

**ASHLAND/NSP LAKEFRONT SITE**  
**SEPTEMBER 15, 2005 PROGRESS REPORT (No. 22)**  
**WDNR BRRTS #02-02-00013**  
**CERCLA Docket No. V-W-04-C-764**  
**USEPA ID# WISFN057952**

This is the twenty-second progress report prepared in accordance with the Administrative Order on Consent (AOC) for the Ashland/NSP Lakefront Site, effective November 14, 2003. This report covers activities completed in August 2005. It is intended to meet the requirements described in Task 8 of the Statement of Work appended to the AOC.

Field Activities Completed

Lake Superior Research Institute (LSRI) representing NSPW collected the two rounds of UV light measurements as part of the sediment sampling program during August. The first event for cloudy day conditions was performed on August 3, 2005. Secchi disk readings of approximately 60 cms were measured on that day. The final round for clear day conditions was performed on August 31, 2005. The delay between the two events was caused by the need for calm weather over an extended period to meet acceptable clear day Secchi readings. The Secchi values on August 31<sup>st</sup> were more than two meters.

The free-product recovery system operated during August, but encountered a series of maintenance issues that resulted in diminished coal tar recovery. The first was a partially ruptured air line between the air compressor in the NSPW service center building and the treatment building (the compressor supplies air for the extraction well pumps). It was first noted by NSPW personnel on August 9, 2005. Low pressure was noted during the August 11, 2005 inspection by Coleman Engineering, which repaired the line at that time. The second was a high level sump alarm shutdown noted during inspections on August 15<sup>th</sup> and 17<sup>th</sup>. The shutdown was apparently caused by a partially clogged line between the LNAPL barrel and the diffuser which caused the barrel to overflow and fill the sump. The line was cleared, the sump evacuated and the system resumed operation. It then operated the remainder of the month without interruption.

A total of 16.3 gallons of coal tar were collected between August 3<sup>rd</sup> and August 31<sup>st</sup>, although most of the volume was collected after August 17<sup>th</sup>. The system also removed and treated 7,500 gallons of groundwater (1,500 gallons from well EW-4) during this same period, but again the majority of this volume was removed the final two weeks of the month. Performance the final half of August was an improvement compared to the overall performance during the previous (July) month.

The water treatment system continues to perform to a high level of efficiency. No hydrocarbons were detected in the system effluent samples. Similarly, the air treatment system indicated no performance concerns. However, note that detection limit values measured this past month were the same as those measured during July (the effluent sample yielded no detections with lower detection limits; the influent and 1<sup>st</sup> stage carbon samples also yielded no detections, but with higher detection limits).

A summary of the system monitoring data is included in Tables 1 - 5. Lab analysis reports for the system monitoring are included in Appendix A.

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Reporting Activities Completed

This report includes data from the fish analyses performed on samples collected during the June sampling program. Sample results for both ecological (whole fish) and human health (fillets) risk assessments (ERA and HHRA) are included on Tables 5 – 9, and laboratory data sheets are included in Appendix B. The results show the low molecular weight (LMW) and high molecular weight (HMW) PAH concentrations in fish tissues collected from both the reference areas (the Bayfront Power Plant and Pamida Beach) and the affected area. Samples of brown bullhead, rock bass, walleye, smallmouth bass, and shorthead redhorse were analyzed for the ecological risk assessment program. Samples of walleye and shorthead redhorse were analyzed for the human health program.

Preliminary baseline results from this data are as follows:

- Samples of bass tissue (ERA) from the affected area yielded values ranging between 50 and 160 mg/kg total PAHs. Samples of the same species from the reference areas yielded a range between 40 and 60 mg/kg total PAHs.
- Samples of bullhead tissue (ERA) from the affected area yielded values ranging from 60 to 490 mg/kg total PAHs. Samples of bullhead tissue from the reference areas yielded a range from 30 to 50 mg/kg total PAHs.
- Samples of redhorse tissue (HHRA) from the affected area yielded values ranging from 40 to 2,470 mg/kg total PAHs (the majority were less than 1,000 mg/kg). The same species from the reference areas yielded a range between 25 and 55 mg/kg total PAHs.
- Samples of walleye tissue (HHRA) from the affected area yielded values ranging from 30 to 270 mg/kg total PAHs. The same species from the reference areas yielded a range between 25 and 35 mg/kg total PAHs.

On August 2, 2005, representatives of NSPW and USEPA convened a conference call to discuss the preliminary mortality tests performed by LSRI on reference sand station samples collected from Washburn and Bayfield. The purpose of the call was to discuss a protocol for preparing the bioassays from these stations because the preliminary results yielded exceptionally high mortality from an unknown cause. During the call, USEPA concurred that the eight week holding time to prepare the bioassays was conservative because PAH degradation in the lab was not a concern, and could be exceeded. The decision was also made during the call to perform dilutions on the remaining samples and conduct a retest for mortality prior to preparing the bioassays.<sup>1</sup>

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<sup>1</sup> The results of this retest yielded similar high mortality results. These retest results were discussed during a conference call between the parties in September; the group concurred that resampling of other reference stations would be performed, later during the fall, 2005.

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As mentioned in the previous (July 2005) report, QAPP Addendum No. 3 was conditionally approved by USEPA on July 27, 2005. The revisions to the Addendum will be submitted for final approval after receiving all laboratory documentation required. NSPW is continuing to work with the labs to obtain the required documentation. Much of the delay has been caused because of the mortality test reruns previously discussed. Submittal of the final QAPP Addendum revisions is planned for later in September, 2005.

USEPA indicated during July via email it was continuing to evaluate the free-product migration and well abandonment issues at the MW-4 well nest described in the July report (restated during the August report) and discussed at the May 26, 2005 meeting. NSPW requests that USEPA consider this issue for further discussion at its earliest convenience.

Field Activities Planned

The surface water samples to be collected during a high energy event are planned for late September. This sampling will be dependent on a period of sustained high winds. Additionally, re-sampling at new, pre-selected reference stations resulting from the unexpected high mortality tests will be performed sometime during the fall, 2005.

Remaining upland activities yet to be scheduled are the geophysical surveys of the artesian wells and the MW-2(NET) well nest at Kreher Park, and the deep bedrock well (MW-2 well nest) at the NWPW service center. As described during the previous report, this work is planned to be performed concurrent with the investigation of the buried pipe structures identified during the June test pit investigation.

Coleman Engineering will continue to monitor the tar removal system on a weekly basis during August 2005.

Reporting Activities Planned

The work plan addendum for the pipe investigations will be submitted in September. It will be submitted along with the forensic analyses data summary from the test pits, which has been delayed from August. The entire forensic data package including samples collected from the test pits and the sediments will be submitted in the next monthly report.

Attachments:

- Table 1 - Remediation System Water Quality Monitoring Results
- Table 2 - Remediation System Air Monitoring Results
- Table 3 - Summary of Coal Tar and Groundwater Volume Removed
- Table 4 – Remediation System – Air Treatment Summary
- Table 5 – Remediation System – Water Treatment Summary
- Table 6 – June 2005 Fish Sampling Results – Smallmouth Bass – Ecological Risk Assessment

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Table 7 – June 2005 Fish Sampling Results – Brown Bullhead – Ecological Risk Assessment

Table 8 – June 2005 Fish Sampling Results – Shorthead Redhorse - Human Health Risk Assessment

Table 9 – June 2005 Fish Sampling Results – Walleye - Human Health Risk Assessment

Appendix A – Interim Treatment System - Laboratory Reporting Forms

Appendix B – Fish Tissue Results – Laboratory Reporting Forms

**Table 1**  
**Remediation System Water Quality Monitoring Results**  
**Northern States Power, Ashland, Wisconsin**

August 2005

Analyte	Units	Influent	Precarbon	Effluent	Trip Blank	(1)POTW	Method	(3)Frequency
<b>VOCs</b>								
1,1,1,2-TETRACHLOROETHANE	ug/L	<150	<1.4	<0.19	<0.19	--	EPA 8260	Monthly
1,1,1-TRICHLOROETHANE	ug/L	<110	<1.3	<0.13	<0.13	--	EPA 8260	Monthly
1,1,2,2-TETRACHLOROETHANE	ug/L	<240	<1.6	<0.3	<0.3	--	EPA 8260	Monthly
1,1,2-TRICHLOROETHANE	ug/L	<160	<2.1	<0.2	<0.2	--	EPA 8260	Monthly
1,1-DICHLOROETHANE	ug/L	<120	<1.5	<0.15	<0.15	--	EPA 8260	Monthly
1,1-DICHLOROETHENE	ug/L	<150	<2.1	<0.19	<0.19	--	EPA 8260	Monthly
1,1-DICHLOROPROPENE	ug/L	<100	<1.6	<0.13	<0.13	--	EPA 8260	Monthly
1,2,3-TRICHLOROETHANE	ug/L	<170	<1.8	<0.22	<0.22	--	EPA 8261	Monthly
1,2,3-TRICHLOROPROPANE	ug/L	<300	<2.2	<0.37	<0.37	--	EPA 8260	Monthly
1,2,4-TRICHLOROETHANE	ug/L	<150	<1.8	<0.19	<0.19	--	EPA 8260	Monthly
1,2,4-TRIMETHYLBENZENE	ug/L	<b>770</b>	<b>&lt;3.2&gt;</b>	<0.16	<0.16	--	EPA 8260	Monthly
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<240	<1.7	<0.3	<0.3	--	EPA 8260	Monthly
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/L	<180	<1.5	<0.22	<0.22	--	EPA 8260	Monthly
1,2-DICHLOROETHANE	ug/L	<120	<1.4	<0.15	<0.15	--	EPA 8260	Monthly
1,2-DICHLOROETHANE	ug/L	<150	<1.7	<0.19	<0.19	--	EPA 8260	Monthly
1,2-DICHLOROPROPANE	ug/L	<120	<1.7	<0.15	<0.15	--	EPA 8260	Monthly
1,3,5-TRIMETHYLBENZENE (MESITYLENE)	ug/L	<120	<2	<0.15	<0.15	--	EPA 8260	Monthly
1,3-DICHLOROETHANE	ug/L	<120	<1.2	<0.15	<0.15	--	EPA 8260	Monthly
1,3-DICHLOROPROPANE	ug/L	<140	<1.7	<0.18	<0.18	--	EPA 8260	Monthly
1,4-DICHLOROETHANE	ug/L	<170	<1.2	<0.22	<0.22	--	EPA 8260	Monthly
2,2-DICHLOROPROPANE	ug/L	<110	<2.2	<0.14	<0.14	--	EPA 8260	Monthly
2-CHLOROTOLUENE	ug/L	<110	<2	<0.14	<0.14	--	EPA 8260	Monthly
4-CHLOROTOLUENE	ug/L	<140	<1.8	<0.18	<0.18	--	EPA 8260	Monthly
BENZENE	ug/L	<b>3200</b>	<b>&lt;3.0&gt;</b>	<0.14	<0.14	--	EPA 8260	Monthly
BROMOBENZENE	ug/L	<120	<0.52	<0.15	<0.15	--	EPA 8260	Monthly
BROMOCHLOROMETHANE	ug/L	<140	<1.3	<0.18	<0.18	--	EPA 8260	Monthly
BROMODICHLOROMETHANE	ug/L	<110	<1.6	<0.14	<0.14	--	EPA 8260	Monthly
BROMOFORM	ug/L	<160	<1.4	<0.21	<0.21	--	EPA 8260	Monthly
BROMOMETHANE	ug/L	<240	<1.9	<0.3	<0.3	--	EPA 8260	Monthly
CARBON TETRACHLORIDE	ug/L	<120	<1.5	<0.15	<0.15	--	EPA 8260	Monthly
CHLOROBENZENE	ug/L	<120	<1	<0.15	<0.15	--	EPA 8260	Monthly
CHLOROETHANE	ug/L	<510	<8.5	<0.63	<0.63	--	EPA 8260	Monthly
CHLOROFORM	ug/L	<82	<1.5	<0.1	<0.1	--	EPA 8260	Monthly
CHLOROMETHANE	ug/L	<140	<1.2	<0.17	<0.17	--	EPA 8260	Monthly
CIS-1,2-DICHLOROETHYLENE	ug/L	<140	<2	<0.18	<0.18	--	EPA 8260	Monthly
CIS-1,3-DICHLOROPROPENE	ug/L	<85	<1.3	<0.11	<0.11	--	EPA 8260	Monthly
CYMENE	ug/L	<100	<1.5	<0.13	<0.13	--	EPA 8260	Monthly
DIBROMOCHLOROMETHANE	ug/L	<160	<1.5	<0.2	<0.2	--	EPA 8260	Monthly
DIBROMOMETHANE	ug/L	<190	<1.6	<0.24	<0.24	--	EPA 8260	Monthly
DICHLORODIFLUOROMETHANE	ug/L	<220	<0.89	<0.28	<0.28	--	EPA 8260	Monthly
ETHYLBENZENE	ug/L	<b>570</b>	<1.3	<0.17	<0.17	--	EPA 8260	Monthly
HEXACHLOROBUTADIENE	ug/L	<250	<2.1	<0.31	<0.31	--	EPA 8260	Monthly
ISOPROPYL ETHER	ug/L	<85	<1.8	<0.11	<0.11	--	EPA 8260	Monthly
ISOPROPYLBENZENE (CUMENE)	ug/L	<110	<1.8	<0.14	<0.14	--	EPA 8260	Monthly
M,P-XYLENE (SUM OF ISOMERS)	ug/L	<b>3400</b>	<b>&lt;7.0&gt;</b>	<0.35	<0.35	--	EPA 8260	Monthly
METHYLENE CHLORIDE	ug/L	<200	<2.1	<0.25	<0.25	--	EPA 8260	Monthly
NAPHTHALENE	ug/L	<b>15000</b>	<b>44</b>	<0.25	<0.25	--	EPA 8260	Monthly
N-BUTYLBENZENE	ug/L	<120	<1.6	<0.15	<0.15	--	EPA 8260	Monthly
N-PROPYLBENZENE	ug/L	<120	<1.7	<0.15	<0.15	--	EPA 8260	Monthly
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/L	<b>1800</b>	<b>&lt;3.1&gt;</b>	<0.22	<0.22	--	EPA 8260	Monthly
SEC-BUTYLBENZENE	ug/L	<110	<1.6	<0.14	<0.14	--	EPA 8260	Monthly
STYRENE	ug/L	<b>5200</b>	<b>&lt;4.6&gt;</b>	<0.15	<0.15	--	EPA 8260	Monthly
T-BUTYLBENZENE	ug/L	<130	<1.5	<0.16	<0.16	--	EPA 8260	Monthly
TERT-BUTYL METHYL ETHER	ug/L	<160	<1.5	<0.2	<0.2	--	EPA 8260	Monthly
TETRACHLOROETHYLENE (PCE)	ug/L	<140	<1.5	<0.18	<0.18	--	EPA 8260	Monthly
TOLUENE	ug/L	<b>16000</b>	<b>&lt;5.1&gt;</b>	<0.25	<0.25	--	EPA 8260	Monthly
TRANS-1,2-DICHLOROETHENE	ug/L	<160	<1.7	<0.21	<0.21	--	EPA 8260	Monthly
TRANS-1,3-DICHLOROPROPENE	ug/L	<190	<1.6	<0.24	<0.24	--	EPA 8260	Monthly
TRICHLOROETHYLENE (TCE)	ug/L	<100	<1.2	<0.13	<0.13	--	EPA 8260	Monthly
TRICHLOROFLUOROMETHANE	ug/L	<390	<1.9	<0.49	<0.49	--	EPA 8260	Monthly
VINYL CHLORIDE	ug/L	<160	<0.53	<0.2	<0.2	--	EPA 8260	Monthly
<b>Total VOCs</b>	ug/L	<b>74,740</b>	<b>70.0</b>	<b>0</b>	<b>0</b>	<b>(2)1000</b>		

