

March 16, 2012

US Environmental Protection Agency – New England  
NCCW GP Processing  
Municipal Assistance Unit (CMU)  
One Congress Street, Suite 1100  
Boston, Massachusetts 02114-2023

*NCC'd  
3/27/12  
OEP 64*

Re: Norwood Theater Geothermal Heating and Cooling System (Bleed Water Discharge)  
109 Central Street, Norwood, Massachusetts  
Noncontact Cooling Water Discharge General Permit Application  
Under Massachusetts General Permit No. MAG250000

To Whom It May Concern:

**1. Introduction**

This National Pollutant Discharge Elimination System (NPDES) Noncontact Cooling Water General Permit (NCCWP) application was prepared by SAK Environmental, LLC (SAK) for Tribeca Builders Inc. who is managing the full renovation of the Norwood Theater (Theater) (See **Figure 1- Site Location Map**). The Theater is a 14,000 square foot facility in downtown Norwood, MA. The renovation includes the installation of a geothermal heating and cooling system having four (4), 1,500 deep standing column wells as the ground couple.

WellSpring Geothermal completed a preliminary design of the system which includes a design circulation flow rate of about 300 gallons per minute (gpm) for the geothermal system which will provide heating and cooling to the Theater. A periodic bleed (ie. discharge) of circulated water at approximately 30 gpm is anticipated during times when the system is operating at peak demand (mid-winter and mid-summer). It is estimated that the bleed (ie. discharge) would occur for approximately 8 hours/day on approximately 30 days per year.

This application is to permit the discharge of the bleed water to a surface water body via the municipal storm drainage system. Discharge on-site is not possible due to space limitations and where the Theater already manages excessive groundwater via a sump pump. Discharge via the municipal storm drain was identified as a viable option. Through consultation with the Town of Norwood's Engineering office it was determined that the municipal storm drain system discharges to Meadow Brook, and ultimately the Neponset River. Project information listed below:

Permit Applicant: Tribeca Builders Inc.  
21 Drydock Avenue  
Boston, MA  
E.J. Lanni, 617-531-1689

Permit Preparer: SAK Environmental LLC  
231 Sutton Street, Suite 2G  
North Andover, MA  
Mark Grady, 978-688-7804

Project Owner: Story Board LLC  
109 Central Street  
Norwood, MA  
Susan Lewis, 781-255-6980

## **2. Notice of Intent (NOI) Form for Noncontact Cooling Water General Permit**

Completed form is attached in **Appendix A**.

## **3. Submittal Time Frames**

New discharges are required to submit the NOI to EPA and the respective State (Massachusetts) at least 60-days prior (postmark date) to the commencement of discharge.

## **4. Special Requirements for Groundwater Sources**

Since groundwater is used in the geothermal wells, and will be discharged as described previously it is required that a representative sample of the NCCW effluent be taken. The effluent sample was taken on February 1, 2012 during the pumping of the wells. The sample was taken prior to the commingling of the effluent water with other sources. The sample was sent to a State Certified Laboratory, Contest Labs of East Longmeadow, MA, and analyzed for Antimony, Arsenic, Chromium (Total), Chromium (VI), Copper, Chloride, Iron, Mercury, Nickel, Silver, and Zinc. A surface water sample was taken from Meadow Brook upstream of the discharge location to be analyzed for Hardness.

### **4.1. Laboratory Results**

Groundwater from the geothermal wells was sampled and analyzed in accordance with Section 5.4 of the General Permit. See **Table 1** for a summary of Laboratory Results. Laboratory Data is available in **Appendix B**. All metals compounds analyzed were not detected except for Iron at 0.12 mg/L. The pH of the groundwater was 7.2 standard units and the Chloride result was 610 mg/L. Additionally, hardness of the receiving water was also analyzed and reported to be 47 mg/L.

### **4.2. Temperature Change Calculation**

Temperature adjustment for receiving water was calculated by setting the heat load discharge from the "plant" (geothermal well system) equal to the heat load accepted by the river.

$$Q_{\text{plant}} = C_p m_p \Delta T_p$$

$$Q_{\text{river}} = C_p m_r \Delta T_r$$

$$C_p m_p \Delta T_p = C_p m_r \Delta T_r$$

$$\Delta T_r = m_p / m_r \times \Delta T_p$$

$Q_{\text{plant/river}}$  = heat load discharge from plant/river (btu)

$\Delta T_r$  = change in river temperature, °F

$\Delta T_p$  = change in temperature, effluent - influent, °F

$C_p$  = heat capacity of water = 1.0 °F x btu/lb

$m_p$  = mass of effluent, lbs (gal. or cubic feet per second if volume is used)

