APPENDIX H
SUMMARY OF WMA REGISTRATION AND PERMITTING AND NPDES PERMITTING INFORMATION
BLACKSTONE RIVER WATERSHED

Table H1. Water Management Act (WMA) registrations and permits in the Blackstone River Watershed.

SYSTEM NAME	REGISTRATION ID	PERMIT ID	REGISTERED VOLUME	PERMITTED VOLUME (3/1/2004 - 2/28/2009)	SOURCE NAME	PWS SOURCE ID	SOURCE LOCATION
AGGREGATE INDUSTRIES	21218604	N/A	1.08	N/A	WASH WATER PUMP #2	N/A	GRAFTON
					CONCRETE MIX PLANT #1	N/A	GRAFTON
					DOMESTIC WELL #3	N/A	GRAFTON
					C-1	N/A	MILLBURY
					WELL #2	N/A	MILLBURY
AQUARION WATER COMPANY	21218602	9P21218601	1.03	0.99	MILLBURY AVENUE DUG WELL	2186000-01G	MILLBURY
					OAK POND WELL	2186000-02G	MILLBURY
					NORTH MAIN/JACQUES #1	2186000-03G	MILLBURY
					NORTH MAIN/JACQUES #2	2186000-04G	MILLBURY
AUBURN WATER DEPARTMENT	N/A	9P21201701	N/A	1.75	WELL #1	2017000-01G	AUBURN
					WELL #2	2017000-02G	AUBURN
					WELL #3	2017000-03G	AUBURN
					WELL #4	2017000-04G	AUBURN
					WELL #5	2017000-05G	AUBURN
					WELL #6	2017000-06G	AUBURN
					WELL #7	2017000-07G	AUBURN
					WELL #8	2017000-08G	AUBURN
					WELL #6 WEST	2017000-09G	AUBURN
					WELL #6 NORTH	2017000-10G	AUBURN
					WELL #11	2017000-11G	AUBURN
					WELL #12	2017000-12G	AUBURN
					WELL #5A	2017000-13G	AUBURN
BELLINGHAM DPW (continued on next page)	21202501	9P21202502	0.77	0.97	GP WELL #1	2025000-01G	BELLINGHAM
					GP WELL #2.1	2025000-02G	BELLINGHAM
					GP WELL #3.1	2025000-03G	BELLINGHAM
					GP WELL #4	2025000-04G	BELLINGHAM
					GP WELL #11.1	2025000-11G	BELLINGHAM
					GP WELL #2.2	2025000-13G	BELLINGHAM

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BELLINGHAM DPW (continued from previous page)	21202501	9P21202502	0.77	0.97	GP WELL #2.4	2025000-15G	BELLINGHAM
					GP WELL #3.2	2025000-16G	BELLINGHAM
					GP WELL #11.2	2025000-17G	BELLINGHAM
					GP WELL #11.3	2025000-18G	BELLINGHAM
					GP WELL #11.4	2025000-19G	BELLINGHAM
					GP WELL #11.5	2025000-20G	BELLINGHAM
					GP WELL #3.3	2025000-21G	BELLINGHAM
BIG APPLE REALTY TRUST	41235001	N/A	0.08	N/A	POND A	N/A	WRENTHAM
					POND B	N/A	WRENTHAM
					POND C	N/A	WRENTHAM
					POND D	N/A	WRENTHAM
					WELL A	N/A	WRENTHAM
					WELL B	N/A	WRENTHAM
BLACKSTONE NATIONAL GOLF CLUB	N/A	9P421229002	N/A	0.1	BCH-1	2290016-01G	SUTTON
					IW #1	N/A	SUTTON
					IW #2	N/A	SUTTON
					IW #3	N/A	SUTTON
					IW #4	N/A	SUTTON
					IW #5	N/A	SUTTON
BLACKSTONE WATER DEPARTMENT	21203201	9P21203201	0.44	0.51	WELL #2	2032000-02G	BLACKSTONE
					WELL #4	2032000-04G	BLACKSTONE
					WELL #5 AND 5A	2032000-05G	BLACKSTONE
					WELL #6 AND 6A	2032000-06G	BLACKSTONE
					WELL #7	2032000-07G	BLACKSTONE
BOYLSTON WATER DISTRICT	21203901	N/A	0.17	N/A	GP WELL #4	2039000-04G	BOYLSTON
					GP WELL #5	2039000-05G	BOYLSTON
COZ/HENRY W. COZ/COZ REALTY	21221602	N/A	0.32	N/A	PUMPHOUSE 1	N/A	NORTHBRIDGE
					PUMPHOUSE 2	N/A	NORTHBRIDGE