Collected August 3, 2005

< - Less Than Limit of Detection

<> Between Limit of Detection and Limit of Quantification

Concentrations exceeding the POTW have been shaded

(1) POTW standards for effluent discharge

(2) 1000 = POTW standard for total BTEX for effluent discharge

(3) BTEX and PVOCs collected monthly, remaining analytes collected semi-annually

**Table 2**  
**Remediation System Air Monitoring Results**  
**Northern States Power, Ashland, Wisconsin**

August 2005

Analyte	Units	Air Stripper	1st Stage Carbon	Effluent	Method	Frequency
<b>VOCs</b>						
Volume Collected	Liters	3.0	3.0	5.0		
Benzene	mg	<0.02	<0.02	<0.02	NIOSH 1501	Monthly
Benzene	mg/m <sup>3</sup>	<6.67	<6.67	<4.0		Monthly
Ethylbenzene	mg	<0.02	<0.02	<0.02	NIOSH 1501	Monthly
Ethylbenzene	mg/m <sup>3</sup>	<6.67	<6.67	<4.0		Monthly
Hydrocarbons (total)	mg	<0.03	<0.03	<0.03	NIOSH 1550	Monthly
Hydrocarbons (total)	mg/m <sup>3</sup>	<10	<10	<6.0		Monthly
Toluene	mg	<0.02	<0.02	<0.02	NIOSH 1501	Monthly
Toluene	mg/m <sup>3</sup>	<6.67	<6.67	<4.0		Monthly
Xylene, Total	mg	<0.03	<0.03	<0.03	NIOSH 1501	Monthly
Xylene, Total	mg/m <sup>3</sup>	<10	<10	<6.0		Monthly

**Collected August 3, 2005**

< - Less Than Limit of Detection

<> Between Limit of Detection and Limit of Quantification

**Table 3  
Summary of Coal Tar and Groundwater Volume Removed**

Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
20-Feb-01	554.2	4,853	22,826	0	22,826
30-Mar-01	850.0	7,443	44,613	0	44,613
26-Apr-01	915.2	8,014	56,978	0	56,978
17-May-01	1,078.2	9,442	58,967	0	58,967
11-Jun-01	1,291.2	11,307	61,094	0	61,094
31-Jul-01	1,535.2	13,444	65,758	0	65,758
15-Aug-01	1,578.0	13,819	65,758	0	65,758
12-Sep-01	1,578.0	14,193	81,524	0	81,524
28-Sep-01	1,789.9	15,674	104,500	0	104,500
12-Nov-01 <sup>1</sup>	2,486.4	21,773	104,900	0	104,900
13-Nov-01	2,551.6	22,344	106,200	0	106,200
14-Nov-01	2,559.7	22,415	107,600	0	107,600
19-Nov-01	2,600.5	22,772	114,200	0	114,200
28-Nov-01	2,682.0	23,486	125,200	0	125,200
03-Dec-01	2,779.8	24,342	131,500	0	131,500
12-Dec-01	2,877.6	25,199	142,300	0	142,300
19-Dec-01	2,975.4	26,055	155,328	0	155,328
03-Jan-02	3,105.8	27,197	172,000	0	172,000
05-Feb-02	3,105.7	27,197	173,116	0	173,116
11-Feb-02	3,122.0	27,340	178,300	0	178,300
12-Feb-02	3,122.1	27,340	180,100	0	180,100
19-Feb-02	3,122.1	27,340	182,900	0	182,900
06-Mar-02	3,138.4	27,483	183,000	0	183,000
12-Mar-02	3,187.3	27,911	194,400	0	194,400
18-Mar-02	3,219.9	28,196	199,400	0	199,400
27-Mar-02	3,317.7	29,053	210,500	0	210,500
03-Apr-02	3,350.3	29,338	216,600	0	216,600
09-Apr-02	3,399.2	29,767	224,000	0	224,000
23-Apr-02	3,473.6	30,419	238,100	0	238,100
30-Apr-02	3,514.3	30,775	246,700	0	246,700
08-May-02	3,538.8	30,989	256,900	0	256,900
15-May-02	3,587.7	31,418	264,500	0	264,500
20-May-02	3,612.1	31,631	266,900	0	266,900
24-May-02	3,636.5	31,845	268,365	10,935	279,300
28-May-02	3,652.8	31,988	272,215	13,185	285,400
17-Jun-02	3,669.1	32,131	287,693	28,507	316,200
25-Jun-02	3,726.2	32,631	295,908	35,492	331,400
02-Jul-02	3,766.9	32,987	299,147	42,153	341,300
09-Jul-02	3,783.2	33,130	306,783	42,717	349,500
17-Jul-02	3,799.5	33,272	314,710	49,990	364,700
22-Jul-02	3,824.0	33,487	319,384	54,516	373,900
29-Jul-02	3,864.7	33,843	326,542	57,158	383,700
08-Aug-02	3,905.5	34,201	334,406	68,394	402,800
15-Aug-02	3,921.8	34,343	340,391	68,609	409,000
09-Sep-02	3,942.1	34,521	343,084	79,816	422,900
19-Sep-02	4,003.3	35,057	350,659	91,441	442,100
26-Sep-02	4,003.3	35,057	356,565	91,535	448,100
04-Oct-02	4,003.3	35,057	363,135	93,265	456,400
11-Oct-02	4,003.3	35,057	374,863	94,737	469,600
18-Oct-02	4,027.8	35,272	374,863	94,737	485,600
25-Oct-02	4,158.2	36,414	379,459	116,901	496,360
31-Oct-02	4,166.3	36,484	381,556	121,045	502,600
08-Nov-02	4,166.3	36,484	390,756	121,045	511,800
21-Nov-02	4,753.3	41,625	387,629	124,272	511,900
26-Nov-02	4,773.6	41,803	391,434	127,566	519,000
04-Dec-02	4,789.9	41,945	398,205	129,795	528,000
10-Dec-02	4,802.2	42,053	403,230	130,971	534,200
18-Dec-02	4,826.6	42,267	410,356	132,444	542,800
23-Dec-02	4,842.9	42,409	412,967	133,333	546,300
30-Dec-02	4,855.1	42,516	415,842	134,458	550,300
10-Jan-03	4,883.7	42,767	425,575	136,125	561,700
15-Jan-03	4,900.0	42,910	429,541	136,859	566,400

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Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
20-Jan-03	4,920.3	43,087	434,133	137,567	571,700
30-Jan-03	4,952.9	43,373	442,556	138,844	581,400
13-Feb-03	4,989.6	43,694	454,019	140,881	594,900
19-Feb-03	5,007.8	43,854	456,851	141,149	598,000
26-Feb-03	5,036.3	44,103	463,081	142,019	605,100
04-Mar-03	5,036.3	44,103.1	468,458	142,742	611,200
27-Mar-03	5,036.3	44,103.1	471,979	143,488	615,467
02-Apr-03	5,097.5	44,639	478,430	144,870	623,300
09-Apr-03	5,105.6	44,710	483,745	145,855	629,600
16-Apr-03	5,121.9	44,853	487,333	148,267	635,600
23-Apr-03 <sup>2</sup>	4,910.0	42,997	492,504	152,796	645,300
29-Apr-03	4,926.3	43,140	495,729	155,771	651,500
07-May-03	4,926.3	43,140	499,877	158,223	658,100
15-May-03	4,926.3	43,140	499,877	158,223	658,100
21-May-03	4,942.6	43,283	515,230	172,470	687,700
28-May-03	4,958.9	43,425	522,943	175,357	698,300
03-Jun-03	4,967.1	43,497	524,602	176,598	701,200
10-Jun-03	4,975.2	43,568	529,728	178,472	708,200
17-Jun-03	4,983.4	43,640	534,411	179,789	714,200
26-Jun-03	4,983.4	43,640	540,050	180,950	721,000
02-Jul-03	4,983.4	43,640	543,291	181,909	725,200
09-Jul-03	4,983.4	43,640	549,991	181,909	731,900
16-Jul-03	4,991.5	43,711	553,174	185,526	738,700
22-Jul-03	4,999.7	43,783	556,643	186,957	743,600
30-Jul-03	5,007.8	43,854	560,726	188,074	748,800
06-Aug-03	5,040.4	44,139	562,275	188,825	751,100
20-Aug-03	5,081.2	44,496	567,361	191,139	758,500
28-Aug-03	5,138.2	44,995	570,561	191,139	761,700
04-Sep-03	5,316.7	46,559	572,759	191,841	764,600
11-Sep-03	5,382.7	47,137	575,659	191,841	767,500
19-Sep-03	5,423.5	47,494	579,259	191,841	771,100
25-Sep-03	5,366.4	46,994	578,399	197,101	775,500
03-Oct-03	5,382.7	47,137	584,399	197,101	781,500
09-Oct-03	5,399.0	47,279	583,771	198,229	782,000
24-Oct-03	5,452.0	47,743	589,679	200,821	790,500
29-Oct-03	5,481.5	48,002	592,579	200,821	793,400
06-Nov-03	5,530.4	48,430	596,979	200,821	797,800
13-Nov-03	5,546.7	48,573	598,764	200,836	799,600
11/192003	5,571.2	48,787	598,895	201,005	799,900
25-Nov-03	5,591.5	48,965	601,544	202,056	803,600
03-Dec-03	5,620.1	49,215	604,762	203,438	808,200
11-Dec-03	5,644.5	49,429	608,144	204,556	812,700
19-Dec-03	5,669.0	49,644	612,612	205,488	818,100
26-Dec-03	5,685.5	49,788	615,254	206,146	821,400
29-Dec-03	5,693.4	49,857	615,310	206,190	821,500
09-Jan-04	5,705.6	49,964	618,110	206,190	824,300
20-Jan-04	5,709.7	50,000	619,147	207,153	826,300
29-Jan-04	5,713.8	50,036	626,409	208,091	834,500
03-Feb-04	5,726.0	50,143	630,515	208,485	839,000
11-Feb-04	5,726.0	50,143	633,094	208,706	841,800
17-Feb-04	5,734.2	50,215	637,911	209,089	847,000
26-Feb-04	5,742.3	50,286	645,083	209,617	854,700
02-Mar-04	5,754.5	50,392	649,270	209,930	859,200
12-Mar-04	5,774.9	50,571	657,501	210,999	868,500
19-Mar-04	5,807.9	50,860	664,798	212,102	876,900
25-Mar-04	5,819.7	50,963	669,603	214,997	884,600
02-Apr-04	5,823.8	50,999	669,738	215,163	884,900
05-Apr-04	5,823.8	50,999	672,233	217,667	889,900
23-Apr-04	5,827.9	51,035	672,869	218,231	891,100
27-Apr-04	5,836.0	51,106	673,684	219,616	893,300
12-May-04	5,852.3	51,249	678,475	223,625	902,100
17-May-04	5,856.4	51,285	682,349	225,151	907,500
25-May-04	5,872.7	51,427	688,062	226,538	914,600
04-Jun-04	5,884.9	51,534	697,811	230,589	928,400
10-Jun-04	5,913.5	51,785	703,940	232,060	936,000
14-Jun-04	5,937.9	51,998	708,258	232,742	941,000