$m_r$  = mass of river, lbs (gal. or cubic feet per second if volume is used)

$$\Delta T_r = \frac{m_p}{m_r} \times \Delta T_p$$

Where:  $m_p = 0.06684 \text{ cfs}$  (30 gpm)  
 $m_r = 4.5 \text{ cfs}$   
 $\Delta T_p = +/- 30 \text{ °F}$

$$\Delta T_r = \frac{0.06684 \text{ cfs}}{4.5 \text{ cfs}} \times 30 \text{ °F} = +/- 0.446$$

Solving for the change in river temperature yields a temperature change of +/- 0.446°F. This was achieved by converting the 30 gpm bleed system discharge (mass of effluent) to 0.06684 cubic feet per second (cfs). Additionally, the change in temperature (effluent – influent) will not exceed a 30°F difference, thus making the change in temperature negligible. The mass of the river was obtained from the USGS Stream Stats data collector, and found to be 4.5 cfs (7 Day 10 year Low Flow). This information allowed for the determination of a temperature change of +/- 0.446°F, approximately an order of magnitude less than the 3.0°F differential allowed for Class B cold waters. Calculations and stream flow data are enclosed.

#### **4.3. Dilution Factor Calculation**

A Dilution Factor (DF) was calculated (Attachment B) in order to identify the limits for total metals. The DF calculation was performed in accordance with the procedure contained in Attachment B, "Calculation of Dilution Factor for Massachusetts." The purpose of the DF calculation is to establish the Total Recoverable Limits for metals, taking into consideration the anticipated dilution of the detected analytes upon discharge of effluent to the discharge waters.

$$\text{Dilution Factor} = \frac{Q_R + (Q_P * 1.55)}{Q_P * 1.55}$$

$Q_p$  = Plants maximum design flow, in million gallons per day (mgd)  
 $Q_R$  = Estimated 7Q10 low flow for receiving water at the plants outfall  
(cfs)

1.55 = Factor to convert mgd to cfs

Where:  $Q_p$  = 0.0432 mgd

$Q_R$  = 4.5 cfs

$$\text{Dilution Factor} = \frac{4.5 + ((0.0432) * 1.55)}{(0.0432) * 1.55} = 68.20$$

Notes:

cfs = cubic feet per second

mgd = million gallons per day

## **5. Areas of Critical Environmental Concern**

SAK reviewed the Massachusetts Department of Environmental Protection (MADEP) Priority Resource Map to locate any areas of critical environmental concern close in proximity to the Theatre (See **Figure 2 – Priority Resource Map**). Protected open space areas are located approximately ½ mile to the East, West, and South of the Theatre. The area surrounding portions of Meadow Brook are in a floodplain, however, the bleed water discharge is expected to occur only seasonally when stormwater, snowmelt and flooding are of minimal concern (Jan/Feb, July/Aug). The discharge associated with this permit is not expected to affect any areas of critical concern.

## **6. Endangered Species Eligibility Act**

SAK has consulted with the US Fish and Wildlife Service (USFWS) website and determined that the planned Theater discharge does not contain federally listed endangered and threatened species. According to the USFWS, no endangered or threatened species are present in Norfolk County. See **Appendix C** for a list of all federally listed endangered and threatened species in Massachusetts and letter from the USFWS.

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) website was consulted. Rare species have been identified in the Town of Norwood (see **Appendix C**), but discharge does not occur in an area identified as an NHESP estimated rare wetland habitat area, certified vernal pool, or ACEC on the Priority Resource map (see **Figure 2**).

## **7. National Historic Preservation Act**

SAK has reviewed all the listed, or eligible to be listed, historic properties or places listed on the National Register of Historic Places for Norfolk County, Massachusetts. The search focused on

all listed properties in Norwood, Massachusetts. The nearest listed historic site to the Theater is Norwood Memorial Municipal Building at 566 Washington Street in Norwood, Massachusetts. The permit complies with Scenario #2 listed in Appendix 3 of the NPDES NCCW General Permit "(2) If historic properties are identified but it is determined that they will not be affected by the discharges, the applicant has met the NHPA eligibility criteria for coverage under this permit". The discharge allowed under this permit would not adversely affect the property. The National Register did not list Historic Districts, Vacant, or not-in-use properties or places in Norwood, Massachusetts. A copy of all listed Historical properties in Norwood, Massachusetts is attached in **Appendix D**.

## **8. Reporting**

Discharge of the NCCW is designed to be done during peak thermal demand times (mid-summer and mid-winter). For this reason discharge will be intermittent. Annual discharge reports are required to maintain coverage under this permit and reports will be submitted by the 15<sup>th</sup> of January. When discharge does commence, the owner (permittee) will submit written notification of discharge to the EPA within five (5) days of the start of discharge. During times the discharge of the NCCW is occurring, on a quarterly basis, monitoring results obtained during the previous three months will be summarized for each month and reported on separate Discharge Monitoring Report forms (DMRs). The DMRs will be postmarked by the 15<sup>th</sup> of January, April, July, and October. The first report may include less than three months of data. Signed and dated original DMRs, and accompanying reports must be submitted to EPA at:

U.S. Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

Copies of the initial permit filing (and applicable fee) and monitoring reports will be submitted to:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street, Second Floor  
Worcester, Massachusetts 01608

An example DMR is included in **Appendix E**.