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SYSTEM NAME	REGISTRATION ID	PERMIT ID	REGISTERED VOLUME	PERMITTED VOLUME (3/1/2004 - 2/28/2009)	SOURCE NAME	PWS SOURCE ID	SOURCE LOCATION
DOUGLAS WATER DEPARTMENT	21207701	9P21207701	0.2	0.17	WEST STREET TUBULAR WELLS	2077000-01G	DOUGLAS
					WEST STREET WELL #2	2077000-02G	DOUGLAS
					GLENN ST. WELL #1	2077000-03G	DOUGLAS
					GLENN ST. WELL #2	2077000-04G	DOUGLAS
GRAFTON WATER DISTRICT	21211004	9P421211004	0.6	0.93	WORCESTER STREET WELL	2110000-02G	GRAFTON
					EAST STREET WELL #2	2110000-03G	GRAFTON
					EAST STREET WELL #3	2110000-04G	GRAFTON
					FOLLETTE ST. WELL	2110000-05G	GRAFTON
HOPEDALE COUNTRY CLUB	21213801	N/A	0.1	N/A	MILL RIVER	N/A	HOPEDALE
HOPEDALE WATER DEPARTMENT	21213802	N/A	0.41	N/A	MILL STREET WELLFIELD	2138000-01G	HOPEDALE
					GREEN ST GP WELL	2138000-02G	HOPEDALE
					GREEN ST GP WELL REP #1	2138000-03G	HOPEDALE
					GREEN ST GP WELL REP #2	2138000-04G	HOPEDALE
					GREEN ST BEDROCK WELL #2	2138000-0AG	HOPEDALE
					GREEN ST BEDROCK WELL #3	2138000-0BG	HOPEDALE
INTERFACE FABRICS GROUP	N/A	9P321207702	N/A	1.5	GUILFORD POND		DOUGLAS
LEICESTER WATER SUPPLY DISTRICT	21215101	N/A	0.19	N/A	ROCK WELL #1	2151000-01G	LEICESTER
					ROCK WELL #2	2151000-02G	LEICESTER
					ROCK WELL #3	2151000-03G	LEICESTER
					JIM DANDY DUG WELL	2151000-04G	LEICESTER
LEWCOTT CORP	21218603	N/A	0.11	N/A	COOLING POND	N/A	MILLBURY
MISCOE SPRINGS INC	21217902	N/A	0.06	N/A	WELL #1	2179019-01G	MENDON
NEW ENGLAND COUNTRY CLUB	N/A	9P21202501	N/A	0.31	POND ON BUNGAY BROOK	N/A	BELLINGHAM
NORTH ATTLEBORO WATER DEPARTMENT	41221101	9P241221101	0.43	0.64	ADAMSDALE WELL	4211000-08G	NORTH ATTLEBORO
					HILLMAN WELL	4211000-09G	NORTH ATTLEBORO
PLEASANT VALLEY COUNTRY CLUB	21229002	N/A	0.16	N/A	POND ON COLD SPRING BROOK	N/A	SUTTON

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RIVERDALE MILLS CORPORATION	N/A	9P21221602	N/A	0.3	BLACKSTONE RIVER	N/A	NORTHBRIDGE
					WELL	N/A	NORTHBRIDGE
SAINT - GOBAIN ABRASIVES	21234801	9P21234802	0.42	0.15	ARARAT STREET WELL	N/A	WORCESTER
					BROOKS STREET WELL	N/A	WORCESTER
					C STREET WELL	N/A	WORCESTER
					HIGGINS STREET WELL	N/A	WORCESTER
					WEASEL BROOK WELL	N/A	WORCESTER
SHREWSBURY DPW	21227101	9P421227101	2.64	1.27	SEWELL STREET #4	2271000-02G	SHREWSBURY
					OAK STREET WELL	2271000-03G	SHREWSBURY
					LAMBERT'S #3.1	2271000-04G	SHREWSBURY
					LAMBERT'S #3.2	2271000-05G	SHREWSBURY
					SEWELL STREET #5	2271000-06G	SHREWSBURY
					HOME FARM #6.1	2271000-07G	SHREWSBURY
					HOME FARM #6.2	2271000-08G	SHREWSBURY
					HOME FARM #6.3	2271000-09G	SHREWSBURY
SOUTH GRAFTON WATER DISTRICT	21211002	N/A	0.2	N/A	PROVIDENCE ROAD WELL #1	2110001-01G	GRAFTON
					FERRY STREET WELL #2	2110001-02G	GRAFTON
					FERRY STREET WELL #3	2110001-03G	GRAFTON
TATNUCK COUNTRY CLUB	21234803	N/A	0.05	N/A	POND AT HOLE #1	N/A	WORCESTER
					WELL #1	N/A	WORCESTER
UPTON DEPARTMENT OF PUBLIC WORKS	N/A	9P421230301	N/A	0.48	GLEN AVENUE WELLFIELD	2303000-01G	WEST UPTON
					WEST RIVER STREET WELL	2303000-02G	WEST UPTON
					RICHARD WELLFIELD	2303000-0AG	WEST UPTON

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UXBRIDGE WATER DEPARTMENT	21230401	9P21230401	0.66	0.58	WELL #1	2304000-01G	UXBRIDGE
					WELL #2	2304000-02G	UXBRIDGE
					WELL #3	2304000-03G	UXBRIDGE
					BERNAT WELL #4	2304000-04G	UXBRIDGE
					BERNAT WELL #5	2304000-05G	UXBRIDGE
					BERNAT WELL #6	2304000-06G	UXBRIDGE
WENTWORTH HILLS LLC	41004518	N/A	N/A	0.2	PW-1	N/A	PLAINVILLE
					PW-2	N/A	PLAINVILLE
					PW-3	N/A	PLAINVILLE
					PW-4	N/A	PLAINVILLE
					PW-5	N/A	PLAINVILLE
					PWS-1	4238013-01G	PLAINVILLE
WHITINSVILLE GOLF CLUB	21221603	N/A	0.05	N/A	MUMFORD RIVER	N/A	NORTHBRIDGE
WHITINSVILLE WATER COMPANY	21221601	9P21221601	1.09	0.34	MEADOW POND TWF	2216000-01G	NORTHBRIDGE
					COOK ALLEN WELLFIELD	2216000-02G	SUTTON
					MEADOW POND GP WELL	2216000-03G	NORTHBRIDGE
WILKINSONVILLE WATER DISTRICT	N/A	9P421229001	N/A	0.29	HATCHERY ROAD WELL	2290014-01G	SUTTON
					WOODBURY POND WELL #1	2290014-02G	SUTTON
					WOODBURY POND WELL #2	2290014-03G	SUTTON
WORCESTER COUNTRY CLUB	21234804	9P321234803	0.1	0	POND ON POOR FARM BROOK	N/A	WORCESTER
WORCESTER DPW	21234805	9P321234803	14.22	3.79	LYNDE BROOK RESERVOIR	2348000-01S	WORCESTER
					HOME FARM WELL	2348000-02G	WORCESTER
					HOLDEN #2 RESERVOIR	2348000-02S	WORCESTER
					HOLDEN #1 RESERVOIR	2348000-06S	WORCESTER
					KETTLE BROOK NO. 1	2348000-07S	WORCESTER
					KETTLE BROOK NO. 2	2348000-08S	WORCESTER
					KETTLE BROOK NO. 3	2348000-09S	WORCESTER
					KETTLE BROOK NO. 4	2348000-10S	WORCESTER