**Table 3  
Summary of Coal Tar and Groundwater Volume Removed**

Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
24-Jun-04	5,995.0	52,498	719,009	234,191	953,200
02-Jul-04	6,039.8	52,891	726,095	235,205	961,300
06-Jul-04	6,064.2	53,104	729,338	235,762	965,100
14-Jul-04	6,133.5	53,711	745,363	237,038	982,400
20-Jul-04	6,133.5	53,711	739,893	238,007	977,900
26-Jul-04	6,182.4	54,139	744,946	238,654	983,600
04-Aug-04	6,235.4	54,604	749,874	239,426	989,300
10-Aug-04	6,284.3	55,032	752,585	239,915	992,500
19-Aug-04	6,316.9	55,317	753,677	240,923	994,600
26-Aug-04	6,345.4	55,567	759,482	241,618	1,001,100
31-Aug-04	6,378.0	55,852	762,807	242,793	1,005,600
10-Sep-04	6,422.8	56,245	766,587	243,514	1,010,100
15-Sep-04	6,439.1	56,387	770,402	244,599	1,015,000
24-Sep-04	6,451.4	56,495	777,825	247,575	1,025,400
27-Sep-04	6,492.1	56,852	780,289	248,111	1,028,400
07-Oct-04	6,508.4	56,994	789,339	249,261	1,038,600
15-Oct-04	6,528.8	57,173	795,323	250,477	1,045,800
19-Oct-04	6,541.0	57,280	798,370	251,030	1,049,400
28-Oct-04	6,557.3	57,422	805,072	252,428	1,057,500
04-Nov-04	6,577.7	57,601	809,388	254,112	1,063,500
11-Nov-04	6,663.3	58,351	809,373	254,427	1,063,800
17-Nov-04	6,679.6	58,493	813,846	255,954	1,069,800
23-Nov-04	6,704.0	58,707	815,871	256,629	1,072,500
01-Dec-04	6,708.1	58,743	818,447	257,353	1,075,800
09-Dec-04	6,720.3	58,850	825,818	258,582	1,084,400
15-Dec-04	6,744.8	59,064	831,411	259,289	1,090,700
21-Dec-04	6,761.1	59,207	836,911	259,289	1,096,200
03-Jan-05	6,850.7	59,992	848,711	259,289	1,108,000
12-Jan-05	6,891.5	60,349	853,611	259,289	1,112,900
20-Jan-05	6,924.1	60,635	859,476	259,824	1,119,300
27-Jan-05	6,981.1	61,134	864,329	260,671	1,125,000
01-Feb-05	7,013.7	61,419	867,637	261,264	1,128,900
08-Feb-05	7,058.5	61,811	872,617	262,083	1,134,700
17-Feb-05	7,103.4	62,205	879,040	263,060	1,142,100
23-Feb-05	7,225.7	63,276	883,368	263,632	1,147,000
03-Mar-05	7,274.6	63,704	889,041	264,459	1,153,500
08-Mar-05	7,307.2	63,989	892,526	264,974	1,157,500
15-Mar-05	7,347.9	64,346	895,198	265,602	1,160,800
22-Mar-05	7,372.4	64,560	899,294	266,206	1,165,500
29-Mar-05	7,413.1	64,917	898,895	269,205	1,168,100
06-Apr-05	7,453.9	65,274	904,348	270,652	1,175,000
14-Apr-05	7,494.6	65,630	903,599	277,501	1,181,100
20-Apr-05	7,531.3	65,952	904,434	278,967	1,183,400
27-Apr-05	7,572.0	66,308	905,998	279,902	1,185,900
03-May-05	7,572.0	66,308	907,569	280,831	1,188,400
13-May-05	7,576.1	66,344	909,996	281,504	1,191,500
17-May-05	7,576.1	66,344	910,118	281,583	1,191,700
27-May-05	7,584.3	66,416	911,688	282,912	1,194,600
03-Jun-05	7,590.4	66,469	912,599	283,802	1,196,400
09-Jun-05	7,590.4	66,469	913,562	285,038	1,198,600
15-Jun-05	7,604.6	66,594	914,093	286,707	1,200,800
22-Jun-05	7,596.5	66,523	914,759	286,741	1,201,500
06-Jul-05	7,600.6	66,559	917,068	287,132	1,204,200
14-Jul-05	7,604.6	66,594	920,201	287,499	1,207,700
21-Jul-05	7,606.7	66,612	923,019	287,681	1,210,700
03-Aug-05	7,620.9	66,736	927,240	287,760	1,215,000
11-Aug-05	7,625.0	66,772	927,840	287,760	1,215,600
15-Aug-05	7,625.0	66,772	927,836	287,764	1,215,600
17-Aug-05	7,625.0	66,772	927,836	287,764	1,215,600
25-Aug-05	7,633.2	66,844	931,061	288,139	1,219,200
31-Aug-05	7,637.2	66,879	933,239	289,261	1,222,500

<sup>1</sup> Increase in coal tar removal w/ no change in groundwater removal volume due to coal tar collection tank and wash tank being pumped out and shipped to WRR in Eau Claire, WI. Total volume of 1324 gallons, w/ a current estimate of 85% coal tar in that volume.

<sup>2</sup> Correction of revised quantity of coal tar removed on 4/23/2003 of -211.9 gallons due to settling of emulsified coal tar measured on this date.

**Table 4  
Remediation System Air Treatment Summary  
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) <sup>1</sup>	Sample Type (Influent/ Effluent)	Air Flow Rate (CFM)	Effluent Temp. (F)	Total Hydrocarbons (mg/m <sup>3,2</sup> )	Benzene (mg/m <sup>3,2</sup> )	Total Hydrocarbon Rate (lbs/day) <sup>3</sup>	Benzene Rate (lbs/day) <sup>3</sup>	Cummulative Mass of Hydrocarbons Removed by Carbon (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Removed by Carbon (lbs.) <sup>4</sup>	Cummulative Mass of Hydrocarbons Emitted (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Emitted (lbs.) <sup>4</sup>
28-Sep-00	2	Effluent	176	70	5	3.33	0.08	0.05	-	-	0.2	0.1
19-Jan-01	21	Influent	176	-	45.5	9.1	0.71	0.14	10.36	0.00		
19-Jan-01	21	Effluent	176	45	13.7	9.1	0.21	0.14			4.2	2.8
30-Mar-01	84	Influent	176	-	71.7	26.3	1.11	0.41	50.73	18.08		
30-Mar-01	84	Effluent	176	52	30.4	7.8	0.47	0.12			33.9	10.4
11-Apr-01	96	Influent	176	-	33	7.67	0.51	0.12	56.32	19.14		
11-Apr-01	96	Effluent	176	62	3	2	0.05	0.03			34.5	10.8
17-May-01	110	Effluent	176	68	5	3.33	0.08	0.05			35.6	11.5
13-Jun-01	125	Effluent	176	80	5	3.33	0.08	0.05			36.7	12.3
31-Jul-01	135	Effluent	176	80	5	3.33	0.08	0.05			37.5	12.8
7-Dec-01	196	Influent	176	35	60	10	0.93	0.16	116.90	26.49		
7-Dec-01	196	Effluent	176	35	5	3.33	0.08	0.05			44.2	17.2
22-Feb-02	232	Influent	176	30	303	39	4.70	0.61	284.47	47.15		
22-Feb-02	232	Effluent	176	30	3	2	0.05	0.03			45.8	18.4
4-Apr-02	267	Influent	176	55	33	8	0.51	0.12	300.76	50.41		
4-Apr-02	267	Effluent	176	55	3	2	0.05	0.03			47.5	19.4
8-Aug-02	393	Influent	15	80	1270	311	1.68	0.41	473.04	91.27		
8-Aug-02	393	Effluent	15	80	236	65.8	0.31	0.09			86.8	30.4
31-Oct-02	456	Influent	125	32	2100	410	23.14	4.52	1919.39	373.59		
31-Oct-02	456	Intermediate	125	32	32.7	3.33	0.36	0.04				
31-Oct-02	456	Effluent	125	32	16.6	2	0.18	0.02			98.3	31.8
27-Nov-02	470	Influent	125	25	1780	500	19.61	5.51	2193.53	450.21		
27-Nov-02	470	Intermediate	125	25	15.3	3.33	0.17	0.04				
27-Nov-02	470	Effluent	125	25	3	2	0.03	0.02			98.8	32.1
30-Jan-03	534	Influent	125	20	17.7	3.33	0.20	0.04	2189.80	445.01		
30-Jan-03	534	Intermediate	125	20	19.7	6.67	0.22	0.07				
30-Jan-03	534	Effluent	125	20	23	10.7	0.25	0.12			115.0	39.7
19-Feb-03	554	Influent	125	19	5	3.33	0.06	0.04	2188.43	444.73		
19-Feb-03	554	Intermediate	125	19	5	3.33	0.06	0.04				
19-Feb-03	554	Effluent	125	19	11.2	4.6	0.12	0.05			117.5	40.7
2-Apr-03	580	Influent	125	29	22	3.33	0.24	0.04	2187.11	442.42		
2-Apr-03	580	Intermediate	125	29	47.3	14.7	0.52	0.16				
2-Apr-03	580	Effluent	125	29	26.6	11.4	0.29	0.13			125.1	43.9
23-Apr-03	596	Influent	125	29	66.3	18.3	0.73	0.20	2195.52	444.62		
23-Apr-03	596	Intermediate	125	29	20.7	3.33	0.23	0.04				
23-Apr-03	596	Effluent	125	29	18.6	5.8	0.20	0.06			128.4	45.0
21-May-03	619	Influent	125	29	43	10	0.47	0.11	2198.51	445.69		
21-May-03	619	Intermediate	125	29	36.7	3.33	0.40	0.04				
21-May-03	619	Effluent	125	29	31.2	5.8	0.34	0.06			136.3	46.4
25-Jun-03	654	Influent	125	29	22	3.33	0.24	0.04	2196.74	442.57		
25-Jun-03	654	Intermediate	125	29	47.3	14.7	0.52	0.16				
25-Jun-03	654	Effluent	125	29	26.6	11.4	0.29	0.13			146.5	50.8
30-Jul-03	684	Influent	125	29	10	3.33	0.11	0.04	2187.05	442.57		
30-Jul-03	684	Intermediate	125	29	15.7	3.33	0.17	0.04				
30-Jul-03	684	Effluent	125	29	39.3	3.33	0.43	0.04			159.5	51.9
28-Aug-03	713	Influent	125	29	5	3.33	0.06	0.04	2183.67	443.00		
28-Aug-03	713	Intermediate	125	29	15	3.33	0.17	0.04				
28-Aug-03	713	Effluent	125	29	15.6	2	0.17	0.02			164.5	52.6
29-Sep-03	745	Influent	125	29	21.3	3.33	0.23	0.04	2182.22	442.34		
29-Sep-03	745	Intermediate	125	29	15	3.33	0.17	0.04				
29-Sep-03	745	Effluent	125	29	25.4	5.2	0.28	0.06			173.5	54.4
29-Oct-03	775	Influent	125	29	5	3.33	0.06	0.04	2179.24	442.78		
29-Oct-03	775	Intermediate	125	29	14.3	3.33	0.16	0.04				
29-Oct-03	775	Effluent	125	29	14	2	0.15	0.02			178.1	55.1