## **9. Administration**

### **9.1. Notice of Termination**

A Notice of Termination (NOT) of Discharge will be submitted to the aforementioned agencies. The NOT will include the required information outlined in Appendix 4, Section II of the NPDES NCCW General Permit. The NOT will be submitted within 30 days of the cessation of discharge. All records will be kept for a minimum of three (3) years as required in the General Permit.

EPA NCCW General Permit

March 16, 2012

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**9.2. Continuation of General Permit after its Expiration**

If EPA issues a new General Permit in the future, the owner will submit a new NOI at least 60 days prior to the expiration date of the expiring General Permit.

Do not hesitate to contact Mark Grady at 978-688-7804 x114.

Sincerely,

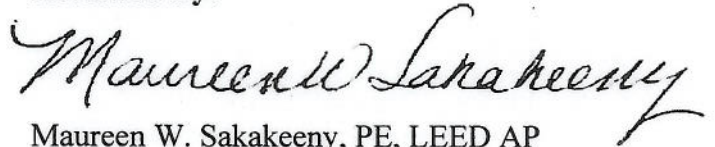
**SAK Environmental LLC**

**Prepared By:**



Mark P. Grady, EIT  
Environmental Engineer

**Reviewed By:**



Maureen W. Sakakeeny, PE, LEED AP  
Principal

Cc: MA DEP, Division of Watershed Management (Worcester, MA)  
E.J. Lanni, Rich Daly (Tribeca Builders)  
Timothy Roos (WellSpring Geothermal)

Enclosures:

Figure 1 – Site Location Map

Figure 2 – Priority Resource Map

Figure 3 – Aerial Map

Table 1 – Laboratory Data

Calculations

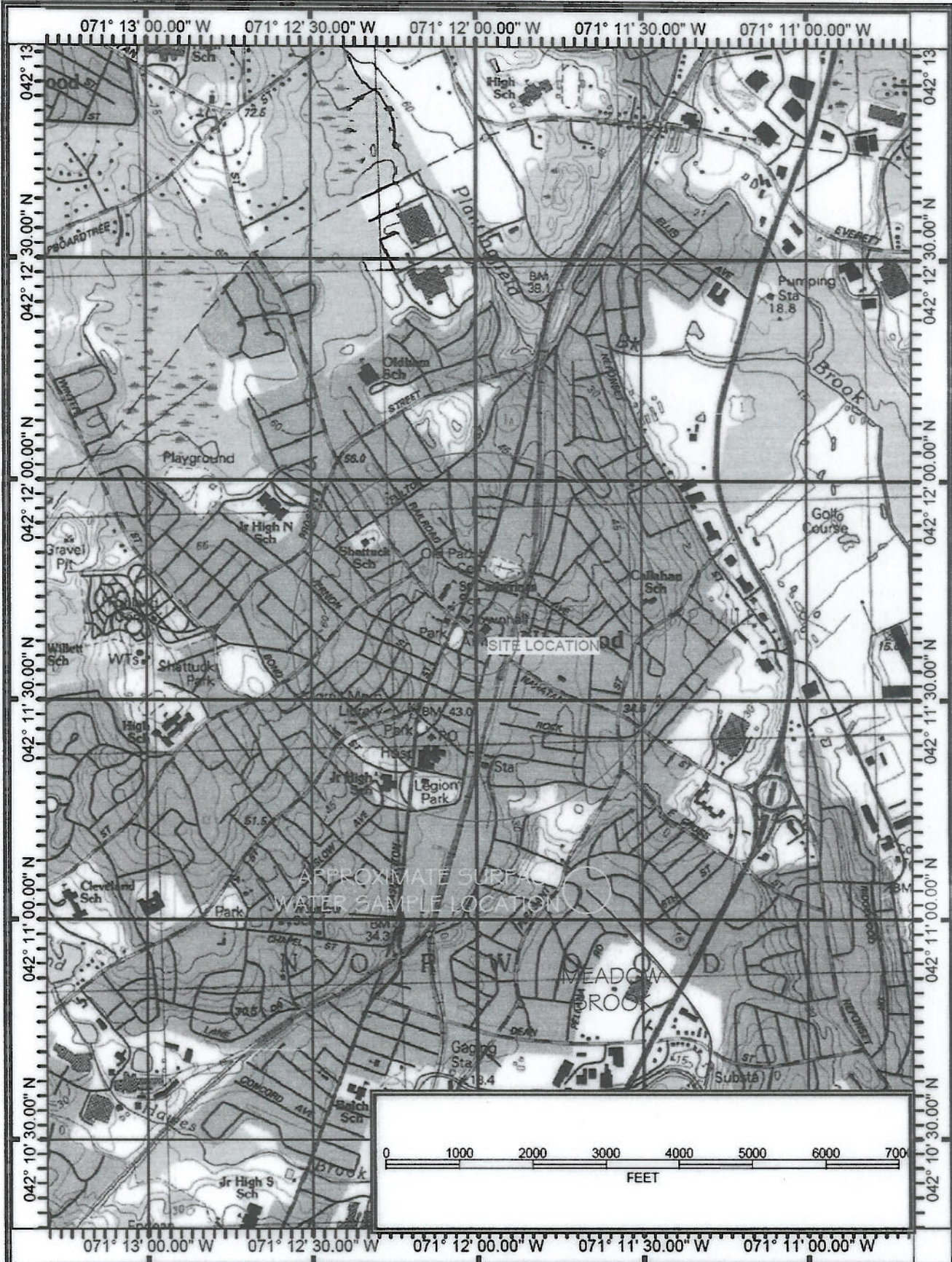
Appendix A – Notice of Intent

Appendix B – Laboratory Data

Appendix C – Endangered Species

Appendix D – Historical Data

Appendix E – Example Discharge Monitoring Report



**SAK Environmental**  
 231 SUTTON STREET SUITE 2G  
 NORTH ANDOVER, MA 01845  
 TELEPHONE: (978) 688 - 7804  
 FAX: (978) 688 - 7801  
 www.SAKEnvironmental.com

FIGURE 1 - SITE LOCATION MAP  
 NORWOOD THEATRE  
 109 CENTRAL STREET  
 NORWOOD, MA 02062

PROJECT NO. 11.20.00  
 CLIENT:  
 NORWOOD THEATRE  
 SCALE:  
 SEE MAP

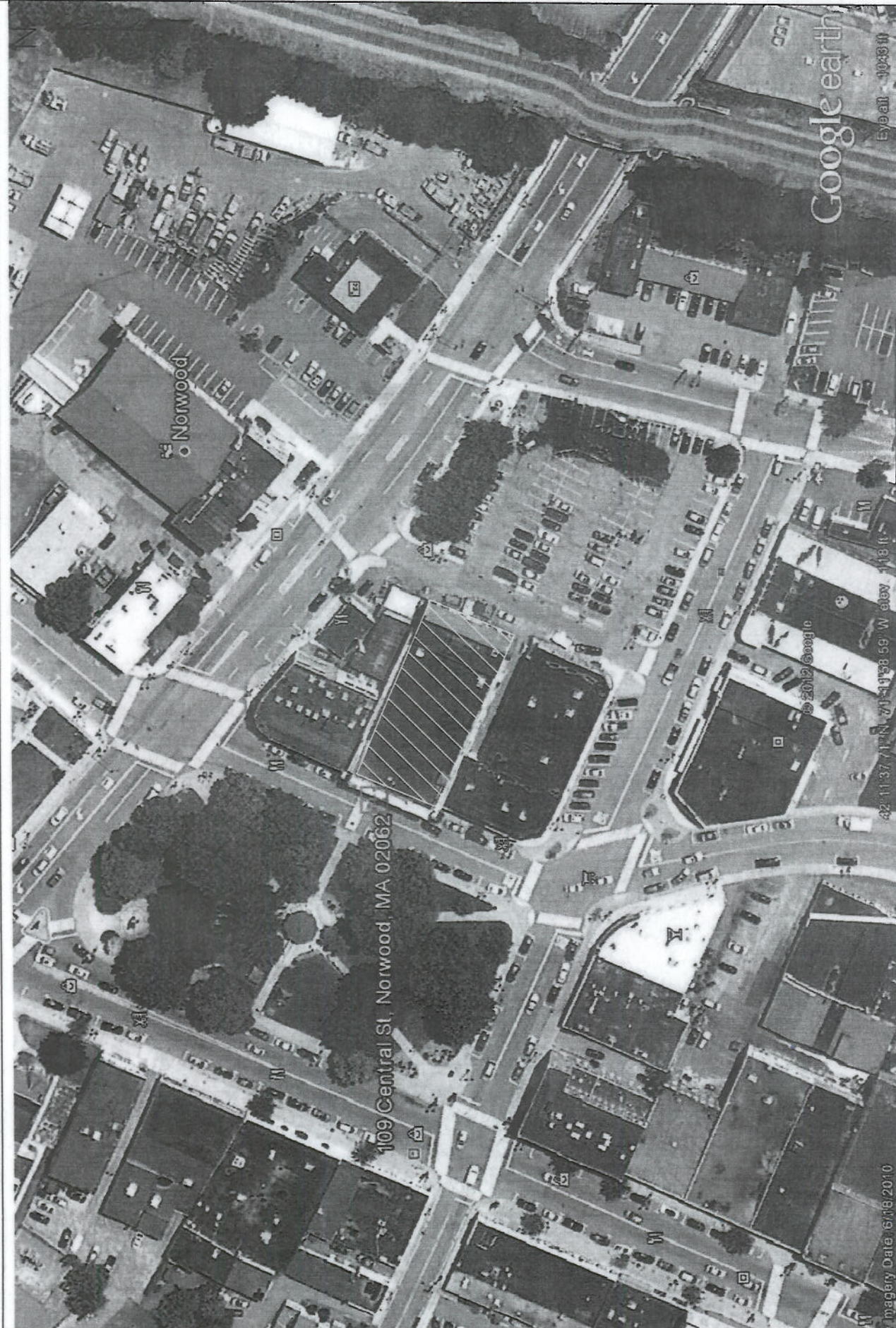
DATE: OCTOBER 4, 2011  
 DRAWN BY:  
 SJD  
 CHECKED BY:  
 SAS



