ug/l)
1	2002XF01S01	MW-01	8 U
2	2002XF01S02	MW-02	8 U
3	2002XF01S03	MW-03	8 U
4	2002XF01S04	MW-04	8 U
5	2002XF01D04	MW-04	8 U
6	2002XF01S05	MW-05	8 U
7	2002XF01R02	RINSATE BLANK	8 U
ANALYSIS DATE			5/31/02
ANALYST		6-3-02	J. GANZ

Reviewed by: _____ Date: 6/4/02

000008

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH: SUPERFUND SAMPLING DATE: 05/21/02 LAB ARRIVAL DATE: 05/23/02 DUE DATE: 06/20/02
DU NUMBER: 50102D DATASET NUMBER: 20020077 STUDY: Flambeau Paper PRIORITY: Routine LABORATORY :ESAT

	CRL LOG	SAMPLE	CYANIDE IN WATER
			(ug/l)
1	2002XF01S01	MW-01	8 U
2	2002XF01S02	MW-02	8 U
3	2002XF01S03	MW-03	8 U
4	2002XF01S04	MW-04	8 U
5	2002XF01D04	MW-04	8 U
6	2002XF01S05	MW-05	8 U
7	2002XF01R02	RINSATE BLANK	8 U
ANALYSIS DATE			5/31/02
ANALYST		6-3-02	J. GANZ

Reviewed by: Date: 6/4/02

000009

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

6-3-02

03/07/01

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

6|24

Date: JUN 20 2002

Subject: Review of Region 5 Data for **Flambeau Paper**

From: **Stephen Connet, Chemist, IITRI/ESAT**
Contractor to Region 5 Central Regional Laboratory
Submitted to CRL on 6-19-02

To: Charlene Khazae
NDNR

Attached are the results for: **Flambeau Paper**

CRL data set number: **20020077**

Samples analyzed for: **Antimony, Arsenic, Cadmium, Lead, Selenium, Thallium**

Results are reported for sample designations: **2002XF01S01-S05, D04, R02**

Sylvia Griffin JUN 2 0/2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 2 0 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

/ /

Received by and Date

Comments:

Rev. 4/10/02

Method: GFAA for Water
Site: Flambeau Paper
Date: June 10, 2002
Prepared by: Stephen Connet

TDF: 5-02-053
IITRI Job #: 249-0-1476-102-029-001
Task Order #: 05-0-02
Data Set: 20020077

NARRATIVE

Seven (7) water samples for the Flambeau Paper site [2002XF01S01 (MW-01), S02 (MW-02), S03 (MW-03), S04 (MW-04), D04 (MW-04 DUP), S05 (MW-05), R02 (RINSATE BLANK)] were collected on May 21, 2002 and received properly preserved by CRL on May 23, 2002. The samples were submitted to ESAT for analysis of antimony, arsenic, cadmium, lead, selenium, and thallium by GFAA.

The samples were digested following standard CRL 200.2 hot block water digestion protocols (CRL SOP METALS025) on May 29, 2002 (digestion batch 1377). Analyses were performed using 200.9 methods on the SIMAA 6000 (CRL SOP METALS017) using multi-element programs except for antimony and thallium, which were analyzed using the single element programs.

Samples S04 and D04 are field duplicates and show good correlation. No qualifications are made for field duplicates. Sample R02 is a field rinsate blank; antimony was detected in it above the reporting limit. Analysis of the undigested sample showed a comparable level of antimony. All antimony results are acceptable. All QC were within limits; all sample results are acceptable. All samples were analyzed within the holding time limit.

Non-detect results are reported to the reporting limit (RL). Results between the method detection limit (MDL) and the RL are reported as the instrument value with an "M" flag. The presence of interference required some samples to be diluted in order to meet analytical spike recovery criteria. The following reported values are adjusted for dilution: D04 and S05 for selenium; S04 for thallium. Where appropriate, reported values are dilution corrected.

Analytical results and summaries were stored in the following database files:
Path: R5CRL\VOL2\IITRI-METALS\SCONNET\20020077
Results: \6000-Sb\060502A and \061002A for antimony,
\6000-AsSe\060302A and \060402 for arsenic and selenium,
\6000-CdPb\060602A and \060702 for cadmium and lead,
\6000-Tl\053102A and \060302 for thallium.

This narrative and the Results/QC Summary spreadsheet are stored in:
R5CRL\VOL2\IITRI-METALS\SCONNET\20020077\Reports\077 Narrative.wpd
R5CRL\VOL2\IITRI-METALS\SCONNET\20020077\Reports\077 QC Report.123

Raw results for all runs except Sb\061002A, AsSe\060402, CdPb\060702 and Tl\060302 can be found with the data package for 20020074. Logbook entries for this metals analysis can be found in IITRI logbook C31604 pages 18-19.

6 10 02

Since RLIMS was unavailable, the AA metals analysis results are reported in a Lotus spreadsheet only. Time will be necessary in the future to enter all analysis results into RLIMS.

6 10 00

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM: **METALS**

DIVISION/BRANCH:	SUPERFUND	STUDY:	FLAMBEAU PAPER	SAMPLING DATE:	05/21/02
DU NUMBER:	50102D	PRIORITY:	ROUTINE	LAB ARRIVAL DATE:	05/23/02
DATASET NUMBER:	20020077	LABORATORY:	ESAT	DUE DATE:	06/20/02

	CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER Antimony (ug/L)	WATER Arsenic (ug/L)	WATER Cadmium (ug/L)	WATER Lead (ug/L)	WATER Selenium (ug/L)	WATER Thallium (ug/L)
1	2002XF01S01	MW-01	1 M	2 U	0.3 U	2 U	4 U	2 U
2	2002XF01S02	MW-02	4 U	2 U	0.3 U	2 U	4 U	2 U
3	2002XF01S03	MW-03	4 U	2 U	0.3 U	2 U	4 U	2 U
4	2002XF01S04	MW-04	4 U	2 U	0.3 U	2 U	4 U	4 U
5	2002XF01D04	MW-04 DUPLICATE	4 U	2 U	0.3 U	2 U	8 U	2 U
6	2002XF01S05	MW-05	4 U	2 U	0.3 U	2 U	8 U	2 U
7	2002XF01R02	RINSATE BLANK	4	2 U	0.3 U	2 U	4 U	2 U
	(UNDILUTED)	Reporting Limit	4	2	0.3	2	4	2
DATE OF ANALYSIS			06/05/02	06/03-04/02	06/06-07/02	06/06/02	06/03-04/02	05/31,06/03/02
ANALYST		6-17-02	S. Connet	S. Connet	S. Connet	S. Connet	S. Connet	S. Connet