**Table 4  
Remediation System Air Treatment Summary  
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) <sup>1</sup>	Sample Type (Influent/Effluent)	Air Flow Rate (CFM)	Effluent Temp. (F)	Total Hydrocarbons (mg/m <sup>3</sup> ) <sup>2</sup>	Benzene (mg/m <sup>3</sup> ) <sup>2</sup>	Total Hydrocarbon Rate (lbs/day) <sup>3</sup>	Benzene Rate (lbs/day) <sup>3</sup>	Cummulative Mass of Hydrocarbons Removed by Carbon (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Removed by Carbon (lbs.) <sup>4</sup>	Cummulative Mass of Hydrocarbons Emitted (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Emitted (lbs.) <sup>4</sup>
19-Nov-03	796	Influent	125	29	5	3.33	0.06	0.04	2179.71	443.09		
19-Nov-03	796	Intermediate	125	29	5	3.33	0.06	0.04				
19-Nov-03	796	Effluent	125	29	3	2	0.03	0.02			178.8	55.5
29-Dec-03	836	Influent	125	29	5	3.33	0.06	0.04	2177.59	443.67		
29-Dec-03	836	Intermediate	125	29	5	3.33	0.06	0.04				
29-Dec-03	836	Effluent	125	29	9.8	2	0.11	0.02			183.1	56.4
20-Jan-04	858	Influent	125	29	12.7	3.33	0.14	0.04	2179.94	444.00		
20-Jan-04	858	Intermediate	125	29	5	3.33	0.06	0.04				
20-Jan-04	858	Effluent	125	29	3	2	0.03	0.02			183.8	56.9
26-Feb-04	895	Influent	125	29	28.3	6.67	0.31	0.07	2183.65	443.78		
26-Feb-04	895	Intermediate	125	29	23.7	8.33	0.26	0.09				
26-Feb-04	895	Effluent	125	29	19.2	7.20	0.21	0.08			191.7	59.8
19-Mar-04	917	Influent	125	29	12.67	3.33	0.14	0.04	2183.52	442.94		
19-Mar-04	917	Intermediate	125	29	20.00	9.00	0.22	0.10				
19-Mar-04	917	Effluent	125	29	13.20	6.80	0.15	0.07			194.9	61.5
27-Apr-04	956	Influent	125	29	11.30	3.33	0.12	0.04	2184.26	443.51		
27-Apr-04	956	Intermediate	125	29	11.00	3.33	0.12	0.04				
27-Apr-04	956	Effluent	125	29	9.60	2.00	0.11	0.02			199.0	62.3
26-May-04	985	Influent	125	29	5.00	3.33	0.06	0.04	2178.25	443.11		
26-May-04	985	Intermediate	125	29	19.70	3.33	0.22	0.04				
26-May-04	985	Effluent	125	29	23.80	4.60	0.26	0.05			206.6	63.8
24-Jun-04	1014	Influent	125	29	11.70	3.33	0.13	0.04	2179.11	443.53		
24-Jun-04	1014	Intermediate	125	29	13.00	3.33	0.14	0.04				
24-Jun-04	1014	Effluent	125	29	9.00	2.00	0.10	0.02			209.5	64.4
6-Jul-04	1026	Influent	125	29	108.00	3.33	1.19	0.04	2191.17	443.71		
6-Jul-04	1026	Intermediate	125	29	23.01	3.33	0.25	0.04				
6-Jul-04	1026	Effluent	125	29	16.80	2.00	0.19	0.02			211.7	64.7
19-Aug-04	1070	Influent	125	29	5.00	3.33	0.06	0.04	2192.14	444.35		
19-Aug-04	1070	Intermediate	125	29	5.00	3.33	0.06	0.04				
19-Aug-04	1070	Effluent	125	29	3.00	2.00	0.03	0.02			213.1	65.7
30-Sep-04	1112	Influent	125	29	10.30	3.33	0.11	0.04	2190.89	444.97		
30-Sep-04	1112	Intermediate	125	29	14.30	3.33	0.16	0.04				
30-Sep-04	1112	Effluent	125	29	13.00	2.00	0.14	0.02			219.2	66.6
28-Oct-04	1140	Influent	125	29	13.30	3.33	0.15	0.04	2186.48	442.48		
28-Oct-04	1140	Intermediate	125	29	37.30	13.70	0.41	0.15				
28-Oct-04	1140	Effluent	125	29	27.60	11.40	0.30	0.13			227.7	70.1
17-Nov-04	1160	Influent	125	29	23.70	7.00	0.26	0.08	2186.54	442.21		
17-Nov-04	1160	Intermediate	125	29	21.00	6.67	0.23	0.07				
17-Nov-04	1160	Effluent	125	29	23.40	8.20	0.26	0.09			232.8	71.9
15-Dec-04	1188	Influent	125	29	84.70	23.30	0.93	0.26	2197.50	445.51		
15-Dec-04	1188	Intermediate	125	29	52.00	15.00	0.57	0.17				
15-Dec-04	1188	Effluent	125	29	49.20	12.60	0.54	0.14			248.0	75.8
12-Jan-05	1216	Influent	125	29	12.30	3.33	0.14	0.04	2200.37	445.92		
12-Jan-05	1216	Intermediate	125	29	5.00	3.33	0.06	0.04				
12-Jan-05	1216	Effluent	125	29	3.00	2.00	0.03	0.02			248.9	76.4
8-Feb-05	1243	Influent	125	29	15.30	4.17	0.17	0.05	2201.05	446.42		
8-Feb-05	1243	Intermediate	125	29	14.00	4.17	0.15	0.05				
8-Feb-05	1243	Effluent	125	29	13.00	2.50	0.14	0.03			252.8	77.2
25-Mar-05	1288	Influent	125	29	5.00	3.33	0.06	0.04	2199.66	447.08		
25-Mar-05	1288	Intermediate	125	29	5.00	3.33	0.06	0.04				
25-Mar-05	1288	Effluent	125	29	7.80	2.00	0.09	0.02			256.7	78.2
6-Apr-05	1300	Influent	125	29	13.00	3.33	0.14	0.04	2200.32	447.26		
6-Apr-05	1300	Intermediate	125	29	11.00	3.33	0.12	0.04				
6-Apr-05	1300	Effluent	125	29	8.00	2.00	0.09	0.02			257.7	78.4
12-May-05	1336	Influent	125	29	5.00	3.33	0.06	0.04	2195.09	445.72		
12-May-05	1336	Intermediate	125	29	16.15	6.50	0.18	0.07				
12-May-05	1336	Effluent	125	29	18.20	7.20	0.20	0.08			265.0	81.3
15-Jun-05	1370	Influent	125	29	5.00	3.33	0.06	0.04	2192.76	446.22		
15-Jun-05	1370	Intermediate	125	29	10.00	3.33	0.11	0.04				
15-Jun-05	1370	Effluent	125	29	11.20	2.00	0.12	0.02			269.2	82.0
6-Jul-05	1391	Influent	125	29	5.00	3.33	0.06	0.04	2193.23	446.53		
6-Jul-05	1391	Intermediate	125	29	5.00	3.33	0.06	0.04				
6-Jul-05	1391	Effluent	125	29	3.00	2.00	0.03	0.02			269.8	82.5
3-Aug-05	1419	Influent	125	29	5.00	3.33	0.06	0.04	2193.84	446.94		
3-Aug-05	1419	Intermediate	125	29	5.00	3.33	0.06	0.04				
3-Aug-05	1419	Effluent	125	29	3.00	2.00	0.03	0.02			270.8	83.1

- (1) Total Elapsed Time, in days, only for days of remediation system operation, not days since start-up.
- (2) When a below detection result occurs, the assumed value is half of the detection limit.  
For the 1/19/01 sampling, the samples were incorrectly labeled: Drum #1 is influent to Drum #1, Drum #2 is influent to Drum #2, and Air Stripper is Air Effluent.
- (3) Daily emission rate based on laboratory results.
- (4) Emission rate to date calculated from average daily emission rate and total days of remediation system operation.

**Table 5  
Remediation System Water Treatment Summary  
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) <sup>1</sup>	Sample Type	Cummulative Volume of Treated Effluent (gal.)	VOCs (ug/L) <sup>2</sup>	Benzene (ug/L) <sup>2</sup>	Cummulative Mass of VOCs Removed (lbs.) <sup>3</sup>	Cummulative Mass of Benzene Removed (lbs.) <sup>3</sup>	Cummulative Mass of VOCs Discharged (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Discharged (lbs.) <sup>4</sup>
5-Oct-00	9	Influent <sup>5</sup>		121,985	60,000				
5-Oct-00	9	Effluent	10,592	12.9	0.94	10.8	5.3	0.00114	0.00008
19-Jan-01	21	Inlet <sup>6</sup>		859.5	90.4				
19-Jan-01	21	Mid Carbon		17.3	0.62				
19-Jan-01	21	Effluent	17,346	16.6	0.7	17.7	8.7	0.00208	0.00012
30-Mar-01	84	Inlet <sup>6</sup>		1,120.60	140				
30-Mar-01	84	Effluent	44,613	14.45	0.05	45.6	22.4	0.00520	0.00024
11-Apr-01	96	Influent <sup>5</sup>		100,629	46,000				
11-Apr-01	96	Inlet <sup>6</sup>		557.5	110				
11-Apr-01	96	Mid Carbon		50.73	5.1				
11-Apr-01	96	Effluent	54,636	13.79	0.94	54.0	26.3	0.00636	0.00031
17-May-01	110	Effluent	58,967	23.46	1.3	57.6	27.9	0.00721	0.00036
13-Jun-01	125	Effluent	61,094	7.74	0.05	59.4	28.8	0.00735	0.00036
13-Jul-01	135	Influent <sup>5</sup>		97,450	51,000				
31-Jul-01	135	Effluent	65,758	12.36	0.05	63.2	30.7	0.00783	0.00036
20-Sep-01	157	Influent <sup>5</sup>		113,925	58,000				
20-Sep-01	157	Inlet <sup>6</sup>		3,205	1,100				
20-Sep-01	157	Effluent	91,894	19.23	0.05	88.1	43.4	0.01203	0.00038
7-Dec-01	196	Influent <sup>5</sup>		101,620	52,000				
7-Dec-01	196	Inlet <sup>6</sup>		4,153.5	530				
7-Dec-01	196	Effluent	136,300	9.835	0.05	125.7	62.7	0.01567	0.00039
14-Feb-02	224	Influent		83,055	35,000				
14-Feb-02	224	Precarbon		35,355.3	7,200				
14-Feb-02	224	Effluent	181,000	8.1	0.2	156.7	75.7	0.01869	0.00047
21-Mar-02	256	Influent		143,140	53,000				
21-Mar-02	256	Precarbon		15,716.5	1,600				
21-Mar-02	256	Effluent	202,700	88.22	67	182.6	85.3	0.03467	0.01264
11-Jun-02	323	Influent		63,570	23,000				
11-Jun-02	323	Precarbon		26,320.0	6,400				
11-Jun-02	323	Effluent	286,524	1,244	1,100	226.2	100.6	0.90481	0.78458
8-Aug-02	393	Influent		87,060	41,000				
8-Aug-02	393	Precarbon		26,320.0	18,695				
8-Aug-02	393	Effluent	402,800	6,554.1	4,000	304.3	136.5	7.26406	4.67835
31-Oct-02	456	Influent		27,090.0	5,600				
31-Oct-02	456	Precarbon		24,362.5	13,000				
31-Oct-02	456	Effluent	502,600	2,438.3	1,600	324.9	139.9	9.30128	6.01517
27-Nov-02	470	Influent		52,350.0	22,000				
27-Nov-02	470	Precarbon		15,633.0	7,300				
27-Nov-02	470	Effluent	519,000	6,449.5	4,600	331.1	142.2	10.18390	6.64674
18-Dec-02	491	Influent		45,325.0	19,000				
18-Dec-02	491	Precarbon		7,685.0	2,700				
18-Dec-02	491	Effluent	542,800	4,785.0	3,300	339.2	145.4	11.13420	7.30426
30-Jan-03	534	Influent		35,275.0	9,600				
30-Jan-03	534	Precarbon		4,230.0	1,700				
30-Jan-03	534	Effluent	581,400	4,584.7	2,200	349.1	147.7	12.61092	8.01520
19-Feb-03	554	Influent		71,520.0	32,000				
19-Feb-03	554	Precarbon		3,149.0	81				
19-Feb-03	554	Effluent	598,000	4,004.0	1,500	358.4	152.0	13.16556	8.22366
2-Apr-03	580	Influent		20,876.0	6,300				
2-Apr-03	580	Precarbon		1,553.0	120				
2-Apr-03	580	Effluent	623,300	114.7	22	362.8	153.3	13.18977	8.22832
23-Apr-03	596	Influent		30,060.0	9,500				
23-Apr-03	596	Precarbon		2,095.0	29				
23-Apr-03	596	Effluent	645,300	3.0	0.15	368.3	155.0	13.19032	8.22835
21-May-03	619	Influent		25,470.0	6,100				
21-May-03	619	Precarbon		5,491.0	71				
21-May-03	619	Effluent	687,700	3.1	0.15	377.3	157.2	13.19142	8.22840
25-Jun-03	654	Influent		42,650.0	26,000				
25-Jun-03	654	Precarbon		3,310.0	150				
25-Jun-03	654	Effluent	721,000	1.9	0.12	389.2	164.4	13.19195	8.22843
30-Jul-03	684	Influent		8,440.0	1,400				
30-Jul-03	684	Precarbon		144.0	6				
30-Jul-03	684	Effluent	748,800	1.2	0.19	391.1	164.7	13.19224	8.22848
28-Aug-03	713	Influent		10,630.0	2,200				
28-Aug-03	713	Precarbon		434.3	36				
28-Aug-03	713	Effluent	761,700	0.5	0.16	392.3	165.0	13.19229	8.22849