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WORCESTER SAND AND GRAVEL	N/A	9P21227102	N/A	1.06	POND	N/A	SUTTON
					WELL #1	N/A	SHREWSBURY
					WELL #2	N/A	SHREWSBURY
WYMAN GORDON COMPANY	21211001	N/A	0.35	N/A	HOVEY POND/QUINSIGAMOND	N/A	GRAFTON
					WELL #1	N/A	GRAFTON
					WELL #2	N/A	GRAFTON
					WELL #3A	N/A	GRAFTON
					WELL #4	N/A	GRAFTON

SUMMARY OF NPDES PERMITTING INFORMATION
BLACKSTONE RIVER BASIN

PERMITTEE Auburn Water District	NPDES # MAG64072	SEGMENT MA51-16
The Auburn Water District is authorized (MAG64072 issued in October 2005) to discharge treated filter backwash from the Auburn Well #6 water treatment facility to Dark Brook. The maximum daily flow was 0.09 MGD. The average monthly TRC was 0.13 mg/L and the maximum daily was 0.19 mg/L.		

PERMITTEE Auburn Water District	NPDES # MAG64004	SEGMENT MA51-16
The Auburn Water District Walsh Avenue Water Treatment Facility (MAG640004 issued in April 2001) discharges a maximum daily flow of 0.15 MGD of treated filter backwash from the water treatment plant to the Dark Brook. The monthly average TRC was 0.12 mg/L and the maximum daily was 0.15 mg/L.		

PERMITTEE City of Worcester	NPDES # MA0102997	SEGMENT MA51-08
The City of Worcester is authorized (MA0102997 issued in June 2005) to discharge from the Quinsigamond Avenue Combined Sewer Overflow Storage and Treatment Facility (QCSOSTF) a flow of 350 MGD daily maximum of partially treated CSO discharges via outfall #001 to the Mill Brook storm drain to the Blackstone River. The facility is required to conduct acute whole effluent toxicity tests (a monitor only, requirement) using *Ceriodaphnia dubia* as test species on a quarterly basis. The daily maximum Total Residual Chlorine (TRC) limit is 0.072 mg/L. Effluent Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between November 2005 and April 2007 ranged from 0.624 to 1.84 mg/L (n=5) and Total Residual Chlorine (TRC) concentrations were all $\leq$0.04 mg/L (n=6). Ambient River water hardness ranged from 20 to 40 mg/L (n=6).		

PERMITTEE Coz Plastics, Inc.	NPDES # MA0032549	SEGMENT MA51-04
Coz Plastics, Inc. was permitted (MA0032549) to discharge contact cooling water, non-contact cooling water and vacuum pump seal water via outfall #001 to the Blackstone River. EPA terminated the permit in November 2000 because the facility ceased operation.		

PERMITTEE Town of Douglas	NPDES # MA0101095	SEGMENT MA51-14
The Town of Douglas is authorized (MA0101095 issued in March 2007) to discharge from the Douglas Wastewater Treatment Facility (WWTF) a flow of 0.6 MGD (average monthly) of treated effluent via outfall #001 to the Mumford River. The facility is engaged in the collection and treatment of municipal wastewater. The discharge is from an advanced wastewater treatment plant. The plant was recently upgraded from a 0.18 MGD design flow to a 0.6 MGD design flow. The wastewater treatment units came on-line in December 2005 and the upgraded sludge treatment facilities came on-line in July 2005. The upgraded wastewater treatment consists of preliminary treatment, biological treatment via sequencing batch reactors, alum and polymer chemical addition, effluent filtration, and ultraviolet irradiation disinfection. The sludge is sent to the Woonsocket Regional Wastewater Treatment Plant in Rhode Island for incineration. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ effluent and CNOEC report only using *C. dubia* as a test species on a quarterly basis. The average monthly total phosphorus limit between 1 April and 31 October is 1.02 lbs/day and between 1 November and 31 March is 1.0 mg/L. Effluent Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between September 2000 and February 2008 ranged from 0.12 to 17 mg/L (n=22). All TRC concentrations have been reported as $\leq$ 0.05 mg/L (n=29). Ambient Water from the Mumford River was collected just downstream from the North Street Bridge in East Douglas for use as dilution water in the Douglas WWTF whole effluent toxicity tests. Mumford River water hardness ranged from 12 to 32 mg/L (n=32).		

PERMITTEE Eastern Point Condominium Trust	NPDES # MAG250018	SEGMENT MA51125
The Eastern Point Condominium Trust is authorized (MAG250018 issued in November 2002) to discharge non-contact cooling water to Lake Quinsigamond in Shrewsbury. The water is withdrawn from on-site wells. They report a maximum daily flow of 0.08 MGD. The average monthly temperature ranged from 47 to 63 °F and the maximum daily temperature was 64.2 °F.		