Reviewed By: [signature] Date: 6-17-02

Page 1 of 1

000026

2002 0077

501020

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/02 LAB ARRIVAL DATE 5/23/02 DUE DATE 6/24/2002

DU NUMBER 501020 DATA SET NUMBER 2002 0077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CHL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET181	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
2002XF01S01	MW-01 5-093242	X	X	X	X	X	X
2002XF01S02	MW-02 5-093251	X	X	X	X	X	X
2002XF01S03	MW-03 5-093258	X	X	X	X	X	X
2002XF01S04	MW-04 MS/MSD 5-093267-268	X	X	X	X	X	X
2002XF01D04	MW-04 DUPLICATE 5-093284	X	X	X	X	X	X
2002XF01S05	MW-05 5-093291	X	X	X	X	X	X
2002XF01R02	RINSATE BLANK 5-093298	X	X	X	X	X	X

000003

2002077

ENVIRONMENTAL PROTECTION AGENCY 50102D
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND SAMPLING DATE 5/21/02 LAB ARRIVAL DATE 5/23/02 DUE DATE 6/24/02

DU NUMBER 50102D DATABEE NUMBER 2002077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	MATRIX WATER TEST CD UNITS HE1235826	MATRIX WATER TEST Hg UNITS HE1235826	MATRIX TEST UNITS HE1235826	MATRIX TEST UNITS HE1235826	MATRIX TEST UNITS HE1235826	
WDXF01							
S01	MW-01	X	X				5-093242
S02	MW-02	X	X				5-093251
S03	MW-03	X	X				5-093258
S04	MW-04 MS/MSD	X	X				5-093267-68
D04	MW-04 DUPLICATE	X	X				5-093284
S05	MW-05	X	X				5-093291
R02	RINSATE BLANK	X	X				5-093298

0000004

CRL V.2: 3/85

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

6/24

Date: JUN 20 2002

Subject: Review of Region 5 Data for **Flambeau Paper**

From: **R. Dilg, Chemist, ESAT/IITRI** RD
Contractor to Region 5 Central Regional Laboratory
Submitted to CRL on 6-19-02

To: Charlene Khazae
WDNR

Attached are the results for: **Flambeau Paper**

CRL data set number: **20020077**

Samples analyzed for: **ICP Metals**

Results are reported for sample designations: **2002XF01S01 - S05, D04, R02**

Sylvia Griffin JUN 20/2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 20 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____ / /

Received by and Date

Comments:

Rev. 4/10/02

Method Number: CRL METALS 003 & METALS 025
Date Generated: June 3, 2002
Author: R.Dilg, IITRI-ESAT

Site Name: Flambeau Paper
Task Order Number: 05-0-02
TDF Number: 5-02-053
Job No.: 102-029 -001
Batch ID No.: 20020077
Parameter: ICP

6-4-02

ICP NARRATIVE

This narrative covers the analysis of 7 water samples from the named site sampled for ICP metals analysis.

Sample Nos.	Sample Station ID's	Sample collected	Analysis dates
2002XF01S01	MW-C1	5-21-2002	5-31-2002
2002XF01S02	MW-C2	5-21-2002	5-31-2002
2002XF01S03	MW-C3	5-21-2002	5-31-2002
2002XF01S04	MW-C4	5-21-2002	5-31-2002
2002XF01D04	MW-C4 DUPLICATE	5-21-2002	5-31-2002
2002XF01S05	MW-C5	5-21-2002	5-31-2002
2002XF01R02	Rinsate Blank	5-21-2002	5-31-2002

The samples were received properly preserved. Routine CRL hot block (water) digestion procedures (CRL Metals 003 and Metals 025) were used to prepare the water samples for GFAA and ICP analysis. The digested samples were analyzed using the Optima 3300 DV ICP unit using analysis run method water_080300_m_ESAT. Optima 3300 DV ICP results were stored to files 20020077 05312002.

ICP RUN RESULTS

Analyte mdl's determined during late summer of 2001 and rl values calculated from that information for ESAT analysis work for the Optima 3300 DV were used. The calculated rl values were used in reporting sample analysis results for this data case.

Analysis RUN 1377 - Optima 3300 DV

29 to 31 analyte lines out of a possible 78 lines available using the Optima 3300 DV method were chosen by a plan agreed upon by Dr. J. V. Morris. These are to be used for routine reporting of analyte values that appear in the QA summary reports.

The following analytes will either not be addressed or only minimally mentioned in this case narrative:

GFAA Metals

Sn, Tl, As, Se, Sb, Ce, Mo, Pb, Cd, B, Ti, Y, Sr, Li

Two sets of QA / QC summary reports are provided for each analysis run for this deliverable. The first is the traditional set based on "default" QA/ QC limits. The second set is based on control chart (historical / statistically) determined QA/ QC limits. The formats used for the second set are new and may be subject to change for use with future data sets.

6-19-02

Analysis RUN 1377 - Optima 3300 DV (continued)

The following lists the case pertinent out-of-control QC audit check results based on default QA / QC (traditional) limits:

RUN 1377 :

Blanks: (Blank values are truncated rather than rounded)

Instr blk1:	Cr267	- 0.31	µg/L
	Cu 327	- 1.6	"
	V 310	9.6	"
Digest blk :	Cr267	- 0.31	"
	Cu 327	- 2.0	"
	V 310	10.4	"
Instr blk1:	Cr267	- 0.39	"
	Cu 327	- 1.6	"
	V 310	13.8	"

LCM's:	LCM1 :	Ag328	*
	LCM1 (2):	Ag328	*

* upper concentration level exceeded ; LCM2 check audits used for control purposes

Hi AQC's:	Hi AQC 1:	**
	Hi AQC 2:	**

** alternate line used for control purposes

RL check Soln: RL 1:

(See paragraph below regarding rl's)

RL 2:

Presently no "control" actions are associated with the observed RL analyte values actually determined during the analysis run. RL check solution values currently are being analyzed for purposes of generating a benchmark set of values which can be used to monitor the appropriateness of any given RL level of analyte concentration.