**Table 5  
Remediation System Water Treatment Summary  
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) <sup>1</sup>	Sample Type	Cummulative Volume of Treated Effluent (gal.)	VOCs (ug/L) <sup>2</sup>	Benzene (ug/L) <sup>2</sup>	Cummulative Mass of VOCs Removed (lbs.) <sup>3</sup>	Cummulative Mass of Benzene Removed (lbs.) <sup>3</sup>	Cummulative Mass of VOCs Discharged (lbs.) <sup>4</sup>	Cummulative Mass of Benzene Discharged (lbs.) <sup>4</sup>
29-Sep-03	745	Influent		18,770	3,400				
29-Sep-03	745	Precarbon		300.1	17				
29-Sep-03	745	Effluent	781,500	0.7	0.12	395.4	165.5	13.19241	8.22851
29-Oct-03	775	Influent		8,730	1,200				
29-Oct-03	775	Precarbon		169.7	3				
29-Oct-03	775	Effluent	793,400	0.3	0.18	396.3	165.7	13.19243	8.22853
19-Nov-03	796	Influent		10,940	2,000				
19-Nov-03	796	Precarbon		529	23				
19-Nov-03	796	Effluent	799,900	3.5	0.71	396.8	165.8	13.19262	8.22857
29-Dec-03	836	Influent		11,710	2,100				
29-Dec-03	836	Precarbon		7,815	2,900				
29-Dec-03	836	Effluent	821,500	0.0	0.12	399.0	166.1	13.19262	8.22859
20-Jan-04	858	Influent		9,021	2,200				
20-Jan-04	858	Precarbon		576	44				
20-Jan-04	858	Effluent	826,300	2.57	0.50	399.3	166.2	13.19273	8.22861
26-Feb-04	895	Influent		21,425	4,900				
26-Feb-04	895	Precarbon		631	38				
26-Feb-04	895	Effluent	854,700	0.49	0.05	404.4	167.4	13.19284	8.22862
15-Mar-04	917	Influent		20,660	4,500				
15-Mar-04	917	Precarbon		673	39				
15-Mar-04	917	Effluent	876,900	0	0.05	408.2	168.2	13.19284	8.22863
27-Apr-04	956	Influent		11,650	3,500				
27-Apr-04	956	Precarbon		430	74				
27-Apr-04	956	Effluent	893,300	0.28	0.09	409.8	168.7	13.19288	8.22865
26-May-04	985	Influent		22,300	4,800				
26-May-04	985	Precarbon		500	12				
26-May-04	985	Effluent	914,600	0	0.15	413.8	169.6	13.19288	8.22867
24-Jun-04	1014	Influent		24,040	4,800				
24-Jun-04	1014	Precarbon		627	47				
24-Jun-04	1014	Effluent	953,200	0	0.15	421.5	171.1	13.19288	8.22872
6-Jul-04	1026	Influent		15,530	2,600				
6-Jul-04	1026	Precarbon		153.1	9.8				
6-Jul-04	1026	Effluent	965,100	0.59	0.09	423.1	171.4	13.19294	8.22873
19-Aug-04	1070	Influent		15,060	1,900				
19-Aug-04	1070	Precarbon		82.2	5.2				
19-Aug-04	1070	Effluent	994,600	0.37	0.09	426.8	171.8	13.19303	8.22875
27-Sep-04	1109	Influent		23,520	5,800				
27-Sep-04	1109	Precarbon		645.9	17.0				
27-Sep-04	1109	Effluent	1,028,400	0.29	0.09	433.4	173.5	13.19311	8.22878
28-Oct-04	1140	Influent		21,680	5,000				
28-Oct-04	1140	Precarbon		274.6	26				
28-Oct-04	1140	Effluent	1,057,500	0.64	0.09	438.7	174.7	13.19327	8.22880
17-Nov-04	1160	Influent		29,010	9,600				
17-Nov-04	1160	Precarbon		201.7	14				
17-Nov-04	1160	Effluent	1,069,800	0.00	0.09	441.7	175.7	13.19327	8.22881
15-Dec-04	1188	Influent		22,710	6,200				
15-Dec-04	1188	Precarbon		199.4	21				
15-Dec-04	1188	Effluent	1,090,700	201.1	200	445.6	176.7	13.22834	8.26380
12-Jan-05	1216	Influent		69,060	23,000				
12-Jan-05	1216	Precarbon		11.8	1.9				
12-Jan-05	1216	Effluent	1,112,900	167.5	160	458.3	180.9	13.25937	8.29354
8-Feb-05	1243	Influent		18,930	4,300				
8-Feb-05	1243	Precarbon		211.8	27				
8-Feb-05	1243	Effluent	1,134,700	0.7	0.42	461.8	181.7	13.25950	8.29362
18-Mar-05	1281	Influent		10,710	2,100				
18-Mar-05	1281	Precarbon		926	510				
18-Mar-05	1281	Effluent	1,160,800	1.13	0	464.1	182.2	13.25974	8.29362
6-Apr-05	1300	Influent		7,750	1,200				
6-Apr-05	1300	Precarbon		220.6	18				
6-Apr-05	1300	Effluent	1,175,000	0	0	465.0	182.3	13.25974	8.29362
12-May-05	1336	Influent		5,610	850				
12-May-05	1336	Precarbon		349.4	79				
12-May-05	1336	Effluent	1,191,500	1.0	0	465.8	182.4	13.25988	8.29362
15-Jun-05	1370	Influent		47,000	14,000				
15-Jun-05	1370	Precarbon		21.1	0.95				
15-Jun-05	1370	Effluent	1,200,800	0	0	469.5	183.5	13.25988	8.29362
6-Jul-05	1391	Influent		9,550	2,100				
6-Jul-05	1391	Precarbon		130.8	18				
6-Jul-05	1391	Effluent	1,204,200	0	0	469.7	183.6	13.25988	8.29362
3-Aug-05	1419	Influent		74,740	32,000				
3-Aug-05	1419	Precarbon		70.0	3.0				
3-Aug-05	1419	Effluent	1,215,000	0	0	476.5	186.5	13.25988	8.29362

- (1) Total Elapsed Time, in days, only for days of remediation system operation, not days since start-up.
- (2) When a below detection result occurs, the assumed value is half of the detection limit.
- (3) Removal based on Influent vs. Effluent
- (4) Emission rate to date calculated from average concentrations in effluent and total days of remediation system operation.
- (5) This sample was collected at the oil-water separator discharge, prior to the air diffuser.
- (6) This sample was collected at the inlet to the liquid phase carbon.

**Table 6**  
**June 2005 Fish Sampling Results - Smallmouth Bass (*Micropterus dolomieu*)**  
**Ecological Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

REFERENCE AREA																							
Analyte	Lab	units	MDOLOMIEUI-W-1-1			MDOLOMIEUI-W-1-2			MDOLOMIEUI-W-1-3			MDOLOMIEUI-W-1-4			MDOLOMIEUI-W-1-5			MDOLOMIEUI-W-1-6			MDOLOMIEUI-W-1-7		
			Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result
NAPHTHALENE	STL	ug/kg	5		5	5.8		5.8	5.9		5.9	6.4		6.4	6.9		6.9	6.4		6.4	6.9		6.9
2-METHYLNAPHTHALENE	STL	ug/kg	5		5	5.4		5.4	6.4		6.4	5.7		5.7	6.1		6.1	6.1		6.1	6.1		6.1
1-METHYLNAPHTHALENE	STL	ug/kg	3.4		3.4	3.7		3.7	4.4		4.4	3.4		3.4	3.9		3.9	3.9		3.9	3.9		3.9
BIPHENYL	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	3		3	2.6		2.6	3.3		3.3	2 U		1	3.1		3.1	3		3	2.9		2.9
ACENAPHTHYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
ACENAPHTHENE	STL	ug/kg	2.9		2.9	3		3	3.7		3.7	2 U		1	2.8		2.8	3.2		3.2	3.8		3.8
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	2.3		2.3	2.3		2.3	2.3		2.3	2.1		2.1	2.8		2.8	2.8		2.8	2.4		2.4
FLUORENE	STL	ug/kg	2.9		2.9	2.7		2.7	3.1		3.1	2 U		1	2.5		2.5	3.1		3.1	3.5		3.5
PHENANTHRENE	STL	ug/kg	8.8		8.8	7.7		7.7	8.1		8.1	6.1		6.1	6.3		6.3	7		7	9.7		9.7
ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
1-METHYLPHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total LMW PAHs					37.3			37.2			41.2			30.7			38.4			39.5			43.2
FLUORANTHENE	STL	ug/kg	2.4		2.4	2.1		2.1	2.2		2.2	2 U		1	2 U		1	2 U		1	2.8		2.8
PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total HMW PAHs					13.4			13.1			13.2			12			12			12			13.8
Total PAHs		ug/kg			50.7			50.3			54.4			42.7			50.4			51.5			57.0
LIPIDS	STL	%	NA		NA	3.4		3.4	3.8		3.8	1.3		1.3	2.0		2.0	3.1		3.1	2.5		2.5

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
ND = Not detected  
NA = Not analyzed

**Table 6**  
**June 2005 Fish Sampling Results - Smallmouth Bass (*Micropterus dolomieu*)**  
**Ecological Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

AREA OF CONCERN																										
Analyte	Lab	units	MDOLOMIEUI-W-3-1			MDOLOMIEUI-W-3-DUP1			MDOLOMIEUI-W-3-2			MDOLOMIEUI-W-3-3			MDOLOMIEUI-W-3-4			MDOLOMIEUI-W-3-5			MDOLOMIEUI-W-3-6			MDOLOMIEUI-W-3-7		
			Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result	Result	Flag	Risk Result
NAPHTHALENE	STL	ug/kg	11		11	11		11	11		11	6.9		6.9	8.4		8.4	4.8		4.8	21		21	2.4		2.4
2-METHYLNAPHTHALENE	STL	ug/kg	13		13	13		13	11		11	6		6	7.8		7.8	5		5	12		12	5.1		5.1
1-METHYLNAPHTHALENE	STL	ug/kg	25		25	24		24	24		24	8.5		8.5	8.1		8.1	6.1		6.1	33		33	3.5		3.5
BIPHENYL	STL	ug/kg	2.4		2.4	2.4		2.4	2.1		2.1	2 U		1	2 U		1	2 U		1	2.2		2.2	2 U		1
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	16		16	16		16	14		14	4.6		4.6	4.2		4.2	2.9		2.9	11		11	3.2		3.2
ACENAPHTHYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
ACENAPHTHENE	STL	ug/kg	31		31	31		30	30		30	9.1		9.1	8.5		8.5	6.5		6.5	27		27	3.2		3.2
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	4.4		4.4	4.6		4.6	4		4	2 U		1	2 U		1	2 U		1	3.2		3.2	2 U		1
FLUORENE	STL	ug/kg	12		12	12		12	11		11	3.2		3.2	3.4		3.4	2.3		2.3	8.7		8.7	2.2		2.2
PHENANTHRENE	STL	ug/kg	15		15	15		15	12		12	5.7		5.7	8.1		8.1	5.6		5.6	14		14	6.2		6.2
ANTHRACENE	STL	ug/kg	2.5		2.5	2.5		2.5	2.1		2.1	2 U		1	2 U		1	2 U		1	2.7		2.7	2 U		7.7
1-METHYLPHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		7.7
Total LMW PAHs					134.3			133.5			123.2			49			53.5			38.2			136.8			44.2
FLUORANTHENE	STL	ug/kg	2.3		2.3	2.2		2.2	2.1		2.1	2 U		1	6.3		6.3	2.2		2.2	2.3		2.3	2.4		2.4
PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	4.2		4.2	2 U		1	2 U		11	2 U		1
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2.6		2.6	2 U		1	2 U		1	2 U		1
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	3		3	2 U		1	2 U		1	2 U		1
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2.5		2.5	2 U		1	2 U		1	2 U		1
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2		1	2 U		1	2 U		1	2 U		1
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total HMW PAHs					13.3			13.2			13.1			12			25.6			13.2			23.3			13.4
Total PAHs		ug/kg			147.6			146.7			136.3			61.0			79.1			51.4			160.1			57.6
LIPIDS	STL	%	3.1		3.1	3.1		3.1	2.9		2.9	1.3		3.4	1.7		1.7	1.6		1.6	2.7		2.7	2.5		2.5

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
ND = Not detected  
NA = Not analyzed

**Table 7**  
**June 2005 Fish Sampling Results - Brown Bullhead (Ameiurus nebulosus)**  
**Ecological Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