PERMITTEE Grafton Wastewater Treatment Plant (WWTP)	NPDES # MA0101311	SEGMENT MA51-04

The Grafton Wastewater Treatment Plant (WWTP) is authorized (MA0101311 issued in September 1999) to discharge from the facility in South Grafton a flow of 2.4 MGD (average monthly) of treated sanitary and industrial wastewater via outfall #001 to the Blackstone River. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ effluent and CNOEC report only using *Ceriodaphnia dubia* as a test species on a quarterly basis. The TRC limits between 1 April and 31 October are 0.21 and 0.36 mg/L (average monthly and daily maximum, respectively and the total phosphorus limit between 1 April 1 and 31 October is 1.0 mg/L average monthly.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between July 2000 and January 2008 ranged from <0.1 to 23 mg/L (n=30) while TRC concentrations between February 2000 and January 2008 ranged from <0.02 to 0.09 mg/L (n=32).

PERMITTEE Interface Fabrics Group	NPDES # MA0001538	SEGMENT MA51-14

The Interface Fabrics Group (formerly the Guilford of Maine Fishing Services, Inc.) is authorized (MA0001538 issued in December 1999) to discharge from their facility at 120 Gilboa Street in East Douglas a maximum daily flow of 1.25 MGD of treated process wastewater, cooling water, and boiler blowdown via outfall #003 to the Mumford River. The facility's whole effluent toxicity limits are LC_{50} report only and C-NOEC $\geq$ 10.8% effluent using *Ceriodaphnia dubia* as a test species six times per year. In July 2006 MassDEP was notified that all manufacturing operations had ceased at the facility and by 30 September 2006 the wastewater treatment plant was going to be shut down and the company intended to terminate their permit. Although the company is not in business, the permit has not been terminated.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between March 2000 and August 2006 ranged from <0.1 to 6.2 mg/L (n=38). No TRC was detected in the effluent (all results reported <0.02 mg/L (n=42).

Ambient

Mumford River water hardness ranged from 9.4 to 45.7 mg/L (n=38).

PERMITTEE Town of Hopedale	NPDES # MA0102202	SEGMENT MA51-10

The Town of Hopedale Board of Water & Sewer Commission is authorized (MA0102202 issued in September 1999) to discharge an average monthly flow of 0.588 MGD of treated sanitary and industrial wastewater from the Hopedale WWTP via outfall #001 to the Mill River. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ and C-NOEC $\geq$ 57% effluent using *Ceriodaphnia dubia* as a test species on a quarterly basis. The total phosphorus limit between 1 April and 31 October is 1.0 and 1.5 mg/L average monthly and daily maximum, respectively.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between February 2000 and March 2008 ranged from <0.1 to 19 mg/L (n=32) and all TRC measurements were reported as <0.05 mg/L (n=32).

PERMITTEE Lewcott Corporation	NPDES # MAG250969	SEGMENT MA51-03

The Lewcott Corporation is authorized (MAG250969 issued in June 2001) to discharge non-contact cooling water via Outfall #001 to the Blackstone River from their facility at 86 Providence Road, Millbury. Their individual permit MA0028592 was terminated when the facility was covered under the general permit. The maximum daily flow was 0.6 MGD. The average monthly temperature ranges from 46 to 66 °F and the maximum daily temperature was 69°F. The source of water for the facility is municipal and chlorine ranged from non-detect to 0.22 mg/L.

PERMITTEE Town of Millbury	NPDES # MA0100650	SEGMENT MA51-03

The Town of Millbury was authorized (MA0100650 issued in September 1999) to discharge from the Millbury Wastewater Treatment Plant (WWTP) a flow of 1.2 MGD average monthly of treated sanitary and industrial wastewater via outfall #001 to the Blackstone River. The facility's acute whole effluent toxicity limit was $LC_{50} \geq 100\%$ effluent using *Ceriodaphnia dubia* and *Pimephales promelas* as test species on a quarterly basis. The TRC limit between April 1 and October 31 was 0.58 and 1.0 mg/L average monthly and daily maximum, respectively. The facility tied into the Upper Blackstone WPAD in January 2005.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between February 2001 and December 2004 ranged from 9.84 mg/L to 20mg/L (n=9). With the exception of one measurement (0.09 mg/L), TRC concentrations were all $\leq$0.05 mg/L (n=15).

Ambient

Hardness of the Blackstone River collected at the Riverlin Street Bridge off Route 122A ranged from 56 to 90 mg/L (n=15).

PERMITTEE New England Plating Company	NPDES # MA0005088	SEGMENT MA51-08

The New England Plating Company was authorized (MA0005088 issued in February 2000) to discharge an average monthly flow of 0.2 MGD of treated wastewater via outfall # 001 to "Mill Brook". The facility's acute whole effluent toxicity limit was $LC_{50} \geq 100\%$ effluent using *Ceriodaphnia dubia* and *Pimephales promelas* as test species on a quarterly basis. The facility ceased operation and the permit was terminated by EPA in March 2002.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between February 2000 and July 2001 ranged from 1.24 to 6.42 mg/L (n=6). No TRC was detected <0.05 mg/L (n=6).