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail	PWS Protection Areas: Zone II, MPA, Zone A		
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct	Hydrography: Open Water, PWS Reservoir, Tidal Flat		
Basins: Major, Sub, Streams, Perennial, Intermittent, Man Made Shore, Dam	Wetlands: Freshwater, Saltwater, Cranberry Bog		
Aquifers: Medium Yield, High Yield, EPA Sole Source	FEMA 100yr Floodplain, Protected Open Space, ACEC		
Non Potential Drinking Water Source Area: Medium, High (Yield)	NHESP: Est Rare Wetland Habitat, Certified Vernal Pool		
	DEP Permitted Solid Waste Landfill		

<b>SAK Environmental</b> 231 SUTTON STREET, SUITE 2G NORTH ANDOVER, MA 01845 TELEPHONE: (978) 688 - 7804 FAX: (978) 688 - 7801 www.SAKEnvironmental.com	<b>FIGURE 2 - PRIORITY RESOURCE MAP</b>  NORWOOD THEATRE REONAVION NORWOOD, MASSACHUSETTS	PROJECT NO. 11.20.00	DATE: OCTOBER 14, 2011
		CLIENT: NORWOOD THEATRE	DRAWN BY: SJD
		SCALE: SHOWN ON DRAWING	CHECKED BY: SAS





Magery Date: 6/18/2010

**SAK Environmental**  
 231 SUTTON STREET, SUITE 2G  
 NORTH ANDOVER, MA 01845  
 TELEPHONE: (978) 688 - 7804  
 FAX: (978) 688 - 7801  
[www.SAKEnvironmental.com](http://www.SAKEnvironmental.com)

FIGURE 3 - AERIAL MAP  
 NORWOOD THEATRE  
 109 CENTRAL STREET  
 NORWOOD, MA 02062

PROJECT NO. 11.20.00  
 CLIENT:  
 NORWOOD THEATRE  
 SCALE:  
 SEE MAP

DATE: OCTOBER 4, 2011  
 DRAWN BY:  
 SJD  
 CHECKED BY:  
 SAK

Google earth  
 Eye alt - 1023 ft

Engineering Calculations for the ...

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

The ... design flow in ...  
... for receiving water ...  
... factor to convert ...

$$1.05 \times 1.05 = 1.1025$$

$$1.1025 \times 1.05 = 1.1576$$

$$\frac{1.1576 \times (0.0001) \times 1.25}{(0.0001) \times 1.25} = 1.1576$$

### CALCULATIONS

...  
...

...  
...

## Calculations

### Dilution Factor Calculations for Massachusetts

$$\text{Dilution Factor} = \frac{Q_R + (Q_p * 1.55)}{Q_p * 1.55}$$

$Q_p$  = Plants maximum design flow, in million gallons per day (mgd)

$Q_R$  = Estimated 7Q10 low flow for receiving water at the plants outfall (cfs)

1.55 = Factor to convert mgd to cfs

Where:  $Q_p$  = 0.0432 mgd

$Q_R$  = 4.5 cfs

$$\text{Dilution Factor} = \frac{4.5 + ((0.0432) * 1.55)}{(0.0432) * 1.55} = 68.20$$

Note:

cfs = cubic feet per second

mgd = million gallons per day

Prepared by: MPG

Reviewed by: SAS

## Calculations

### Receiving Water Temperature Calculation (Engineering calculation for Massachusetts facilities)

$$Q_{\text{plant}} = C_p m_p \Delta T_p$$

$$Q_{\text{river}} = C_p m_r \Delta T_r$$

$$C_p m_p \Delta T_p = C_p m_r \Delta T_r$$

$$\Delta T_r = m_p / m_r \times \Delta T_p$$

$Q_{\text{plant}}$  = heat load discharge from plant (btu)

$\Delta T_r$  = change in river temperature, °F

$\Delta T_p$  = change in temperature, effluent - influent, °F

$C_p$  = heat capacity of water = 1.0 °F x btu/lb

$m_p$  = mass of effluent, lbs (gal. or cubic feet per second if volume is used)