		REFERENCE AREA																														
Analyte	Lab	units	ANEBUSUS-W-1-1			ANEBUSUS-W-1-DUP1			ANEBUSUS-W-1-2			ANEBUSUS-W-1-3			ANEBUSUS-W-1-4			ANEBUSUS-W-1-5			ANEBUSUS-W-1-6			ANEBUSUS-W-1-7			ANEBUSUS-W-1-8					
			Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk			
NAPHTHALENE	STL	ug/kg	2	U	1	2.1		2.1	2	U	1	3		3	2.2		2.2	3.3		3.3	2.8		2.8	2	U	1	2.6		2.6			
2-METHYLNAPHTHALENE	STL	ug/kg	3.2		3.2	3.6		3.6	2	U	1	2.5		2.5	3.1		3.1	3.3		3.3	3.4		3.4	2	U	1	3.3		3.3			
1-METHYLNAPHTHALENE	STL	ug/kg	2.4		2.4	2.8		2.8	2	U	1	2	U	1	2.3		2.3	2.7		2.7	2.6		2.6	2	U	1	2.6		2.6			
BIPHENYL	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	2.2		2.2	2.6		2.6	2	U	1	2	U	1	2	U	1	2	U	1	2.3		2.3	2	U	1	2.5		2.5			
ACENAPHTHYLENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
ACENAPHTHENE	STL	ug/kg	3		3	3.2		3.2	2	U	1	2	U	1	2	U	1	2.1		2.1	2		2	2	U	1	2	J	2			
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2.1		2.1	2	U	1	3		3			
FLUORENE	STL	ug/kg	2.3		2.3	2.6		2.6	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
PHENANTHRENE	STL	ug/kg	7.3		7.3	7.4		7.4	4.1		4.1	7.3		7.3	5.8		5.8	4.8		4.8	6.3		6.3	3.2		3.2	5.7		5.7			
ANTHRACENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
1-METHYLPHENANTHRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
Total LMW PAHs					26.4			29.3			15.1			21.8			21.4			23.2			25.5			14.2			26.7			
FLUORANTHENE	STL	ug/kg	6.5		6.5	6.6		6.6	3.1		3.1	6		6	3.7		3.7	3		3.7	4.5		4.5	5.2		5.2	3.6		3.6			
PYRENE	STL	ug/kg	3.3		3.3	3.1		3.1	2	U	1	2.6		1.3	2	U	1	2	U	1	2	U	1	2	U	1	2.6		2.6			
BENZO(A)ANTHRACENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
CHRYSENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(B)FLUORANTHENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(K)FLUORANTHENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(E)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(A)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
PERYLENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
Total HMW PAHs					19.8			19.7			14.1			17.3			14.7			14.7			16.5			17.8			14.6			
Total PAHs		ug/kg			46.2			49.0			29.2			39.1			36.1			37.9			42.0			32.0			41.3			
LIPIDS	STL	%	3		3	2.1		2.1	0.9		0.9	1.2		1.2	2		2	2.6		2.6	1.6		1.6	1.4		1.4	1.6		1.6			

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E = Exceeds instrument calibration range  
ND = Not detected

**Table 7**  
**June 2005 Fish Sampling Results - Brown Bullhead (Ameiurus nebulosus)**  
**Ecological Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

		AREA OF CONCERN																											
		ANEBULOSIS-W-3-1			ANEBULOSIS-W-3-DUP1			ANEBULOSIS-W-3-2			ANEBULOSIS-W-3-3			ANEBULOSIS-W-3-4			ANEBULOSIS-W-3-5			ANEBULOSIS-W-3-6			ANEBULOSIS-W-3-7			ANEBULOSIS-W-3-8			
Analyte	Lab	units	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk			
NAPHTHALENE	STL	ug/kg	35		35	34		34	46		46	8.4		8.4	53		53	6		6	12		12	17		51	9.7		9.7
2-METHYLNAPHTHALENE	STL	ug/kg	16		16	17		17	21		21	6.9		6.9	33		33	4.3		4.3	5.8		5.8	8		28	4.8		4.8
1-METHYLNAPHTHALENE	STL	ug/kg	51		51	58		58	81		81	15		15	100	E	100	7.6		7.6	12		12	26		47	13		13
BIPHENYL	STL	ug/kg	4.2		4.2	5.1		5.1	6.4		6.4	2	U	1	7.7		7.7	2	U	3.3	2	U	1	2.7		4.7	2	U	2.8
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	17		17	13		13	30		30	6.3		6.3	43		43	3.1		3.1	6.9		6.9	11		13	5.5		5.5
ACENAPHTHYLENE	STL	ug/kg	2	U	1	2	U	1	4		4	2	U	1	13		13	2	U	1	2	U	1	2	U	1	2	U	1
ACENAPHTHENE	STL	ug/kg	43		43	40		40	77		77	14		14	100	E	100	6.4		6.4	13		13	24		35	9.9		9.9
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	3.4		3.4	3.6		3.6	6.9		6.9	2.8		2.8	13		13	2		2	2.8		2.8	3.4		2.4	2	U	1
FLUORENE	STL	ug/kg	14		14	17		17	25		25	4.5		4.5	29		29	2.4		2.4	6		6	12		12	4		4
PHENANTHRENE	STL	ug/kg	21		21	22		22	43		43	7.5		7.5	41		41	5.4		5.4	11		11	36		13	6.8		6.8
ANTHRACENE	STL	ug/kg	4.6		4.6	4.8		4.8	9.9		9.9	2	U	1	13		13	2	U	1	2.1		2.1	4.7		3.1	2	U	2
1-METHYLPHENANTHRENE	STL	ug/kg	2	U	1	2	U	1	3.4		3.4	2	U	1	4.1		13	2	U	1	2	U	1	2	U	1	2	U	1
Total LMW PAHs					211.2			216.5			353.6			69.4			451.9			43.5			74.6			211.2			61.5
FLUORANTHENE	STL	ug/kg	7.8		7.8	8.5		8.5	13		13	2.5		2.5	9.8		4.1	3.4		3.4	7.3		7.3	17		3.3	2.2		2.2
PYRENE	STL	ug/kg	5.8		5.8	6		6	11		11	2	U	1	9.6		9.8	2		2	33		33	10		2.6	2	U	1
BENZO(A)ANTHRACENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2.2		9.6	2	U	1	2	U	1	2	U	1	2	U	1
CHRYSENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	3.3		2.2	2	U	1	2.9		2.9	2	U	1	2	U	1
BENZO(B)FLUORANTHENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(K)FLUORANTHENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(E)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(A)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2.2		1.1	2	U	1	2	U	1	2	U	1	2	U	1
PERYLENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1	2	U	1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2	U	1	2	U	1	2.7		2.7	2	U	1	4.3		4.3	2	U	1	2	U	1	2	U	1	2	U	1
Total HMW PAHs					23.6			24.5			35.7			13.5			37.1			15.4			52.2			15.9			13.2
Total PAHs	ug/kg				234.8			241.0			389.3			82.9			489.0			58.9			126.8			227.1			74.7
LIPIDS	STL	%	3		3	3.1		3.1	2.5		2.5	2.1		2.1	2.4		2.4	2.1		2.1	1.4		1.4	1.4		1.4	1.1		1.1

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E = Exceeds instrument calibration range  
ND = Not detected

**Table 8**  
**June 2005 Fish Sampling Results - Shorthead Redhorse (*Moxostoma macrolepidotum*)**  
**Human Health Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

Analyte	Lab	units	REFERENCE AREA																										
			MMACROLEPIDOTUM F-1-1			MMACROLEPIDOTUM F-1-1 DUP			MMACROLEPIDOTUM F-1-2			MMACROLEPIDOTUM F-1-3			MMACROLEPIDOTUM 4 F-1-1			MMACROLEPIDOTUM F-1-5			MMACROLEPIDOTUM F-1-6			MMACROLEPIDOTUM F-1-7			MMACROLEPIDOTUM 8 F-1-1		
			Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk
NAPHTHALENE	STL	ug/kg	2.1		2.1	2.2		2.2	2.2		2.2	4.2		4.2	2.4		2.4	3.1		3.1	3		3	4.2		4.2	3.6		3.6
2-METHYLNAPHTHALENE	STL	ug/kg	5.3		5.3	5.5		5.5	2.4		2.4	9.8		9.8	2 U		3.9	7.1		7.1	4.1		4.1	7.4		7.4	4.9		4.9
1-METHYLNAPHTHALENE	STL	ug/kg	2.9		2.9	3.2		3.2	2 U		1	6.5		6.5	2 U		2.6	4.5		4.5	3		3	4.8		4.8	3.3		3.3
BIPHENYL	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	4.8		4.8	2 U		1	3.2		3.2	2 U		1	2.8		2.8	2.1		2.1
ACENAPHTHYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
ACENAPHTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	4.3		4.3	2 U		1	2.4		2.4	2 U		1	2 U		1	2 U		1
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
FLUORENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2.2		2.2	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	4.8		4.8	2.2		2.2	4.3		4.3	2 U		1	2.5		2.5	2 U		1
ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
1-METHYLPHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total LMW PAHs					19.3			19.9			14.6			41.6			19.1			30.6			19.1			28.7			21.9
FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2.5		2.5	2 U		1	2 U		1	2 U		1
PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total HMW PAHs					12			12			12			12			12			13.5			12			12			12
Total PAHs		ug/kg			31.3			31.9			26.6			53.6			31.1			44.1			31.1			40.7			33.9
LIPIDS	STL	%	2.6		2.6			2.6			1.6			3.4	3.8		3.8	3.9		3.9	2.4		2.4	3.1		3.1	2.7		2.7

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
ND = Not detected

**Table 8**  
**June 2005 Fish Sampling Results - Shorthead Redhorse (*Moxostoma macrolepidotum*)**  
**Human Health Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

Analyte	Lab	units	AREA OF CONCERN																										
			MMACROLEPIDOTUM F-3-1			MMACROLEPIDOTUM DUP F-3-1			MMACROLEPIDOTUM F-3-2			MMACROLEPIDOTUM F-3-3			MMACROLEPIDOTUM 4 F-3-			MMACROLEPIDOTUM F-3-5			MMACROLEPIDOTUM F-3-6			MMACROLEPIDOTUM F-3-7			MMACROLEPIDOTUM 8 F-3-		
			Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk
NAPHTHALENE	STL	ug/kg	320 E		320	290 E		290	3.1		3.1	71		71	13		13	33		33	30		30	190 E		190	200 E		200
2-METHYLNAPHTHALENE	STL	ug/kg	210 E		210	190 E		190	3.9		3.9	51		51	11		11	30		30	22		22	89		89	91		91
1-METHYLNAPHTHALENE	STL	ug/kg	570 E		570	520 E		520	3.3		3.3	110 E		110	15		15	52		52	25		25	250 E		250	270 E		270
BIPHENYL	STL	ug/kg	49		49	37		37	2 U		1	9.1		9.1	2 U		5.6	4.9		4.9	2.1		2.1	21		21	21		22
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	270 E		270	240 E		240	2.1		2.1	40		40	4.4		4.4	18		18	10		10	62		62	66		66
ACENAPHTHYLENE	STL	ug/kg	19		19	17		17	2 U		1	4.6		4.6	2 U		1	3.7		3.7	2.2		2.2	7.7		7.7	7.5		7.5
ACENAPHTHENE	STL	ug/kg	540 E		540	480 E		480	2 U		1	100 E		100	11		11	50		50	22		22	160 E		160	170 E		170
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	51		51	47		47	2 U		1	11		11	2.5		2.5	4.1		4.1	7.3		7.3	9.7		9.7	10		10
FLUORENE	STL	ug/kg	160 E		160	160 E		160	2 U		1	34		34	3.7		3.7	17		17	9.9		9.9	52		52	54		54
PHENANTHRENE	STL	ug/kg	200 E		200	180 E		180	5.6		5.6	75		75	13		13	28		28	37		37	98		98	100 E		100
ANTHRACENE	STL	ug/kg	43		43	39		39	2 U		1	19		19	2.9		2.9	7.2		7.2	7.7		7.7	16		16	20		20
1-METHYLPHENANTHRENE	STL	ug/kg	4.3		4.3	3.7		3.7	2 U		1	2.8		2.8	2 U		1	2 U		1	3		3	2 U		1	2.8		2.8
Total LMW PAHs					2436.3			2203.7			25			527.5			84.1			248.9			178.2			956.4			1013.3
FLUORANTHENE	STL	ug/kg	17		17	15		15	2 U		1	9.2		9.2	3.8		3.8	3.8		3.8	12		12	7		7	7.5		7.5
PYRENE	STL	ug/kg	9.7		9.7	9		9	2 U		1	6.3		6.3	2.6		2.6	2.5		2.5	6.8		6.8	4.5		4.5	5.2		5.2
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total HMW PAHs					36.7			34			12			25.5			16.4			16.3			28.8			21.5			22.7
Total PAHs		ug/kg			2473.0			2237.7			37.0			553.0			100.5			265.2			207.0			977.9			1036.0
LIPIDS	STL	%	4.2		4.2	3.1		3.1	5.7		5.7	2.6		2.6	1.6		1.6	1.4		1.4	3.6		3.6	1.9		1.9	1.0		1.0

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
ND = Not detected

**Table 9**  
**June 2005 Fish Sampling Results - Walleye (*Stizostedion vitreum*)**  
**Human Health Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