PERMITTEE Town of Northbridge	NPDES # MA0100722	SEGMENT Unnamed tributary to MA51-04

The Town of Northbridge is authorized (MA0100722 issued in September 2006 and modified in March 2008) to discharge the WWTP in Whitinsville an average monthly flow of 2.0 MGD of treated effluent via outfall #001 to an unnamed tributary of the Blackstone River. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ and C-NOEC $\geq$ 83% effluent using *Pimephales promelas* as test species on a quarterly basis. The average monthly total phosphorus limit between 1 April and 31 October is 0.2 mg/L and between 1 November and 31 March is 1.0 mg/L. A major upgrade to the facility including UV for disinfection was completed in December 2003.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between February 2000 and January 2008 ranged from 0.05 to 33 mg/L (n=34) and the TRC concentrations ranged from <0.02 to 0.13 mg/L (n=35) with four measurements <0.05 mg/L (two measurements of which were after UV was used for disinfection).

Ambient

Water from the unnamed tributary of the Blackstone River was collected upstream from the Northbridge WWTP discharge and used as a control in three of the four most recent modified acute and chronic whole effluent toxicity tests. Survival of *P. promelas* exposed (7-day) has ranged from 53 to 90% in three tests conducted between April 2007 and January 2008. Survival was <75% in the April 2007 test event.

River water hardness ranged from 16 to 38 mg/L (n=3).

PERMITTEE Riverdale Mills Corporation	NPDES # MAG250279	SEGMENT MA51-04

Riverdale Mills Corporation is authorized (MAG250279 issued November 1995) to discharge once-through non-contact cooling water from their facility at 130 Riverdale Street in Northbridge to the Blackstone River. The maximum daily flow was 0.19 MGD. The average monthly temperature ranged from 60 to 78°F and the maximum daily temperature was 78°F.

PERMITTEE Saint-Gobain Abrasives, Inc. and Saint-Gobain Ceramics & Plastics, Inc.	NPDES # MA0000817	SEGMENT Subwatershed of MA51-08

The Saint-Gobain Abrasives, Inc. and Saint-Gobain Ceramics & Plastics, Inc. (formerly the "Norton Company" is authorized (MA0000817 issued in December 2003) to discharge the following from the facility located at 1 New Bond Street in Worcester to Weasel Brook.

Outfall 001: 0.13 MGD (average monthly) of non-contact cooling water, steam condensate, and stormwater.

Outfall 003: 0.13 MGD (average monthly) of hydraulic, process equipment, and air conditioning non-contact cooling water, steam condensate, and stormwater, and stormwater via a coal pocket and a parking lot.

Outfall 004: 0.02 MGD (average monthly) of non-contact cooling water from air conditioning units.

The acute whole effluent toxicity limit for each outfall is $LC_{50} \geq 100\%$ effluent using *C. dubia* as test species once per year.

Effluent

Outfall 001: Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between July 2004 and July 2007 were all $\leq$ 0.25 mg/L (n=4) and TRC concentrations were all $\leq$0.02 mg/L (n=4).

Outfall 003: Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between July 2004 and July 2007 were all $\leq$ 1.2 mg/L (n=4) and TRC concentrations were all $\leq$0.02 mg/L (n=4).

Ambient

Survival of *C. dubia* exposed (48-hours) to water collected from an unnamed tributary to Weasel Brook was $\geq$ 90% (n=5).

River water hardness ranged from 82 to 330 mg/L in the five tests conducted between July 2004 and July 2007 for both outfalls 001 and 003. It should also be noted that specific conductivity in the river water samples was very high (1007 to 4546 μmhos/cm).

PERMITTEE True Plastics, Inc.	NPDES # MAG250962	SEGMENT MA51-02

True Plastics, Inc. is authorized (MAG250962 issued in February 2005) to discharge non-contact cooling water to the Middle River from their facility at 70 Fremont Street in Worcester. The facility installed a closed-loop cooling system in December 2007 and has requested to have their permit terminated.

PERMITTEE United County Industries	NPDES # MAG250014	SEGMENT MA51-03

United County Industries is authorized (MAG250014 issued in November 2001) to discharge non-contact cooling water to the Blackstone River from their facility at 32 Howe Avenue in Millbury. The individual permit MA0034665 was terminated when they were covered under the general permit. The maximum daily flow was 0.029 MGD. The average monthly temperature ranged from 63 to 81°F and the maximum daily temperature was 88°F. The source of water for the facility is a private well.

PERMITTEE Town of Upton	NPDES # MA0100196	SEGMENT Unnamed tributary to MA51-12

The Town of Upton is authorized (MA0100196 issued in March 2006) to discharge from the Upton Wastewater Treatment Facility an average monthly flow of 0.4 MGD of treated municipal wastewater via outfall #001 to an unnamed tributary of the West River. The advanced WWTF treatment process consists of aeration, secondary settling, phosphorus removal, sand filtration, chlorine contact and sodium bisulfite dechlorination. The facility was upgraded from a 0.3 to a 0.4 MGD facility since the 2002 permit. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ and C-NOEC $\geq$ 98% effluent using both *Ceriodaphnia dubia* and *Pimephales promelas* as test species on a quarterly basis. The TRC limits between 1 April and 31 October is 0.0112 and 0.0194 mg/L, average monthly and daily maximum, respectively. The average monthly total phosphorus limit between 1 April and 31 October is 0.2 mg/L and between 1 November and 31 March is 1.0 mg/L.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between October 2002 and January 2008 ranged from <0.1 to 8.4 mg/L and only one detectable concentration of TRC (0.4 mg/L in April 2003; all the rest of the measurements <0.05 mg/L) were reported (n=25).

PERMITTEE Upper Blackstone Water Pollution Abatement District (UBWPAD)	NPDES # MA0102369	SEGMENT MA51-03

The Upper Blackstone Water Pollution Abatement District (UBWPAD) is authorized (MA0102369 issued in September 1999 and modified in December 2001) to discharge from the UBWPAD a flow of 56 MGD (average monthly) of treated sanitary and industrial wastewater via outfall #001 to the Blackstone River. A new draft permit was developed for this facility but a new final permit has not been issued.