6-4-02

Analysis RUN 1377 - Optima 3300 DV (continued)

The following lists the case pertinent out-of-control QC audit check results based on control chart QA / QC (historical) limits. Only those analytes not already previously affected by default QA/ QC limits (see above) will be listed here:

Blanks: (Blank values are truncated rather than rounded)

	Instr blk3:	Ba 455	- 0.27	µg/L
		Mn257	- 1.6	"
HiAQC's:	HiAQC 1 :	K 766	- 4.14	% deviation
		Mg 280	*	
	HiAQC 2 :	K 766	- 4.67	"
		Mg 280	*	

* alternate line used for control purposes

Sample analyte qualifications:

To date, compilation of control chart information is still on-going for some of the instrument check audits from Optima analysis runs. Too little reliable data is currently available for some QA audits. Until such time when compilation and evaluation of QA data is more complete, the following will be used:

Default QA/ QC limits for the digestion blank and instrument blank audits will be used for qualifying sample results. Control chart QA / QC limits and/or default limits for other QA/QC audit checks will be used to qualify sample results. In general, if the "wider" of either the default or the control chart limits is exceeded, then the reported results will be qualified for any given sample analyte result that may be affected. This latter approach has been discussed with Dr. J. V. Morris and it will be employed until a more consistent one is developed and spelled out in an approved SOP dealing with this matter.

As, Cd, Sb, Pb, Se, and Tl sample results were not reported by ICP; see GFAA results for these analytes.

The ICP sample results reported for the remaining analytes are usable except as noted in the following paragraphs

For Ag, LCM2 QA check audits were used for control purposes rather than LCM1 check audits since the level of Ag in the LCM1 solutions exceed the upper linear limit for Ag.
Chose based on to report OK

For Al, the sample results for 2002XF01S01 and S02 are flagged "M" since they had a result between the MDL and the rl value and they are estimated because of this.

For Ca, the sample result for 2002XF01R02 is flagged "M" since it had a result between the MDL and the rl value and it is estimated because of this.

Analysis RUN 1377 - Optima 3300 DV (continued)

For Fe, the sample result for 2002XF01S05 is flagged "M" since it had a result between the MDL and the rl value and it is estimated because of this.

For Ni, the sample results for 2002XF01S01, S02, S03, S04, and D04 are flagged "M" since they had a result between the MDL and the rl value and they are estimated because of this.

For V, the sample results for 2002XF01S01, S02, S03, S04, S05, and R02 are flagged "M" since they had a result between the MDL and the rl value and they are estimated because of this. All sample results are flagged "B" indicating they may have been affected by possible contamination indicated by blank analysis data. The sample result for 2002XF01D04 is also flagged "J" because of the blank analysis data just mentioned and is estimated.

Other comments

Samples 2002XF01S04 and D04 appear to be field duplicates and all analyte results correlate well.

The ICP was calibrated and SIC solutions were analyzed for run 1376 earlier in the day on the same day run 1377 was analyzed. This same calibration and SIC analysis information was also used for run 1377. Copies of the raw data printouts for the start of run 1376 are included with the deliverable package for this present data set (run 1377).

R5CRL Files

The following pathways were used for storing analysis information to the R5CRL file server for the this data set:

Optima 3300 DV results:

(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \20020077 \Icp \Optima 3300DV \Methods_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \20020077 \Icp \Optima 3300DV \narrative
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \20020077 \Icp \Optima 3300DV \Results_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \20020077 \Icp \Optima 3300DV \SIFs_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \20020077 \Icp \Optima 3300DV \SS processed data

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01S01

ANALYZED: 31-May-02

STATION: MW-01

COMPOUND	AMOUNT			(Units)
Aluminum	38.3	M		(ug/L)
Barium	26.4			(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	31700			(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	164			(ug/L)
Magnesium	11100			(ug/L)
Manganese	284			(ug/L)
Nickel	1.7	M		(ug/L)
Potassium	1500			(ug/L)
Silver	1.7	U		(ug/L)
Sodium	6240			(ug/L)
Vanadium	16	M	B	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01S02

ANALYZED: 31-May-02

STATION: MW-02

COMPOUND	AMOUNT			(Units)
Aluminum	43.5	M		(ug/L)
Barium	43.4			(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	57100			(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	2230			(ug/L)
Magnesium	17800			(ug/L)
Manganese	357			(ug/L)
Nickel	1.5	M		(ug/L)
Potassium	1980			(ug/L)
Silver	1.7	U		(ug/L)
Sodium	5190			(ug/L)
Vanadium	13.7	M	B	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: [signature] 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01S03

ANALYZED: 31-May-02

STATION: MW-03

COMPOUND	AMOUNT			(Units)
Aluminum	71.9			(ug/L)
Barium	88.4			(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	40400			(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	7040			(ug/L)
Magnesium	7000			(ug/L)
Manganese	1200			(ug/L)
Nickel	1.9	M		(ug/L)
Potassium	4020			(ug/L)
Silver	1.7	U		(ug/L)
Sodium	11300			(ug/L)
Vanadium	15.9	M	B	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: [signature] 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01S04

ANALYZED: 31-May-02

STATION: MW-04

COMPOUND	AMOUNT			(Units)
Aluminum	93.6			(ug/L)
Barium	45			(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	89600			(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	2600			(ug/L)
Magnesium	24100			(ug/L)
Manganese	1760			(ug/L)
Nickel	2.3	M		(ug/L)
Potassium	6660			(ug/L)
Silver	1.7	U		(ug/L)
Sodium	12300			(ug/L)
Vanadium	16.3	M	B	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01D04

ANALYZED: 31-May-02

STATION: MW-04 DUPLICATE

COMPOUND	AMOUNT			(Units)
Aluminum	81.4			(ug/L)
Barium	43.1			(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	90000			(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	2360			(ug/L)
Magnesium	24200			(ug/L)
Manganese	1630			(ug/L)
Nickel	2.4	M		(ug/L)
Potassium	6230			(ug/L)
Silver	1.7	U		(ug/L)
Sodium	11900			(ug/L)
Vanadium	17.4	B	J	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01S05