REFERENCE AREA																																						
Analyte	Lab	units	SVITREUM-F-1-1			SVITREUM-F-1-1RE			SVITREUM-F-1-DUP1			SVITREUM-F-1-2			SVITREUM-F-1-2RE			SVITREUM-F-1-3			SVITREUM-F-1-4			SVITREUM-F-1-5			SVITREUM-F-1-6			SVITREUM-W-1-2 (=F-1-7)			SVITREUM-W-1-4 (=F-1-8)					
			Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk						
NAPHTHALENE	STL	ug/kg	3		3	3.1		3.1	2.9		2.9	3.2		3.2	3.1		3.1	2.5		2.5	2.1		2.1	2.6		2.6	2.1		2.1	2		2	3		3			
2-METHYLNAPHTHALENE	STL	ug/kg	3.7		3.7	4.1		4.1	4.3		4.3	3.9		3.9	3.9		3.9	3		3	2.3		2.3	3.5		3.5	2.9		2.9	2.2		2.2	4.3		4.3			
1-METHYLNAPHTHALENE	STL	ug/kg	2.4		2.4	2.7		2.7	2.9		2.9	2.6		2.6	2.6		2.6	2 U		1	2 U		1	2.2		2.2	2 U		1	2 U		1	2.6		2.6			
BIPHENYL	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
ACENAPHTHYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
ACENAPHTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
FLUORENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
PHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2.5		2.5	2 U		1	2 U		1	2 U		1	2.2		2.2
ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
1-METHYLPHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
Total LMW PAHs					18.1			18.9			19.1			18.7			18.6			15.5			15.9			17.3			15			14.2			20.1			
FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2.3		2.3	2 U		1	2 U		1	2 U		1	2 U		1			
PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2.6		2.6	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
BENZO(G,H,I)PERYLENE	STL	ug/kg	9.5 U		4.75	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1			
Total HMW PAHs					15.75			12			12			12			12			12			14.9			12			12			12			12			
Total PAHs		ug/kg			33.9			30.9			31.1			30.7			30.6			27.5			30.8			29.3			27.0			26.2			32.1			
LIPIDS	STL	%	2		2	NA		NA	2.3		2.3	2		2	NA		NA	1.5		1.5	1.3		1.3	1.9		1.9	1.4		1.4	1		1	2.5		2.5			

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
J= Estimated value  
ND = Not detected  
RE= Reanalysis

**Table 9**  
**June 2005 Fish Sampling Results - Walleye (*Stizostedion vitreum*)**  
**Human Health Risk Assessment**  
**Draft - Unvalidated Data**  
**Northern States Power, Ashland, Wisconsin**

AREA OF CONCERN																																
Analyte	Lab	units	SVITREUM-F-3-1			SVITREUM-F-3-2			SVITREUM-F-3-3			SVITREUM-F-3-4			SVITREUM-F-3-4RE			SVITREUM-F-3-5			SVITREUM-F-3-5RE			SVITREUM-F-3-6			SVITREUM-W-3-3 (=F-3-7)			SVITREUM-W-3-4 (=F-3-8)		
			Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk	Result	Flag	Risk			
NAPHTHALENE	STL	ug/kg	22		22	53		53	51		51	19		19	19		19	22		22	21		21	74		74	2.9		2.9	54		54
2-METHYLNAPHTHALENE	STL	ug/kg	17		17	30		30	28		28	15		15	14		14	14		14	13		13	61		61	2 J		1	31		31
1-METHYLNAPHTHALENE	STL	ug/kg	31		31	49		49	47		47	27		27	28		28	17		17	17		17	110		110	3.1		3.1	61		61
BIPHENYL	STL	ug/kg	3.3		3.3	4.6		4.6	4.7		4.7	2.8		2.8	2.6		2.6	2.1		2.1	2		2	11		11	2 U		1	5.6		5.6
2,6 DIMETHYLNAPHTHALENE	STL	ug/kg	12		12	14		14	13		13	8.4		8.4	8.9		8.9	5.8		5.8	5.8		5.8	44		44	2 U		1	17		17
ACENAPHTHYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	3.1		3.1	2 U		1	2 U		1
ACENAPHTHENE	STL	ug/kg	30		30	37		37	35		35	25		25	26		26	16		16	17		17	100		100	2.6		2.6	47		47
2,3,5 TRIMETHYLNAPHTHALENE	STL	ug/kg	2.5		2.5	3.1		3.1	2.4		2.4	2 U		1	2 U		1	2 U		1	2 U		1	9.7		8	2 U		1	3.1		3.1
FLUORENE	STL	ug/kg	11		11	13		13	12		12	8.3		8.3	7.9		7.9	6.6		6.6	6.5		6.5	35		35	2 U		1	15		15
PHENANTHRENE	STL	ug/kg	11		11	14		14	13		13	8.5		8.3	9.1		9.1	8.7		8.7	10		10	31		31	2 U		1	14		14
ANTHRACENE	STL	ug/kg	2.6		2.6	3.6		3.6	3.1		3.1	2		2	2 U		1	2		2	2 U		11	7.9		7.9	2 U		1	3.1		3.1
1-METHYLPHENANTHRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total LMW PAHs					144.4			223.3			211.2			118.8			119.5			97.2			115			486			17.6			252.8
FLUORANTHENE	STL	ug/kg	3.2		3.2	5.3		5.3	3.3		3.3	3.1		3.1	2.5		2.5	3.7		3.7	3.4		3.4	8.1		8.1	2 U		1	3.3		3.3
PYRENE	STL	ug/kg	2.2		2.2	3.8		3.8	2.6		2.6	2.9		2.9	2 U		9.6	3.6		3.6	2.9		2.9	6.9		6.9	2 U		1	3.1		3.1
BENZO(A)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
CHRYSENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(B)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(K)FLUORANTHENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(E)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(A)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
INDENO(1,2,3-CD)PYRENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
DIBENZO(A,H)ANTHRACENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
BENZO(G,H,I)PERYLENE	STL	ug/kg	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1	2 U		1
Total HMW PAHs					15.4			19.1			15.9			16			22.1			17.3			16.3			25			12			16.4
Total PAHs		ug/kg			159.8			242.4			227.1			134.8			141.6			114.5			131.3			511.0			29.6			269.2
LIPIDS	STL	%	0.9		0.9	2.5		2.5	1.6		1.6	1.3		1.3	NA		NA	2.7		2.7	NA		NA	2.5		2.5	1		1	1.8		1.8

STL = Severn Trent Laboratories, Inc. Colchester, Vermont  
ug/kg = micrograms per kilogram, wet weight  
U = Compound not detected  
E= Exceeds instrument calibration range  
J= Estimated value  
ND = Not detected  
RE= Reanalysis

## **Appendix A**

### **Interim Treatment System Laboratory Reporting Forms**

# ANALYTICAL REPORT

**Client:** URS Corporation (Milwaukee)  
 Attn: Paul Sklar  
 10200 West Innovation Drive #500  
 Milwaukee, WI 53226 4827

**NLS Project: 91718**

**NLS Customer: 91206**

**Fax: 414 831 4101 Phone: 414 831 4100**

**Project:** Xcel Energy - Ashland Remediation

**Influent NLS ID: 380524**

Ref. Line 1 COC 78571 Influent Matrix: WW  
 Collected: 08/03/05 00:00 Received: 08/04/05

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					08/11/05	SW846 8260	721026460

**Pre Carbon NLS ID: 380525**

Ref. Line 2 COC 78571 Pre Carbon Matrix: WW  
 Collected: 08/03/05 00:00 Received: 08/04/05

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					08/11/05	SW846 8260	721026460

**Effluent NLS ID: 380526**

Ref. Line 3 COC 78571 Effluent Matrix: WW  
 Collected: 08/03/05 00:00 Received: 08/04/05

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					08/09/05	SW846 8260	721026460

**Trip Blank NLS ID: 380527**

Ref. Line COC 78571 Trip Blank Matrix: TB  
 Collected: 08/03/05 00:00 Received: 08/04/05

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					08/09/05	SW846 8260	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection      LOQ = Limit of Quantitation      ND = Not Detected      1000 ug/L = 1 mg/L  
 DWB = Dry Weight Basis      NA = Not Applicable      %DWB = (mg/kg DWB) / 10000  
 MCL = Maximum Contaminant Levels for Drinking Water Samples

Reviewed by: \_\_\_\_\_  
 Authorized by:  
 R. T. Krueger  
 President

## ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2000)

Page 1 of 2

Customer: URS Corporation (Milwaukee) NLS Project: 91718

Project Description: Xcel Energy - Ashland Remediation

Project Title: Template: SATW Printed: 08/15/2005 15:31

Sample: 380525 Pre Carbon

Collected: 08/03/05

Analyzed: 08/11/05 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	[3.0]	ug/L	5	1.5	4.8
Bromobenzene	ND	ug/L	5	0.52	1.8
Bromochloromethane	ND	ug/L	5	1.3	4.4
Bromodichloromethane	ND	ug/L	5	1.6	5.3
Bromoform	ND	ug/L	5	1.4	4.6
Bromomethane	ND	ug/L	5	1.9	6.5
n-Butylbenzene	ND	ug/L	5	1.6	5.2
sec-Butylbenzene	ND	ug/L	5	1.6	5.5
tert-Butylbenzene	ND	ug/L	5	1.5	5.2
Carbon Tetrachloride	ND	ug/L	5	1.5	4.9
Chlorobenzene	ND	ug/L	5	1.0	3.5
Chloroethane	ND	ug/L	5	8.5	28
Chloroform	ND	ug/L	5	1.5	4.9
Chloromethane	ND	ug/L	5	1.2	3.8
2-Chlorotoluene	ND	ug/L	5	2.0	6.6
4-Chlorotoluene	ND	ug/L	5	1.8	6.1
Dibromochloromethane	ND	ug/L	5	1.5	4.9
1,2-Dibromo-3-Chloropropane	ND	ug/L	5	1.7	5.5
1,2-Dibromoethane	ND	ug/L	5	1.5	5.0
Dibromomethane	ND	ug/L	5	1.6	5.3
1,2-Dichlorobenzene	ND	ug/L	5	1.4	4.6
1,3-Dichlorobenzene	ND	ug/L	5	1.2	3.9
1,4-Dichlorobenzene	ND	ug/L	5	1.2	3.9
Dichlorodifluoromethane	ND	ug/L	5	0.89	3.2
1,1-Dichloroethane	ND	ug/L	5	1.5	5.0
1,2-Dichloroethane	ND	ug/L	5	1.7	5.7
1,1-Dichloroethene	ND	ug/L	5	2.1	6.8
cis-1,2-Dichloroethene	ND	ug/L	5	2.0	6.7
trans-1,2-Dichloroethene	ND	ug/L	5	1.7	5.8
1,2-Dichloropropane	ND	ug/L	5	1.7	5.8
1,3-Dichloropropane	ND	ug/L	5	1.7	5.6
2,2-Dichloropropane	ND	ug/L	5	2.2	7.3
1,1-Dichloropropene	ND	ug/L	5	1.6	5.4
cis-1,3-Dichloropropene	ND	ug/L	5	1.3	4.5
trans-1,3-Dichloropropene	ND	ug/L	5	1.6	5.4
Ethylbenzene	ND	ug/L	5	1.3	4.3
Hexachlorobutadiene	ND	ug/L	5	2.1	6.9
Isopropylbenzene	ND	ug/L	5	1.8	6.1
p-Isopropyltoluene	ND	ug/L	5	1.5	5.1
Methylene chloride	ND	ug/L	5	2.1	7.1
Naphthalene	44	ug/L	5	2.0	6.5
n-Propylbenzene	ND	ug/L	5	1.7	5.6
ortho-Xylene	[3.1]	ug/L	5	1.3	4.4
Styrene	[4.6]	ug/L	5	1.6	5.3
1,1,1,2-Tetrachloroethane	ND	ug/L	5	1.4	4.7
1,1,2,2-Tetrachloroethane	ND	ug/L	5	1.6	5.5
Tetrachloroethene	ND	ug/L	5	1.5	5.1
Toluene	[5.1]	ug/L	5	1.7	5.6



## ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Page 1 of 6

Customer: URS Corporation (Milwaukee) NLS Project: 91718

Project Description: Xcel Energy - Ashland Remediation

Project Title: Template: SAT2W Printed: 08/15/2005 15:31

Sample: 380524 Influent Collected: 08/03/05 Analyzed: 08/09/05 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	32000	ug/L	4000	570	1900
Bromobenzene	ND	ug/L	800	120	410
Bromochloromethane	ND	ug/L	800	140	470
Bromodichloromethane	ND	ug/L	800	110	380
Bromoform	ND	ug/L	800	160	550
Bromomethane	ND	ug/L	800	240	790
n-Butylbenzene	ND	ug/L	800	120	390
sec-Butylbenzene	ND	ug/L	800	110	360
tert-Butylbenzene	ND	ug/L	800	130	430
Carbon Tetrachloride	ND	ug/L	800	120	390
Chlorobenzene	ND	ug/L	800	120	400
Chloroethane	ND	ug/L	800	510	1700
Chloroform	ND	ug/L	800	82	260
Chloromethane	ND	ug/L	800	140	460
2-Chlorotoluene	ND	ug/L	800	110	370
4-Chlorotoluene	ND	ug/L	800	140	470
Dibromochloromethane	ND	ug/L	800	160	540
1,2-Dibromo-3-Chloropropane	ND	ug/L	800	240	810
1,2-Dibromoethane	ND	ug/L	800	180	590
Dibromomethane	ND	ug/L	800	190	640
1,2-Dichlorobenzene	ND	ug/L	800	120	400
1,3-Dichlorobenzene	ND	ug/L	800	120	400
1,4-Dichlorobenzene	ND	ug/L	800	170	580
Dichlorodifluoromethane	ND	ug/L	800	220	740
1,1-Dichloroethane	ND	ug/L	800	120	410
1,2-Dichloroethane	ND	ug/L	800	150	510
1,1-Dichloroethene	ND	ug/L	800	150	510
cis-1,2-Dichloroethene	ND	ug/L	800	140	480
trans-1,2-Dichloroethene	ND	ug/L	800	160	550
1,2-Dichloropropane	ND	ug/L	800	120	390
1,3-Dichloropropane	ND	ug/L	800	140	480
2,2-Dichloropropane	ND	ug/L	800	110	360
1,1-Dichloropropene	ND	ug/L	800	100	350
cis-1,3-Dichloropropene	ND	ug/L	800	85	280
trans-1,3-Dichloropropene	ND	ug/L	800	190	640
Ethylbenzene	570	ug/L	800	130	450
Hexachlorobutadiene	ND	ug/L	800	250	820
Isopropylbenzene	ND	ug/L	800	110	370
p-Isopropyltoluene	ND	ug/L	800	100	350
Methylene chloride	ND	ug/L	800	200	680
Naphthalene	15000	ug/L	800	200	640
n-Propylbenzene	ND	ug/L	800	120	400
ortho-Xylene	1800	ug/L	800	170	580
Styrene	5200	ug/L	800	120	390
1,1,1,2-Tetrachloroethane	ND	ug/L	800	150	500
1,1,2,2-Tetrachloroethane	ND	ug/L	800	240	800
Tetrachloroethene	ND	ug/L	800	140	470
Toluene	16000	ug/L	4000	1000	3300

## ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Page 2 of 6

Customer: URS Corporation (Milwaukee) NLS Project: 91718

Project Description: Xcel Energy - Ashland Remediation

Project Title: Template: SAT2W Printed: 08/15/2005 15:31

Sample: 380524 Influent Collected: 08/03/05 Analyzed: 08/09/05 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	800	170	550
1,2,4-Trichlorobenzene	ND	ug/L	800	150	510
1,1,1-Trichloroethane	ND	ug/L	800	110	360
1,1,2-Trichloroethane	ND	ug/L	800	160	520
Trichloroethene	ND	ug/L	800	100	340
Trichlorofluoromethane	ND	ug/L	800	390	1300
1,2,3-Trichloropropane	ND	ug/L	800	300	1000
1,2,4-Trimethylbenzene	770	ug/L	800	120	410
1,3,5-Trimethylbenzene	ND	ug/L	800	120	390
Vinyl chloride	ND	ug/L	800	160	530
meta,para-Xylene	3400	ug/L	800	280	930
MTBE	ND	ug/L	800	160	530
Isopropyl ether	ND	ug/L	800	85	270
Dibromofluoromethane (SURR**)	110%				
Toluene-d8 (SURR**)	119%				
1-Bromo-4-Fluorobenzene (SURR**)	123%				

## ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Page 3 of 6

Customer: URS Corporation (Milwaukee) NLS Project: 91718

Project Description: Xcel Energy - Ashland Remediation

Project Title: Template: SAT2W Printed: 08/15/2005 15:31

Sample: 380526 Effluent Collected: 08/03/05 Analyzed: 08/09/05 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	1	0.14	0.48
Bromobenzene	ND	ug/L	1	0.15	0.51
Bromochloromethane	ND	ug/L	1	0.18	0.59
Bromodichloromethane	ND	ug/L	1	0.14	0.47
Bromoform	ND	ug/L	1	0.21	0.69
Bromomethane	ND	ug/L	1	0.30	0.99
n-Butylbenzene	ND	ug/L	1	0.15	0.49
sec-Butylbenzene	ND	ug/L	1	0.14	0.45
tert-Butylbenzene	ND	ug/L	1	0.16	0.54
Carbon Tetrachloride	ND	ug/L	1	0.15	0.49
Chlorobenzene	ND	ug/L	1	0.15	0.49
Chloroethane	ND	ug/L	1	0.63	2.1
Chloroform	ND	ug/L	1	0.10	0.32
Chloromethane	ND	ug/L	1	0.17	0.58
2-Chlorotoluene	ND	ug/L	1	0.14	0.46
4-Chlorotoluene	ND	ug/L	1	0.18	0.59
Dibromochloromethane	ND	ug/L	1	0.20	0.67
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.30	1.0
1,2-Dibromoethane	ND	ug/L	1	0.22	0.74
Dibromomethane	ND	ug/L	1	0.24	0.80
1,2-Dichlorobenzene	ND	ug/L	1	0.15	0.50
1,3-Dichlorobenzene	ND	ug/L	1	0.15	0.50
1,4-Dichlorobenzene	ND	ug/L	1	0.22	0.73
Dichlorodifluoromethane	ND	ug/L	1	0.28	0.92
1,1-Dichloroethane	ND	ug/L	1	0.15	0.52
1,2-Dichloroethane	ND	ug/L	1	0.19	0.64
1,1-Dichloroethene	ND	ug/L	1	0.19	0.64
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.60
trans-1,2-Dichloroethene	ND	ug/L	1	0.21	0.69
1,2-Dichloropropane	ND	ug/L	1	0.15	0.49
1,3-Dichloropropane	ND	ug/L	1	0.18	0.60
2,2-Dichloropropane	ND	ug/L	1	0.14	0.45
1,1-Dichloropropene	ND	ug/L	1	0.13	0.43
cis-1,3-Dichloropropene	ND	ug/L	1	0.11	0.35
trans-1,3-Dichloropropene	ND	ug/L	1	0.24	0.80
Ethylbenzene	ND	ug/L	1	0.17	0.56
Hexachlorobutadiene	ND	ug/L	1	0.31	1.0
Isopropylbenzene	ND	ug/L	1	0.14	0.47
p-Isopropyltoluene	ND	ug/L	1	0.13	0.44
Methylene chloride	ND	ug/L	1	0.25	0.85
Naphthalene	ND	ug/L	1	0.25	0.80
n-Propylbenzene	ND	ug/L	1	0.15	0.50
ortho-Xylene	ND	ug/L	1	0.22	0.72
Styrene	ND	ug/L	1	0.15	0.49
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.19	0.62
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.30	1.0
Tetrachloroethene	ND	ug/L	1	0.18	0.59
Toluene	ND	ug/L	1	0.25	0.83



## ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Page 5 of 6

Customer: URS Corporation (Milwaukee) NLS Project: 91718

Project Description: Xcel Energy - Ashland Remediation

Project Title: Template: SAT2W Printed: 08/15/2005 15:31

Sample: 380527 Trip Blank

Collected: 08/03/05

Analyzed: 08/09/05 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	1	0.14	0.48
Bromobenzene	ND	ug/L	1	0.15	0.51
Bromochloromethane	ND	ug/L	1	0.18	0.59
Bromodichloromethane	ND	ug/L	1	0.14	0.47
Bromoform	ND	ug/L	1	0.21	0.69
Bromomethane	ND	ug/L	1	0.30	0.99
n-Butylbenzene	ND	ug/L	1	0.15	0.49
sec-Butylbenzene	ND	ug/L	1	0.14	0.45
tert-Butylbenzene	ND	ug/L	1	0.16	0.54
Carbon Tetrachloride	ND	ug/L	1	0.15	0.49
Chlorobenzene	ND	ug/L	1	0.15	0.49
Chloroethane	ND	ug/L	1	0.63	2.1
Chloroform	ND	ug/L	1	0.10	0.32
Chloromethane	ND	ug/L	1	0.17	0.58
2-Chlorotoluene	ND	ug/L	1	0.14	0.46
4-Chlorotoluene	ND	ug/L	1	0.18	0.59
Dibromochloromethane	ND	ug/L	1	0.20	0.67
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.30	1.0
1,2-Dibromoethane	ND	ug/L	1	0.22	0.74
Dibromomethane	ND	ug/L	1	0.24	0.80
1,2-Dichlorobenzene	ND	ug/L	1	0.15	0.50
1,3-Dichlorobenzene	ND	ug/L	1	0.15	0.50
1,4-Dichlorobenzene	ND	ug/L	1	0.22	0.73
Dichlorodifluoromethane	ND	ug/L	1	0.28	0.92
1,1-Dichloroethane	ND	ug/L	1	0.15	0.52
1,2-Dichloroethane	ND	ug/L	1	0.19	0.64
1,1-Dichloroethene	ND	ug/L	1	0.19	0.64
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.60
trans-1,2-Dichloroethene	ND	ug/L	1	0.21	0.69
1,2-Dichloropropane	ND	ug/L	1	0.15	0.49
1,3-Dichloropropane	ND	ug/L	1	0.18	0.60
2,2-Dichloropropane	ND	ug/L	1	0.14	0.45
1,1-Dichloropropene	ND	ug/L	1	0.13	0.43
cis-1,3-Dichloropropene	ND	ug/L	1	0.11	0.35
trans-1,3-Dichloropropene	ND	ug/L	1	0.24	0.80
Ethylbenzene	ND	ug/L	1	0.17	0.56
Hexachlorobutadiene	ND	ug/L	1	0.31	1.0
Isopropylbenzene	ND	ug/L	1	0.14	0.47
p-Isopropyltoluene	ND	ug/L	1	0.13	0.44
Methylene chloride	ND	ug/L	1	0.25	0.85
Naphthalene	ND	ug/L	1	0.25	0.80
n-Propylbenzene	ND	ug/L	1	0.15	0.50
ortho-Xylene	ND	ug/L	1	0.22	0.72
Styrene	ND	ug/L	1	0.15	0.49
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.19	0.62
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.30	1.0
Tetrachloroethene	ND	ug/L	1	0.18	0.59
Toluene	ND	ug/L	1	0.25	0.83



## ANALYTICAL REPORT

Paul Sklar  
URS CORPORATION  
10200 Innovation Dr.  
Suite 500  
Milwaukee, WI 53226

08/15/2005

TestAmerica Job: 05.10350

Project Number:  
Project: IH-Xcel Energy/Ashland

Enclosed is the Analytical Reports for the following samples submitted to the Cedar Falls Division of TestAmerica Analytical Testing Corporation for analysis.

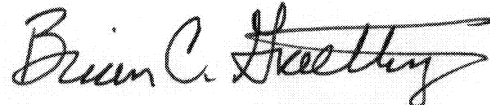
Sample Number	Sample Description	Date Taken	Date Received
879606	Air Stripper	08/03/2005	08/05/2005
879607	1st Stage Carbon	08/03/2005	08/05/2005
879608	Air Effluent	08/03/2005	08/05/2005

TestAmerica Analytical Testing Corporation AIHA Lab Accreditation Number 285

Laboratory Director - Michael K. McGee, CIH

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.



Brian C. Graettinger  
Operations Manager

## ANALYTICAL REPORT

Paul Sklar  
 URS CORPORATION  
 10200 Innovation Dr.  
 Suite 500  
 Milwaukee, WI 53226

08/15/2005

Date Received: 08/05/2005

URS/XCEL ENERGY  
 CC:DAVE TRAINOR -- NEWFIELDS

Job Number: 05.10350

	Result	Units	Result Flag	Date Taken	Date Analyzed	Analyst	Analysis Method	Quantitation Limit
879606 Air Stripper								
Air Volume	3.0	Liters		08/03/2005	08/15/2005	bcg		
Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Benzene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Ethyl Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Ethylbenzene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Hydrocarbons, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1550	0.030
Hydrocarbons, Total	<10.0	mg/m3		08/03/2005	08/15/2005	bcg	N1550	
Toluene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Toluene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Xylenes, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.030
Xylenes, Total	<10.0	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
879607 1st Stage Carbon								
Air Volume	3.0	Liters		08/03/2005	08/15/2005	bcg		
Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Benzene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Ethyl Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Ethylbenzene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Hydrocarbons, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1550	0.030
Hydrocarbons, Total	<10.0	mg/m3		08/03/2005	08/15/2005	bcg	N1550	
Toluene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020

TOTAL HYDROCARBONS QUANTIFIED AS: Gasoline

Results are not blank corrected.

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Results relate only to the items tested.

**ANALYTICAL REPORT**

Paul Sklar  
URS CORPORATION  
10200 Innovation Dr.  
Suite 500  
Milwaukee, WI 53226

08/15/2005

Date Received: 08/05/2005

URS/XCEL ENERGY  
CC:DAVE TRAINOR -- NEWFIELDS

Job Number: 05.10350

	Result	Units	Result Flag	Date Taken	Date Analyzed	Analyst	Analysis Method	Quantitation Limit
879607 1st Stage Carbon								
Toluene	<6.67	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Xylenes, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.030
Xylenes, Total	<10.0	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
879608 Air Effluent								
Air Volume	5.0	Liters		08/03/2005	08/15/2005	bcg		
Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Benzene	<4.00	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Ethyl Benzene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Ethylbenzene	<4.00	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Hydrocarbons, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1550	0.030
Hydrocarbons, Total	<6.00	mg/m3		08/03/2005	08/15/2005	bcg	N1550	
Toluene (UST)	<0.020	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.020
Toluene	<4.00	mg/m3		08/03/2005	08/15/2005	bcg	N1501	
Xylenes, Total (UST)	<0.030	mg		08/03/2005	08/12/2005	jlc	NIOSH 1501	0.030
Xylenes, Total	<6.00	mg/m3		08/03/2005	08/15/2005	bcg	N1501	

TOTAL HYDROCARBONS QUANTIFIED AS: Gasoline

Results are not blank corrected.

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