Facility description: The UBWPAD wastewater treatment plant includes the following treatment units: mechanical bar racks, grit chambers, primary clarifiers, activated sludge aeration tanks, secondary clarifiers, chlorine disinfection basins, dechlorination facilities, and chemical addition facilities for total phosphorus removal. Sludge is thickened, dewatered and incinerated in a multiple hearth incinerator. The District accepts sludge from many communities, which is dewatered and incinerated in the multiple hearth incinerator. The District also accepts septage from many communities, which is stored in a septage holding facility and then introduced into the headworks of the treatment facility. Effluent from the treatment plant is discharged though outfall 001, to a discharge channel to the Blackstone River. The UBWPAD is in the process of a major upgrade of the treatment facility. The upgrade is being completed in two phases. Phase I addresses peak flow management, headworks, primary treatment, disinfection, odor control, hazardous waste remediation, and air pollution control improvements. The Phase I upgrade will increase the ability of UBWPAD to accept flow from the CSO treatment facility in Worcester. Phase II upgrades include improvements to the advanced treatment facilities plus additional hazardous waste remediation. Both phases are scheduled to be complete by August 5, 2009. The preliminary and primary treatment facilities are being upgraded to accept a peak hourly flow of 160 MGD, thereby providing primary treatment to flows that currently are discharged with minimal treatment at the CSO facility. The advanced treatment process is being designed to accept a peak hour flow of 120 MGD and a maximum daily flow of 80 MGD. Discharges in excess of the advanced treatment process capacity will receive primary treatment and disinfection and be discharged through outfall 001A, which will be located adjacent to outfall 001.

The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ and C-NOEC $\geq$ 90% effluent using *C. dubia* and *Pimephales promelas* as test species on a quarterly basis. The average monthly TRC and total phosphorus limits between 1 April and 31 October is 0.012 mg/L (0.021 mg/L daily maximum) and 350 lbs/day, respectively.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between January 2000 and January 2008 ranged from 0.024 to 10.5 mg/L (n=31). With the exception of five measurements in October 2002, 2003, and 2004 and January and April 2004 when TRC concentrations ranged from 0.13 to 0.66 mg/L, no detectable concentrations of TRC were reported (n=31).

Ambient

Blackstone River water hardness ranged from 52 to 122 mg/L (n=34).

PERMITTEE Town of Uxbridge	NPDES # MA0102440	SEGMENT MA51-05

The Town of Uxbridge is authorized (MA0102440 issued in September 1999) to discharge from the Uxbridge Sewer Commission a flow of 2.5 MGD (average monthly) of treated sanitary and industrial wastewater via outfall #001 to the Blackstone River. The facility's whole effluent toxicity limits are $LC_{50} \geq 100\%$ effluent using *Ceriodaphnia dubia* as test species two times per year. The TRC limit between 1 April and 31 October is 0.24 and 0.42 mg/L (average monthly and daily maximum, respectively. The average monthly total phosphorus limit between 1 April and 31 October is 1.0 mg/L.

Effluent

Ammonia-nitrogen concentrations reported in the whole effluent toxicity reports between April 2000 and December 2007 ranged from <0.075 to 15.8 mg/L (n=15) and Total Residual Chlorine (TRC) concentrations were all ≤0.07 mg/L with the exception of May 2007 when the TRC was reported at 0.5 mg/L (n=16).

Ambient

River water hardness was 48 mg/L in May 2007.

PERMITTEE Worcester Department of Public Works	NPDES # MA0G640052	SEGMENT MA51064

The Worcester Department of Public Works is authorized (MAG640052 issued in May 2001) to discharge treated filter backwash from the Worcester Water Filtration Plant via outfall #001 to Holden Reservoir #2. The individual permit MA0032093 was terminated when the facility was covered under the general permit. The maximum daily flow ranged from 0.18 to 0.60 MGD. The average monthly TRC was 0.071 mg/L and the maximum daily concentration was 0.32 mg/L. Alum is used as a coagulant aid; the maximum daily concentration ranged from 0.78 to 5.2 mg/L. The average monthly TRC was 0.071 mg/L and the maximum daily concentration was 0.32 mg/L.

PERMITTEE Wyman Gordon Company, Grafton	NPDES # MA0004341	SEGMENT Tributaries to MA51-09

The Wyman Gordon Company is authorized (MA0004341 issued in September 2006 and modified in February 2008) to discharge from five outfalls at their facility located at 244 Worcester Street in North Grafton. Outfall 010 is comprised of various process wastewaters, non-contact cooling water and storm water which are discharged to the Quinsigamond River if there is an overflow from the Runoff Management Facility (RMF). If there is a hydraulic overflow of the Runoff Management Facility (RMF) in excess of 1.4 cfs this is discharged via outfall #001 to wetlands adjacent to "East Brook" and the Quinsigamond River. The facility is also authorized to discharge storm water via Outfalls #007 and #008 to "Bonny Brook", and via Outfall #009 to wetlands adjacent to "East Brook" and the Quinsigamond River. The facility's acute whole effluent toxicity limits are $LC_{50} \geq$ 100% effluent using *Ceriodaphnia dubia* as test species for both outfalls #010 and #001.

Effluent

Acute whole effluent toxicity tests were conducted on the Wyman Gordon Company RMF discharge from outfall #010 between May 2000 and February 2008. The LC_{50}'s for *C. dubia* ranged from <6.25 to >100% effluent (n=12), and four test events indicated acute whole effluent toxicity (May 2000, January and April 2001, and February 2008 with LC_{50}s = 85.6, 78.4, <6.25, and 7.8% effluent, respectively). The LC_{50}s for *P. promelas* (n=5) were all ≥100% effluent with the exception of April 2001 (LC_{50} =64.4% effluent).