ANALYZED: 31-May-02

STATION: MW-05

COMPOUND	AMOUNT		(Units)
Aluminum	71.2		(ug/L)
Barium	30.2		(ug/L)
Beryllium	2.8	U	(ug/L)
Calcium	85900		(ug/L)
Chromium	0.9	U	(ug/L)
Cobalt	4.2	U	(ug/L)
Copper	4.4	U	(ug/L)
Iron	34.7	M	(ug/L)
Magnesium	23900		(ug/L)
Manganese	746		(ug/L)
Nickel	7.3		(ug/L)
Potassium	2200		(ug/L)
Silver	1.7	U	(ug/L)
Sodium	46400		(ug/L)
Vanadium	16.7	M B	(ug/L)
Zinc	36	U	(ug/L)

ANALYZED BY: 6-4-02

EPA CRL - REGION V
ICP FINAL RESULTS REPORT

REPORT PRODUCED ON: 03-Jun-02

SAMPLE ORGANIZATION:

SAMPLE BATCH ID: 20020077

LABORATORY: REGION 5 CRL

SAMPLE FACILITY: Flambeau Paper

SAMPLE: 2002XF01R02

ANALYZED: 31-May-02

STATION: Rinsate Blank

COMPOUND	AMOUNT			(Units)
Aluminum	44	U		(ug/L)
Barium	0.9	U		(ug/L)
Beryllium	2.8	U		(ug/L)
Calcium	58.2	M		(ug/L)
Chromium	0.9	U		(ug/L)
Cobalt	4.2	U		(ug/L)
Copper	4.4	U		(ug/L)
Iron	42	U		(ug/L)
Magnesium	18.4			(ug/L)
Manganese	8.6	U		(ug/L)
Nickel	2.7	U		(ug/L)
Potassium	482	U		(ug/L)
Silver	1.7	U		(ug/L)
Sodium	368	U		(ug/L)
Vanadium	13.8	M	B	(ug/L)
Zinc	36	U		(ug/L)

ANALYZED BY: 6-4-02

20020077

50102D

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/02 LAB ARRIVAL DATE 5/23/02 DUE DATE 6/24/2002

DU NUMBER 50102D DATA SET NUMBER 2002 0077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
2002XF01S01	MW-01 5-093242	X	X	X	X	X	X
2002XF01S02	MW-02 5-093251	X	X	X	X	X	X
2002XF01S03	MW-03 5-093258	X	X	X	X	X	X
2002XF01S04	MW-04 MS/MSD 5-093267-268	X	X	X	X	X	X
2002XF01D04	MW-04 DUPLICATE 5-093284	X	X	X	X	X	X
2002XF01S05	MW-05 5-093291	X	X	X	X	X	X
2002XF01R02	RINSATE BLANK 5-093298	X	X	X	X	X	X

000004

64-02

VW
6-4-02

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated ***B***lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (***J*** is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL ***M***ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te***N***tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or ***Q***uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are ***R***ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but ***U***ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

RECEIVED
JUL 11 2002
BUREAU FOR REMEDIATION & REDEVELOPMENT

Date: JUN 27 2002

Subject: Review of Region 5 Data for **Flambeau Paper**

From: **Xuyen Nguyen, Chemist, IITRI/ESAT**
Contractor to Region 5 Central Regional Laboratory
Submitted to EPA: 6/~~18~~25/02

To: Charlene Khazae
WDNR

Attached are the results for: **Flambeau Paper**

CRL data set number: **20020077**

Samples analyzed for: **ABN in water**

Results are reported for sample designations: **2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04,2002XF01S05,2002XF01D04 and 2002XF01R02.**

20020071 / ATSN

Sylvia Griffin JUN 27 2002

Data Management Coordinator and Date Received

Date Transmitted: JUN 27 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

Charlene Dazze 7/1/02

Received by and Date

Comments:

Rev. 4/10/02

CASE NARRATIVE

DATE: June 13, 2002

TDF#:5-09-033
Job#:249-0-1476-109-004-001

PROJECT NAME: Data set 20020077 water Samples for Semi-Volatile (CRL SOP GCMS026).

ANALYST: Xuyen Nguyen, IITRI/ESAT

I. CASE DESCRIPTION:

ESAT received seven water samples (2002XF01S01, 2002XF01S02, 2002XF01S03, 2002XF01S04, 2002XF01S05, 2002XFD04 and 2002XF01R02) for semi-volatile analysis on May 23, 2002. The samples were extracted on May 28, 2002 using the Separatory Funnel extraction method as per CRL SOP GCMS026. All samples extracts were analyzed on June 5, 2002 using GCMS#2. The continuing calibration had poor chromatography and low responses for all compounds. All samples were re-analyzed on June 10, 2002 after changing the septa and cleaning the liner. The extracts were analyzed within the required hold time. Due to injector and a Retention time shift, the 2-fluorophenol surrogate data was not collected for any samples or standards. The method solvent delay will be changed for future analyses to incorporate this data.

II INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Checks:** A GC/MS instrument performance check using DFTPP was made each day of analysis to determine if acceptable EPA tuning criteria were met. The QC criteria are the same as those found in CRL SOP GCMS026. All standards and samples were analyzed on GCMS #2. All criteria were met, no problems were observed.

2. **Initial Calibrations (IC):** An acceptable five point IC is required for all target compounds before samples can be analyzed. The QC criterion for the IC states each analyte's %RSD must be < 30% for water (according to the criteria listed in CRL SOP GCMS026).

All analytes met the requirements for the IC analyzed June 10, 2002 except Benzoic acid (60.6%RSD), Hexachlorocyclopentadiene (99.5%RSD), 2,4-Dinitrophenol(49.0%RSD) and Pentachlorophenol (59.0%RSD). These analytes were flagged estimated "J" for positive results and "UJ" for non- detects. The analytes Benzoic acid, 2,4-Dinitrophenol and Pentachlorophenol have

four point calibration curves and Hexachlorocyclopentadiene has a three point calibration curve. These compounds have an elevated detection limit.
The surrogate 2-Fluorophenol eluted before the mass spectrometer started collecting data. Therefore, this surrogate is not included in the initial calibration or in any samples analyzed.