$m_r$  = mass of river, lbs (gal. or cubic feet per second if volume is used)

$$\Delta T_r = \frac{m_p}{m_r} \times \Delta T_p$$

Where:  $m_p = 0.06684$  cfs (30 gpm)

$m_r = 4.5$  cfs

$\Delta T_p = +/- 30$  °F

$$\Delta T_r = \frac{0.06684 \text{ cfs}}{4.5 \text{ cfs}} \times 30 \text{ °F} = +/- 0.446$$

Prepared by: MGP

Reviewed by: SAS



## StreamStats Data-Collection Station Report

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**USGS Station Number** 01105000  
**Station Name** NEPONSET RIVER AT NORWOOD, MA

[Click here to link to available data on NWIS-Web for this site.](#)

### Descriptive Information

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**Station Type** Gaging Station, continuous record  
**Regulated?** False  
**Period of Record** 1939-present  
**Remarks** Flow affected by mills and reservoirs and by several diversions for municipal and industrial use.  
**Latitude (degrees NAD83)** 42.1775986  
**Longitude (degrees NAD83)** -71.20088639  
**Hydrologic unit code** 01090001  
**Local Basin** 19-Boston Harbor  
**County** 021-Norfolk  
**MCD** 50250-Norwood town  
**Directions to station** 200 feet upstream from Pleasant Street

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### Physical Characteristics

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Characteristic Name	Value	Units	Citation Number
Area_of_Lakes_and_Ponds	3.38	square miles	<u>30</u>
Contributing_Drainage_Area	35.200	square miles	<u>47</u>
Drainage_Area	34.7	square miles	<u>30</u>
Main_Channel_Length	11.000	miles	<u>47</u>
Mean_Basin_Elevation	210	feet	<u>30</u>
Mean_Basin_Slope_ft_per_mi	23.8	feet per mi	<u>30</u>
Percent_Forest	72.000	percent	<u>47</u>
Percent_Lakes_and_Ponds	3.3800	percent	<u>47</u>

Percent_Storage	3.4900	percent	<u>47</u>
Soil_Infiltration	4.3000	inches	<u>47</u>
Stream_Slope_10_and_85_Method	23.800	feet per mi	<u>47</u>
Total_Stream_Length	11	miles	<u>30</u>

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## Streamflow Statistics

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Statistic Name	Value	Units	Citation Number
<b>Peak-Flow Statistics</b>			
10_Year_Peak_Flood	600	cubic feet per second	<u>47</u>
100_Year_Peak_Flood	1200	cubic feet per second	<u>47</u>
2_Year_Peak_Flood	317	cubic feet per second	<u>47</u>
200_Year_Peak_Flood	1450.00	cubic feet per second	<u>47</u>
25_Year_Peak_Flood	803	cubic feet per second	<u>47</u>
5_Year_Peak_Flood	470	cubic feet per second	<u>47</u>
50_Year_Peak_Flood	986	cubic feet per second	<u>47</u>
Log_Mean_of_Annual_Peaks	2.5220	Log base 10	<u>47</u>
Log_Skew_of_Annual_Peaks	0.6980	Log base 10	<u>47</u>
Log_STD_of_Annual_Peaks	0.1760	Log base 10	<u>47</u>
Mean_Annual_Flood	234.000	cubic feet per second	<u>47</u>
Peak_years_with_historic_adjustment	90.000	years	<u>47</u>
Systematic_peak_years	36	years	<u>47</u>
WRC_Mean	2.5290	Log base 10	<u>47</u>
WRC_Skew	0.8920	Log base 10	<u>47</u>
WRC_STD	0.1860	Log base 10	<u>47</u>
<b>Flood-Volume Statistics</b>			
7_Day_10_Year_Maximum	345.000	cubic feet per second	<u>47</u>
7_Day_2_Year_Maximum	179.000	cubic feet per second	<u>47</u>
7_Day_50_Year_Maximum	559.000	cubic feet per second	<u>47</u>
<b>Low-Flow Statistics</b>			
<del>7_Day_10_Year_Low_Flow</del>	<u>4.5</u>	cubic feet per second	<u>19</u>
7_Day_2_Year_Low_Flow	7.4	cubic feet per second	<u>19</u>
<b>Flow-Duration Statistics</b>			
1_Percent_Duration	278	cubic feet per second	<u>41</u>
10_Percent_Duration	126	cubic feet per second	<u>41</u>
20_Percent_Duration	87	cubic feet per second	<u>41</u>
25_Percent_Duration	75	cubic feet per second	<u>41</u>
30_Percent_Duration	65	cubic feet per second	<u>41</u>
40_Percent_Duration	50	cubic feet per second	<u>41</u>