All TRC concentrations reported in the whole effluent toxicity reports between May 2000 and February 2008 were <0.05 mg/L with the exception of January 2001 (1.47 mg/L) (n=12).

Effluent

Acute whole effluent toxicity tests were conducted on stormwater discharged via Outfall #008 from the Wyman Gordon Company facility in North Grafton between May 2000 and April 2007. The LC_{50}'s for *C. dubia* ranged from 68.3 to >100% effluent (n=7), and two test events indicated acute whole effluent toxicity (April 2001 and April 2005 with LC_{50}s = 91.7 and 68.3% effluent, respectively). The LC_{50}s for *P. promelas* (n=6) were all ≥100% effluent with the exception of the April 2005 (LC_{50} = 93.3% effluent).

All TRC concentrations reported in the whole effluent toxicity reports between May 2000 and April 2007 were <0.02 mg/L (n=7).

PERMITTEE Wyman Gordon Company	NPDES # MA0001121	SEGMENT Tributary to MA51-09

Wyman Gordon Company in North Grafton is authorized MA0001121 issued December 2002) to discharge treated stormwater effluent from outfalls #002 and #003 to an unnamed tributary to Bonny Brook and to an unnamed pond to an unnamed to Bonny Brook, respectively, from their facility located at Route 122 Millbury, MA. The facility's whole effluent toxicity limits are $LC_{50} \geq$ 100% effluent using *Ceriodaphnia dubia* and *Pimephales promelas* as test species on a quarterly basis.

Effluent

Outfall #002: Acute whole effluent toxicity tests were conducted on the Wyman Gordon Company treated effluent from outfall #002. Between July 2003 and January 2008 tests were conducted using *C. dubia* and *P. promelas*. *C. dubia* has consistently been the most sensitive test species. The LC_{50}'s for *C. dubia* ranged from 35.4 to ≥100% effluent (n=15), and four test events indicated acute whole effluent toxicity (July 2003, July 2004, April 2006, and July 2007 with LC_{50}s = 68.3, 70.7, 70.7, and 35.4% effluent, respectively). With the exception of one test event (July 2003 with an LC_{50}=83% effluent), no acute whole effluent toxicity to *P. promelas* was detected (all LC_{50}s ≥100% effluent).

TRC concentrations reported in the acute whole effluent toxicity reports for Outfall #002 between July 2003 and January 2008 were all <0.05 mg/L (n=15).

Outfall #003:

Three acute whole effluent toxicity tests were conducted on the Wyman Gordon Company treated effluent from outfall #003 between April 2003 and October 2003 using both *C. dubia* and *P. promelas* as test species. With the exception of the April 2003 test using *C. dubia* which was not valid, no acute toxicity was detected by either test species (n=3 test events (i.e., the LC_{50}'s were all ≥100% effluent).

TRC concentrations reported in the acute whole effluent toxicity reports for Outfall #003 between July 2003 and October 2003 were all <0.05 mg/L (n=3).

Ambient

Water upstream from Outfall #002 in an unnamed tributary to "Bonny Brook" was collected for use as dilution water in the Wyman Gordon Company acute whole effluent toxicity tests. Between October 2003 and January 2008 survival of both *C. dubia* and *P. promelas* exposed (48 hours) to the unnamed tributary water was ≥ 95% (n=14 test events). River water hardness ranged from 32 to 112 mg/L (n=14).

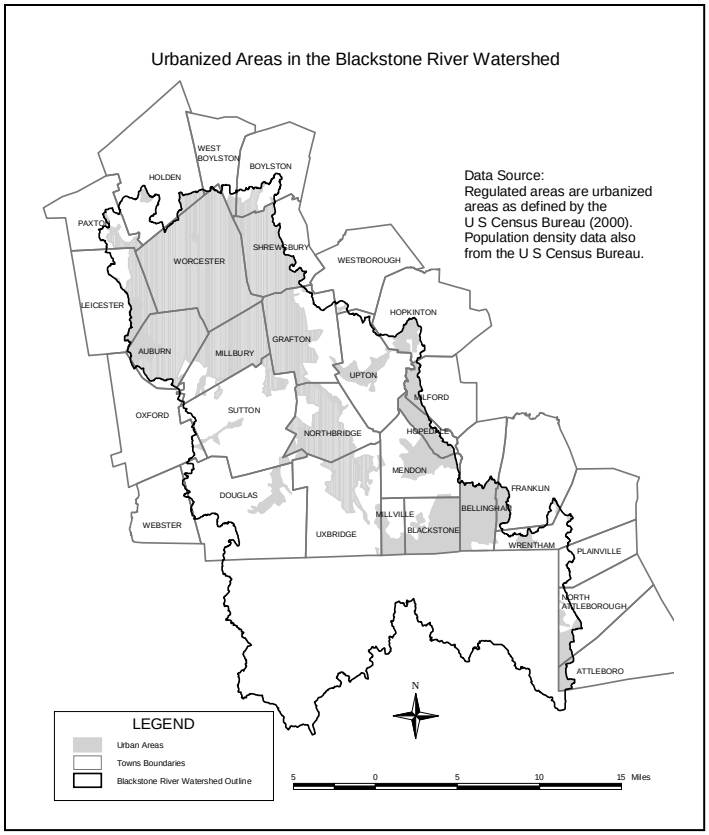
STORMWATER

The NPDES Phase I Stormwater Program, **(EPA HQ)** in place since 1990, regulates cities and counties with populations of 100,000 that operate a municipal separate storm sewer system (MS4), specific industrial operations (as defined at 40 CFR 122.26(b)(14) EXIT Disclaimer), and construction activities that disturb 5 or more acres of land. The City of Worcester's NPDES Phase I Stormwater Program permit is summarized below.