3. **Continuing calibration (CC):** An acceptable CC is required for all target compounds before samples can be analyzed. The QC criteria for CC states each analytes %D must be <25%.
The continuing calibration, analyzed on June 10, 2002 reported all compounds within the quality control limits except Hexachlorocyclopentadiene (87.3%D). 2-Fluorophenol was not included as stated above. These analytes were flagged "J" for positive results and "UJ" for non-detects in the associated samples.

4. **Internal Standard (IS) Area and Retention Time Summary:**
The QC criteria states that the IS area of the samples must range from 50 to 200% of the internal standard area of the corresponding CC. The RT of the IS for samples must also be within ±30 seconds of the RT of the IS for the corresponding standard.
All internal standards met the QC requirements.

III **METHOD QUALITY CONTROL:**

1. **Method Blank Results:** A lab blank was prepared for each day samples were extracted to check the GC/MS, extraction glassware and the reagents for laboratory contamination. The extraction blank MB52802, contained bis(2-Ethylhexyl) phthalate (3.0ug/L). This compound was flagged "B" in all samples.

2. **Surrogate Spike Compound Results:** All surrogate recoveries were within the control limits stated in the CRL SOP GCMS026 except 2-Fluorobiphenyl in samples 2002XF01S03 (32%), 2002XF01S04(27%), 2002XF01D04(39%), 2002XF01S04MS(39%) and 2002XF01S04MSD(40%). As stated previously 2-Fluorophenol data was not collected. The data was flagged "J" for positive results and "UJ" for non-detected compounds.
The 2-Fluorophenol data was not collected due to a Retention time shift caused by injector maintence. The solvent delay will be adjusted for future analyses. This surrogate was also absent in the ICAL standards, therefor the extraction was exceptable and method parameter changes are necessary.

3. **Laboratory Control Sample (LCS) Results:**
The LCS and LCSD were spiked with 500ul of 100ug/ml ABN LCS standard solution. This corresponded to a 50ug spiked into

one liter of water.
In the LCS sample, all the percent recoveries were within limits except 2-Chlorophenol(11%), 2-Methylphenol(26%), 4-Methylphenol(26%), 2-Nitrophenol(12%), 2,4- Dichlorophenol (14%), Hexachlorobutadiene(20%), 4-Chloro-3-methylphenol(36%) 2,4,6-Trichlorophenol(19%) and 2,4,5-Trichlorophenol(24%).

In the LCSD sample, all the percent recoveries were within limits except 2-Chlorophenol(11%), 2-Methylphenol(26%), 4-Methylphenol(26%), 2-Nitrophenol(12%), 2,4- Dichlorophenol (14%), Hexachlorobutadiene(22%), 4-Chloro-3-methylphenol(38%) 2,4,6-Trichlorophenol(19%) and 2,4,5-Trichlorophenol(24%).

All these analytes recoveries were outside QC limits in the LCS/LCSD, so all these analytes were flagged "J" for detected compounds and "UJ" for non-detected compounds in all the samples.

The analyte Hexachlorocyclopentadiene was not detected in either the LCS or LCSD. This analyte was qualified "R" for both detected and non-detected compounds in all samples.

In the LCS/LCSD samples, all the relative percent differences (%RPD) were within acceptable QC limits.

4. <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results</u>
Sample 2002XF01S04 was used as the MS/MSD sample.
The MS and MSD samples were spiked with 500ul of 100ug/ml ABN LCS standard solution. This corresponded to a 50ug spiked into one liter of sample.
In the MS sample , the percent recoveries were within QC limits except 2-Chlorophenol(26%), 1,3-Dichlorobenzene(20%), 1,2-Dichlorobenzene(26%),2-Methylphenol(28%),4-Methylphenol (28%) N-Nitroso-di-n-propylamine(44%), Isophorone(42%), 2-Nitrophenol(34%),bis(2-Chloroethoxy)methane(42%), 2,4-Dichlorophenol(32%), 1,2,4-Trichlorobenzene(30%), 4-Chloroaniline(36%), Hexachlorobutadiene(19%), 4-Chloro-3-methylphenol(38%), 2-Methylnaphthalene(38%), 2,4,6-Trichlorophenol(34%) 2-Chloronaphthalene(38%), 2-Nitroaniline(52%), Acenaphthylene (40%), 2,6-Dinitrotoluene (48%), Acenaphthene(40%), 3-Nitroaniline(48%), Dibenzofuran (42%), 2,4-Dinitrotoluene (52%), Fluorene(42%), 4-Chlorophenyl phenylether(42%) Diethylphthalate(32%), 4-Bromophenyl-phenylether(44%), Hexachlorobenzene(40%), Fluoranthene(46%), Pyrene(46%), Butylbenzylphthalate(40%), 3,3-Dichlorobenzidine (34%), Benzo[a]anthracene(48%), Chrysene(44%), Benzo[b]fluoranthene(50%) and Diben[a,h]anthracene(46%).

In the MSDup sample , the percent recoveries were within QC limits except 2-Chlorophenol(28%), 1,2-Dichlorobenzene(26%), 2-Methylphenol(28%), 4-Methylphenol(28%) N-Nitroso-di-n-propylamine(44%), Isophorone(42%), 2-Nitrophenol(34%),bis(2-Chloroethoxy)methane(42%), 2,4-Dichlorophenol(32%), 1,2,4-Trichlorobenzene(30%), 4-Chloroaniline(36%), Hexachlorobutadiene(19%), 4-Chloro-3-methylphenol(38%), 2-Methylnaphthalene(38%), 2,4,6-Trichlorophenol(34%) 2-Chloronaphthalene(38%), 2-Nitroaniline(52%), Acenaphthylene (42%), 2,6-Dinitrotoluene (48%), Acenaphthene(40%), 3-Nitroaniline(48%), Dibenzofuran (42%), 2,4-Dinitrotoluene (52%), Fluorene(42%), 4-Chlorophenylphenylether(42%) Diethylphthalate(30%), 4-Bromophenyl-phenylether(44%), Hexachlorobenzene(40%), Fluoranthene(46%), Pyrene((44%), Butylbenzylphthalate(40%), 3,3-Dichlorobenzidine (34%), Benzo[a]anthracene(48%), Chrysene(44%), Benzo[b]fluoranthene (50%) and Diben[a,h]anthracene(46%).

All these analytes recoveries were outside QC limits in the MS/MSD, so all these analytes except the analyte 1,3-Dichlorobenzene , were flagged "J" for detected compounds and "UJ" for non-detected in the native sample.