5_Percent_Duration	166	cubic feet per second	<u>41</u>
50_Percent_Duration	37	cubic feet per second	<u>41</u>
60_Percent_Duration	27	cubic feet per second	<u>41</u>
70_Percent_Duration	19	cubic feet per second	<u>41</u>
75_Percent_Duration	16	cubic feet per second	<u>41</u>
80_Percent_Duration	13	cubic feet per second	<u>41</u>
90_Percent_Duration	8.7	cubic feet per second	<u>41</u>
95_Percent_Duration	6.5	cubic feet per second	<u>41</u>
99_Percent_Duration	3.9	cubic feet per second	<u>41</u>
<b>General Flow Statistics</b>			
Average_daily_streamflow	55.992	cubic feet per second	<u>41</u>
Maximum_daily_flow	1260	cubic feet per second	<u>41</u>
Minimum_daily_flow	0.58	cubic feet per second	<u>41</u>
Std_Dev_of_daily_flows	61.154	cubic feet per second	<u>41</u>
<b>Base Flow Statistics</b>			
Average_BFI_value	0.578	dimensionless	<u>42</u>
Number_of_years_to_compute_BFI	64	years	<u>42</u>
Std_dev_of_annual_BFI_values	0.065	dimensionless	<u>42</u>
<b>Precipitation Statistics</b>			
24_Hour_2_Year_Precipitation	3.3000	inches	<u>47</u>
Mean_Annual_Precipitation	43.500	inches	<u>47</u>
<b>Climate Characteristics</b>			
Mean_Annual_Snowfall	46.000	inches	<u>47</u>
<b>Temperature Statistics</b>			
Mean_Min_January_Temperature	19.000	degrees F	<u>47</u>

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## Citations

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Citation Number	Citation Name and URL
19	<u>Wandle, S.W., Jr., 1984, Gazetteer of Hydrologic Characteristics of Streams in Massachusetts--Coastal River Basins of the North Shore and Massachusetts Bay: U.S. Geological Survey Water-Resources Investigations Report 84-4281</u>
30	<u>Imported from NWIS file</u>
41	<u>Wolock, D.M., 2003, Flow characteristics at U.S. Geological Survey streamgages in the conterminous United States: U.S. Geological Survey Open-File Report 03-146, digital data set</u>
42	<u>Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set</u>
47	<u>Wandle, S.W., Jr., 2003, Estimating peak discharges of small, rural streams in Massachusetts: U.S. Geological Survey Water-Supply Paper 2215, 26 p.</u>

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Appendix A

Notice of Intent (NOI) Form for Nonpoint Source Pollution



Appendix A

Notice of Intent (NOI) Form for Noncontact Cooling Water General  
Permit

**APPENDIX 5**

**Suggested Form for Notice of Intent (NOI) for the Noncontact Cooling Water General Permit**

1. General facility information. Please provide the following information about the facility.

a) Name of facility: <u>Norwood Theater</u>		Type of Business: <u>Theater</u>
Facility Location Address :	Facility SIC codes:	Facility Mailing Address (if not location address)
<u>109 Central Street, Norwood, MA</u>	<u>7922</u>	
longitude: <u>-71.19974</u>		
latitude: <u>42.19386</u>		
b) Name of facility owner: <u>Story Board LLC</u>		Email address of owner:
Owner's Tel #: <u>(781) 255-6980</u>		Owner is (check one): 1. Federal _____ 2. State _____ 3. Tribal _____
Owner's Fax # _____		4. Private <input checked="" type="checkbox"/> 5. Other _____ (Describe)
Address of owner (if different from facility address)		
Legal name of Operator, if not owner: <u>Story Board LLC</u>		
Operator Contact Name: <u>Susan Lewis</u>		
Operator Tel Number: <u>(781) 255-6980</u> Fax Number: _____		
Operator's email: <u>N/A at this time</u>		
Operator Address (if different from owner)		
d) Attach topographic map indicating the locations of the facility and the receiving water; all NCCW discharge points; upstream and downstream monitoring points. Map attached? <input checked="" type="checkbox"/>		
e) Check Yes or No for the following:		
1. Has a prior NPDES permit been granted for the discharge? Yes _____ No <input checked="" type="checkbox"/> If Yes, Permit Number: _____		
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes <input checked="" type="checkbox"/> No _____		
3. Is the facility covered by an individual NPDES permit? Yes _____ No <input checked="" type="checkbox"/> If Yes, Permit Number _____		
4. Is there a pending application on file with EPA for this discharge? Yes _____ No <input checked="" type="checkbox"/> If Yes, date of submittal: _____		