PERMITTEE City of Worcester	NPDES # MAS010002	SEGMENTS Multiple

The City of Worcester is authorized (MAS010002 issued in September 1998) to discharge stormwater (commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits and in compliance with regulations) all new or existing separate storm sewer outfalls (93 major outfalls and 170 minor outfalls) to receiving waters in the Blackstone River Basin. The permit required the development, implementation, and revision as necessary of a storm water pollution prevention and management program designed to reduce, to the maximum extent practicable, the discharge of pollutants from the Municipal Separate Storm Sewer System (MS4). The City has filed annual reports, inspected all outfalls and done some dry/wet weather sampling. A new draft permit was released in June 2008. Following the close of several comment periods, EPA still has to issue a final permit decision (hopefully late 2009/early 2010). It should be noted that the stormwater permit does not cover the part of the City within the CSO drainage area. Discharges from the combined sewer system area flow to the Upper Blackstone Water Pollution Abatement District or the Quinsigamond Avenue CSO Storage and Treatment Facility. Discharges from this CSO facility are permitted under the Cit's NPDES Permit MA0102997.

The NPDES Phase II General Permit program requires NPDES permit coverage for stormwater discharges from small municipal separate storm sewer systems (MS4s), and construction activity disturbing one acre or more of land in a mapped "urbanized area" defined and delineated by the US Bureau of Census in 2000 http://www.epa.gov/npdes/pubs/fact2-2.pdf. Large and medium MS4s (populations over 100,000) were permitted during Phase I of the NPDES stormwater program. Under EPA's Phase II program, the definition of "municipal" includes Massachusetts communities, U.S. military installations, state or federal owned facilities such as hospitals, prison complexes, state colleges or universities and state highways. An MS4 is a system that: discharges at one or more a point sources; is a separate storm sewer system (not designed to carry combined stormwater and sanitary waste water); is operated by a public body; discharges to the Waters of the United States or to another MS4; and, is located in an "Urbanized Area". The NPDES Phase II General Permit requires operators of regulated MS4s to develop and implement a stormwater management program that prevents harmful pollutants from being washed or dumped directly into the storm sewer system which is subsequently discharged into local waterbodies. The NPDES Stormwater Phase II General Permit requires operators of regulated small municipal separate storm sewer systems (MS4s) to develop a stormwater management program that prevents harmful pollutants from being washed or dumped directly into the storm sewer system, and then discharged into local waterbodies. Certain Massachusetts communities were automatically designated (either in full or part) by the Phase II rule based on the urbanized area delineations from the 2000 U.S. Census.



As a result of the census mapping, all 30 communities (excluding Worcester) in the Blackstone River Watershed were located either totally or partially in the regulated Urbanized Area (see below Table H2). Municipalities that are totally regulated must implement the requirements of the Phase II permit in the entire town, while communities that are partially regulated need to comply with the Phase II permit only in the mapped Urbanized Areas. All Blackstone drainage area communities applied to EPA and MassDEP for coverage under the Phase II stormwater general permit, issued on 1 May 2003. EPA issued stormwater general permits to all 30 Blackstone River Watershed municipalities after administrative review and, in coordination with MassDEP, and was to complete a thorough review of the communities' stormwater management program during the five-year permit term. Phase II stormwater general permits expired on 1 May 2008 but are currently administratively continued since a new general permit has not yet been authorized. For detailed community maps see http://www.epa.gov/region01/npdes/stormwater/ma.html.

Table H2. NPDES Phase II stormwater permit information for the Blackstone River Watershed Communities.

Community	Permit #	Permit Issued	Mapped Regulatory area in community
Attleboro	MAR041087	8/28/2003	Total
Auburn	MAR041088	8/28/2003	Partial
Bellingham	MAR041091	8/27/2003	Partial
Blackstone	MAR041093	10/28/2003	Partial
Boylston	MAR041095	5/13/2004	Partial
Douglas	MAR041106	9/8/2003	Partial
Franklin	MAR041117	9/10/2003	Partial
Grafton	MAR041193	10/28/2003	Partial
Holden	MAR041121	9/18/2003	Partial
Hopedale	MAR041123	9/12/2003	Partial
Hopkinton	MAR041124	12/10/2003	Partial
Leicester	MAR041202	10/1/2003	Partial
Milford	MAR041135	10/1/2003	Partial
Millbury	MAR041136	9/29/2003	Partial
Millville	MAR041138	9/18/2003	Partial
Northbridge	MAR041144	9/22/2003	Partial
Mendon	MAR041133	9/16/2003	Partial
North Attleborough	MAR041142	9/5/2003	Partial
Oxford	MAR041147	9/22/2003	Partial
Paxton	MAR041148	9/29/2003	Partial
Plainville	MAR041149	2/5/2004	Partial
Shrewsbury	MAR041158	9/25/2003	Total
Sutton	MAR041241	1/30/2004	Partial
Upton	MAR041165	9/25/2003	Partial
Uxbridge	MAR041166	9/17/2003	Partial
Webster	MAR041170	10/28/2003	Partial
Westborough	MAR041173	10/8/2003	Partial
West Boylston	MAR041171	10/21/2003	Partial
Wrentham	MAR041175	9/17/2003	Partial

Information for other general NPDES permittees are available online at:
http://cfpub.epa.gov/npdes/stormwater/noi/noisearch.cfm.