The analyte Hexachlorocyclopentadiene was not detected in either the MS or MSD. This analyte was qualified "R" for both detected and non-detected compounds in the native sample.

In the MS/MSD samples, all the relative percent differences (%RPD) were within acceptable QC limits.

IV. SAMPLE RESULTS:

In the seven samples, all analytes were below the detection limits except the concentration of bis(2-Ethylhexyl)phthalate (6.0ug/L) in sample 2002XF01S05, (10.0ug/L) in sample 2002XF01D04 and 13.0ug/L in sample 2002XF01R02.(Please see Form-I SVOA).
It is important to note that during extraction, all samples formed an emulsion between the organic and aqueous layer. The emulsion was present even after allowing extracts to separate overnight. This could be an explanation for the low % recoveries observed in the LCS, LCSD, MS and MSD samples.

The raw /processed data files, method files and sequence files are archived on R5CRL\VOL2\XNGUYEN\2002.

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: F_AMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	TOT OUT
01	ICAL CK 50NG	*	*	*	*	*	*	6
02	MB52802	*	72	78	82	96	95	1
03	2002XF01S01	*	26	96	93	100	99	1
04	2002XF01S02	*	27	82	76	93	84	1
05	2002XF01S03	*	15	46	32 *	48	47	2
06	2002XF01S04	*	18	47	27 *	43	45	2
07	2002XF01S05	*	36	98	81	103	93	1
08	2002XF01D04	*	14	48	39 *	24	59	2
09	2002XF01R02	*	38	84	79	120	94	1
10	LCS52802	*	11	55	59	46	98	1
11	LCSD52802	*	10	56	58	46	101	1
12	2002XF01S04M	*	16	41	39 *	43	51	2
13	2002XF01S04M	*	16	41	40 *	46	48	2

QC LIMITS

S1	(2FP)	=	2-Fluorophenol	(21-110)
S2	(PHL)	=	Phenol-d5	(10-110)
S3	(NBZ)	=	Nitrobenzene-d5	(35-114)
S4	(FBP)	=	2-Fluorobiphenyl	(43-116)
S5	(TBP)	=	2,4,6-Tribromophenol	(10-123)
S6	(TPH)	=	Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
bis(2-Chloroethyl)ether	50	0.0	28	56	33 - 114
Phenol	50	0.0	7.8	16	7 - 128
2-Chlorophenol	50	0.0	13	26 *	31 - 121
1,3-Dichlorobenzene	50	0.0	10	20 *	21 - 101
1,4-Dichlorobenzene	50	0.0	12	24	22 - 102
1,2-Dichlorobenzene	50	0.0	13	26 *	27 - 102
Benzyl alcohol	50	0.0	17	34	34 - 132
2-Methylphenol	50	0.0	14	28 *	36 - 115
4-Methylphenol	50	0.0	14	28 *	35 - 117
bis(2-chloroisopropyl)ether	50	0.0	19	38	34 - 120
Hexachloroethane	50	0.0	8.2	16	16 - 103
N-Nitroso-di-n-propylamine	50	0.0	22	44 *	49 - 111
Nitrobenzene	50	0.0	21	42	41 - 115
Isophorone	50	0.0	21	42 *	51 - 115
2-Nitrophenol	50	0.0	17	34 *	41 - 128
2,4-Dimethylphenol	50	0.0	12	24	13 - 123
Benzoic acid	50	0.0	6.5	13	5 - 176
bis(2-Chloroethoxy)methane	50	0.0	21	42 *	48 - 118
2,4-Dichlorophenol	50	0.0	16	32 *	40 - 137
1,2,4-Trichlorobenzene	50	0.0	15	30 *	36 - 108
Naphthalene	50	0.0	18	36	36 - 111
4-Chloroaniline	50	0.0	18	36 *	50 - 133
Hexachlorobutadiene	50	0.0	9.6	19 *	26 - 108
4-Chloro-3-methylphenol	50	0.0	19	38 *	52 - 131
2-Methylnaphthalene	50	0.0	19	38 *	47 - 111
2,4,6-Trichlorophenol	50	0.0	17	34 *	38 - 139
2,4,5-Trichlorophenol	50	0.0	20	40	34 - 143
2-Chloronaphthalene	50	0.0	19	38 *	50 - 114
2-Nitroaniline	50	0.0	26	52 *	55 - 131

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 32 outside limits

Spike Recovery: 31 out of 64 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

Acenaphthylene	50	0.0	20	40 *	44 - 121
Dimethylphthalate	50	0.0	7.2	14	4 - 102
2,6-Dinitrotoluene	50	0.0	24	48 *	58 - 128
Acenaphthene	50	0.0	20	40 *	52 - 114
3-Nitroaniline	50	0.0	24	48 *	49 - 137
2,4-Dinitrophenol	50	0.0	14	28	24 - 189
Dibenzofuran	50	0.0	21	42 *	52 - 119
2,4-Dinitrotoluene	50	0.0	26	52 *	57 - 132
4-Nitrophenol	50	0.0	28	56	5 - 235
Fluorene	50	0.0	21	42 *	53 - 120
4-Chlorophenyl-phenylether	50	0.0	21	42 *	54 - 124
Diethylphthalate	50	0.0	16	32 *	34 - 129
4-Nitroaniline	50	0.0	28	56	4 - 158
4,6-Dinitro-2-methylphenol	50	0.0	15	30	11 - 235
n-Nitrosodiphenylamine	50	0.0	23	46	41 - 140
4-Bromophenyl-phenylether	50	0.0	22	44 *	49 - 148
Hexachlorobenzene	50	0.0	20	40 *	52 - 143
Pentachlorophenol	50	0.0	23	46	9 - 140
Phenanthrene	50	0.0	23	46	44 - 144
Anthracene	50	0.0	22	44	44 - 144
Carbazole	50	0.0	27	54	49 - 139
Di-n-butylphthalate	50	3.8	24	40	31 - 159
Fluoranthene	50	0.0	23	46 *	49 - 138
Pyrene	50	0.0	23	46 *	48 - 158
Butylbenzylphthalate	50	0.0	20	40 *	48 - 159
3,3'-Dichlorobenzidine	50	0.0	17	34 *	41 - 183
Benzo[a]anthracene	50	0.0	24	48 *	54 - 153
Chrysene	50	0.0	22	44 *	50 - 152
bis(2-Ethylhexyl)phthalate	50	0.0	24	48	47 - 153
Di-n-octylphthalate	50	0.0	24	48	30 - 156
Benzo[b]fluoranthene	50	0.0	25	50 *	55 - 153
Benzo[k]fluoranthene	50	0.0	24	48	43 - 149
Benzo[a]pyrene	50	0.0	24	48	47 - 156

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 34 outside limits

Spike Recovery: 29 out of 67 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

Indeno[1,2,3-cd]pyrene	50	0.0	24	48	43 - 153
Dibenz[a,h]anthracene	50	0.0	23	46 *	48 - 146
Benzo[g,h,i]perylene	50	0.0	25	50	5 - 219
Hexachlorocyclopentadiene	50	0.0	0.0	0 *	5 - 179

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
bis(2-Chloroethyl)ether	50	28	56	0	63	33 - 114
Phenol	50	7.9	16	0	84	7 - 128
2-Chlorophenol	50	14	28 *	7	62	31 - 121
1,3-Dichlorobenzene	50	11	22	10	75	21 - 101
1,4-Dichlorobenzene	50	12	24	0	79	22 - 102
1,2-Dichlorobenzene	50	13	26 *	0	73	27 - 102
Benzyl alcohol	50	18	36	6	40	34 - 132
2-Methylphenol	50	14	28 *	0	53	36 - 115
4-Methylphenol	50	14	28 *	0	51	35 - 117
bis(2-chloroisopropyl)ether	50	20	40	5	63	34 - 120
Hexachloroethane	50	8.3	17	6	77	16 - 103
N-Nitroso-di-n-propylamine	50	22	44 *	0	37	49 - 111
Nitrobenzene	50	21	42	0	55	41 - 115
Isophorone	50	21	42 *	0	30	51 - 115
2-Nitrophenol	50	17	34 *	0	50	41 - 128
2,4-Dimethylphenol	50	12	24	0	73	13 - 123
Benzoic acid	50	6.5	13	0	155	5 - 176
bis(2-Chloroethoxy)methane	50	21	42 *	0	38	48 - 118
2,4-Dichlorophenol	50	16	32 *	0	53	40 - 137
1,2,4-Trichlorobenzene	50	15	30 *	0	58	36 - 108
Naphthalene	50	18	36	0	48	36 - 111
4-Chloroaniline	50	18	36 *	0	72	50 - 133
Hexachlorobutadiene	50	9.7	19 *	0	65	26 - 108
4-Chloro-3-methylphenol	50	19	38 *	0	37	52 - 131

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits

Spike Recovery 20 out of 7 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

2-Methylnaphthalene	50	19	38 *	0	37	47 - 111
2,4,6-Trichlorophenol	50	17	34 *	0	48	38 - 139
2,4,5-Trichlorophenol	50	21	42	5	46	34 - 143
2-Chloronaphthalene	50	19	38 *	0	35	50 - 114
2-Nitroaniline	50	26	52 *	0	28	55 - 131
Acenaphthylene	50	21	42 *	5	100	44 - 121
Dimethylphthalate	50	7.2	14	0	60	4 - 102
2,6-Dinitrotoluene	50	24	48 *	0	27	58 - 128
Acenaphthene	50	20	40 *	0	31	52 - 114
3-Nitroaniline	50	24	48 *	0	28	49 - 137
2,4-Dinitrophenol	50	14	28	0	100	24 - 189
Dibenzofuran	50	21	42 *	0	27	52 - 119
2,4-Dinitrotoluene	50	26	52 *	0	29	57 - 132
4-Nitrophenol	50	28	56	0	64	5 - 235
Fluorene	50	21	42 *	0	27	53 - 120
4-Chlorophenyl-phenylether	50	21	42 *	0	30	54 - 124
Diethylphthalate	50	15	30 *	6	37	34 - 129
4-Nitroaniline	50	27	54	4	44	4 - 158
4,6-Dinitro-2-methylphenol	50	15	30	0	59	11 - 235
n-Nitrosodiphenylamine	50	24	48	4	54	41 - 140
4-Bromophenyl-phenylether	50	22	44 *	0	30	49 - 148
Hexachlorobenzene	50	20	40 *	0	29	52 - 143
Pentachlorophenol	50	23	46	0	100	9 - 140
Phenanthrene	50	23	46	0	25	44 - 144
Anthracene	50	22	44	0	29	44 - 144
Carbazole	50	25	50	8	47	49 - 139
Di-n-butylphthalate	50	23	38	5	40	31 - 159
Fluoranthene	50	23	46 *	0	30	49 - 138
Pyrene	50	22	44 *	4	28	48 - 158
Butylbenzylphthalate	50	20	40 *	0	40	48 - 159
3,3'-Dichlorobenzidine	50	17	34 *	0	44	41 - 183
Benzo[a]anthracene	50	24	48 *	0	36	54 - 153
Chrysene	50	22	44 *	0	36	50 - 152

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 21 out of 0 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAM3EA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No 2002XF01S04

bis(2-Ethylhexyl)phthalate	50	25	50	4	22	47 - 153
Di-n-octylphthalate	50	24	48	0	87	30 - 156
Benzo[b]fluoranthene	50	25	50 *	0	83	55 - 153
Benzo[k]fluoranthene	50	24	48	0	83	43 - 149
Benzo[a]pyrene	50	24	48	0	72	47 - 156
Indeno[1,2,3-cd]pyrene	50	24	48	0	66	43 - 153
Dibenz[a,h]anthracene	50	23	46 *	0	74	48 - 146
Benzo[g,h,i]perylene	50	24	48	4	40	5 - 219
Hexachlorocyclopentadiene	50	0.0	0 *	0	103	5 - 179

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 3 out of 0 outside limits

COMMENTS: _____

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

MB52802

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: 2E061010.D Lab Sample ID: MB52802

Instrument ID: GCMS#2 Date Extracted: 5/28/02

Matrix: (soil/water) WATER Date Analyzed: 6/10/02

Level: (low/med) LOW Time Analyzed: 20:27

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	2002XF01S01	2002XF01S01	2E061011.D	6/10/02
02	2002XF01S02	2002XF01S02	2E061012.D	6/10/02
03	2002XF01S03	2002XF01S03	2E061013.D	6/10/02
04	2002XF01S04	2002XF01S04	2E061014.D	6/10/02
05	2002XF01S05	2002XF01S05	2E061015.D	6/11/02
06	2002XF01D04	2002XF01D04	2E061016.D	6/11/02
07	2002XF01R02	2002XF01R02	2E061017.D	6/11/02
08	LCS52802	LCS52802	2E061018.D	6/11/02
09	LCSD52802	LCSD52802	2E061019.D	6/11/02
10	2002XF01S04MS	2002XF01S04MS	2E061020.D	6/11/02
11	2002XF01S04MSD	2002XF01S04MSD	2E061021.D	6/11/02

COMMENTS:

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MB52802

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB52802

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061010.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6-20-02

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB52802

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB52802

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061010.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	~~U~~ R

6.20.02
K

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB52802

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB52802

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061010.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S01

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061011.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6-20-02
M

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S01

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061011.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	JB
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	~~U~~ R

6. 20. 02

KL

000344

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S01

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061011.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000345

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061012.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6.20.02
M

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061012.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	JB
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	120	~~U~~ R

6_20_02
RL

000357

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061012.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000358

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S03

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S03

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061013.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6.20.02
XL

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S03

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S03

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061013.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	JB
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	UR

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S03

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S03

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061013.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 0 *(ug/L or ug/Kg)* UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000371

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMEEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061014.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	UJ
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	UJ
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	UJ
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	UJ
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	UJ
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	UJ
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	UJ
88-74-4	2-Nitroaniline	5	UJ
208-96-8	Acenaphthylene	5	UJ
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	UJ
83-32-9	Acenaphthene	5	UJ
99-09-2	3-Nitroaniline	5	UJ
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	UJ
121-14-2	2,4-Dinitrotoluene	5	UJ

6.20.02
M

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061014.D

Level: (low/med) LOW Date Received:

% Moisture: decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	UJ
7005-72-3	4-Chlorophenyl-phenylether	5	UJ
84-66-2	Diethylphthalate	5	UJ
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	UJ
118-74-1	Hexachlorobenzene	5	UJ
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	4	J
206-44-0	Fluoranthene	5	UJ
129-00-0	Pyrene	5	UJ
85-68-7	Butylbenzylphthalate	5	UJ
91-94-1	3,3'-Dichlorobenzidine	5	UJ
56-55-3	Benzo[a]anthracene	5	UJ
218-01-9	Chrysene	5	UJ
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	UJ
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	UJ
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	~~U~~ R

6-20-02
M

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061014.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/10/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S05

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061015.D

Level: (low/med) LOW Date Received:

% Moisture: decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6-20-02
ML

000395

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01S05

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061015.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	4	J
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	3	J
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	JB
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	~~U~~ R

6-20-02
XL

000395

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01S05

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01S05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061015.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000397

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01D04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01D04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061016.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6.20.02

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01D04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01D04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061016.D

Level: (low/med) LOW Date Received:

% Moisture: decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	4	J
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	U R

6-20-02

000405

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01D04

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01D04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061016.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000406

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01R02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061017.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	UJ
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	UJ
106-44-5	4-Methylphenol	5	UJ
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	UJ
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	50	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	UJ
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-methylphenol	5	UJ
91-57-6	2-Methylnaphthalene	5	U
88-06-2	2,4,6-Trichlorophenol	5	UJ
95-95-4	2,4,5-Trichlorophenol	5	UJ
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	5	U
51-28-5	2,4-Dinitrophenol	50	UJ
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

6.20.02
KL

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2002XF01R02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01R02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061017.D

Level: (low/med) LOW Date Received:

% Moisture: decanted:(Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	5	U
534-52-1	4,6-Dinitro-2-methylphenol	5	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	50	UJ
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	8	
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	3	J
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U
77-47-4	Hexachlorocyclopentadiene	~~120~~	~~U~~ R

6/20/02
XL

000118

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

2002XF01R02

Lab Name: SUPERFUND Contract: ESAT

Lab Code: FLAMBEA Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2002XF01R02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2E061017.D

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/28/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/11/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000419

2002C077

50102D

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

DIVISION/BRANCH SUPERFUND SAMPLE DATE 5/21/2002 LAB ARRIVAL DATE 5/23/2002 DUE DATE 6/24/2002

DU NUMBER 50102D DATA SET NUMBER 2002 C077 STUDY FLAMBEAU PAPER PRIORITY N CONTRACTOR WDNR

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17664	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
2002XF01S01	MW-01 5-093243-44-45	X			
2002XF01S02	MW-02 5-093252-53-54	X			
2002XF01S03	MW-03 5-093259-260-61	X			
2002XF01S04	MW-04 MS/MSD 5-093269-70-71-72-73-74-75-76-77	X			
2002XF01D04	MW-04 DUPLICATE 5-093285-86-87	X			
2002XF01S05	MW-05 5-093292-93-94	X			
2002XF01R01	TRIP BLANK 5-093248	X			
2002XF01R02	RINSATE BLANK 5-093244/5-093301-302	X			
2002XF01S01	MW-01 5-093241		X		
2002XF01S02	MW-02 5-093250		X		
2002XF01S03	MW-03 5-093257		X		
2002XF01S04	MW-04 5-093264-65-66		X		
2002XF01D04	MW-04 DUPLICATE 5-093283		X		
2002XF01S05	MW-05 5-093290		X		
2002XF01R02	RINSATE BLANK 5-093297		X		

5/28/02

CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated *B*lank as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
J	This flag is used when the analyte is estimated due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. (*J* is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, with a quantity at or above the CRL *M*ethod Detection Limit (MDL) but below the lowest concentration of the calibration curve. This flag indicates the quantitated value is estimated since it falls below the lowest calibration standard in the calibration curve.
N	This flag applies to GC/MS Te*N*tatively Identified Compounds (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or *Q*uantitation problems, but are confirmed to be qualitatively present in the sample. No value is reported with this qualification flag.
R	This flag applies to analyte data that are *R*ejected and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. No value is reported with this qualification flag.
U	This flag in used when the analyte was analyzed for but *U*ndetected in the sample. The CRL RL for the analyte accompanies this flag. When the customer requests CRL to report below our RL down to our MDL, undetected analytes are reported with a "U" code and the MDL. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

03/07/01