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

a) Name of receiving water into which discharge will occur: Meadow Brook (near Neponset River)  
State Water Quality Classification: B Freshwater: Yes Marine Water: \_\_\_\_\_

b) Describe the discharge activities for which the owner/applicant is seeking coverage: Discharge of groundwater from a geothermal well system's bleed

c) FOR MASSACHUSETTS FACILITIES ONLY: Engineering Calculations: Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment A of the General Permit. Check if attached: ✓

d) Number of outfalls 1

For each outfall:

e) What is the maximum daily and average monthly flow of the discharge? Note that EPA will use the flow reported here as the facility's permitted effluent flow limit. Max Daily Flow 43,200 GPD Average Flow 14,400 GPD

f) What is the maximum daily and average monthly temperature of the discharge (in degrees F)? Max Temp. 90 Average Temp. 65

g) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8 Min pH 6

h) FOR MASSACHUSETTS FACILITIES ONLY: Is the source water of the NCCW potable water? Yes \_\_\_\_\_ No ✓ If Yes, EPA will calculate the Total Residual Chlorine limit for facilities located in Massachusetts.

i) Is the discharge continuous? Yes \_\_\_\_\_ No ✓ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) P  
If (P), number of days or months per year of the discharge 30 d and the specific months of discharge July-August/January-February;  
If (I), number of days/year there is a discharge \_\_\_\_\_

j) Latitude and longitude of each discharge within 100 feet: outfall 1: long. 42° 11' 06" lat. 71° 11' 41"; outfall 2: long. \_\_\_\_\_ lat. \_\_\_\_\_; outfall 3: long. \_\_\_\_\_ lat. \_\_\_\_\_ (See [http://www.epa.gov/tri/report/siting\\_tool](http://www.epa.gov/tri/report/siting_tool))

k) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 4.5 cfs  
Please attach any calculation sheets used to support stream flow and dilution calculations. See General Permit Attachment B for equations and additional information.

MASSACHUSETTS FACILITIES: See Part 3.4 and Appendix 1 of the General Permit for more information on ACEC.  
Areas of Critical Environmental Concern (ACEC): Does the discharge occur in an ACEC? Yes \_\_\_\_\_ No ✓  
If yes, provide the name of the ACEC: \_\_\_\_\_

**3. NCCW Source Water Information. Please provide information about the NCCW source water, using separate sheets as necessary:**

<p>a) Indicate source of the NCCW (i.e., municipal water supply, private well, surface water withdrawal, groundwater):                  Source: <u>Geothermal well water (1500 feet deep GW)</u>                  Name of Source Water: _____                  Groundwater _____                  Is the source registered/permitted under MA Water Management Act or NHDES Water User Registration Rule (Env Wq 2202)?                  Yes _____ No <u>✓</u></p>	<p>b) If source water is surface water:                  i) Is it a freshwater river or stream Yes _____ No <u>✓</u>                  ii) Is it a lake? _____ reservoir? _____                  iii) Is it tidal river? _____ estuary? _____ ocean? _____                  c) Is the source water groundwater? Yes _____ No _____ If yes, see Appendix 8 and submit effluent and surface water test results, as required in Part 5.4 of the General Permit.                  d) Does the facility use both a primary and backup source of noncontact cooling water?                  Yes _____ No <u>✓</u>                  If yes, attach information that identifies and explains the primary and backup sources of noncontact cooling water for and how often the backup supply was used in last three years.</p>
<p>If yes, registration number: _____</p>	

**4. Best Technology Available for CWIS**

Are you subject to BTA requirements at Part 4.2 of the General Permit? (Facility's discharge is covered by this General Permit and the facility withdraws noncontact cooling water from surface source water). Yes \_\_\_\_\_ No ✓ If No, explain:

If YES, attach the facility-specific BTA description as required in Part 4.3 of the General Permit. For additional information and guidance, see Questions 13-23 of the NCCW Fact Sheet, posted at <http://www.epa.gov/region1/npdes/nccwgp.html>. Provide a map showing the location of each CWIS intake structure; NCCW outfall(s) and any CWIS feature referred to in the BTA description.

Include in your description:

- \_\_\_\_\_ Measures to meet the General Permit Part 4.3.a general BTA requirements, including documentation that describes the facility's monitoring program for impinged fish and/or invertebrate; or the required alternative monitoring plan frequency and/or protocol
- \_\_\_\_\_ A characterization of the source water body's aquatic life habitat in the vicinity of each CWIS during the seasons when the CWIS may be in use
- \_\_\_\_\_ The attributes of the current CWIS
- \_\_\_\_\_ Design measures of the CWIS
- \_\_\_\_\_ Operation measures of the CWIS
- \_\_\_\_\_ Historical occurrence of impinged fish for the past five years
- \_\_\_\_\_ If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system
- \_\_\_\_\_ Other components to reduce impingement and/or entrainment of aquatic life

**4. BTA FOR CWIS CONTINUED:**

Provide the following information for each CWIS to support your attached facility-specific BTA description.

Design capacity of the of the CWIS \_\_\_\_\_MGD

Maximum monthly average intake of the CWIS during the previous five years \_\_\_\_\_MGD Month in which this flow occurred \_\_\_\_\_

Maximum through-screen design intake velocity \_\_\_\_\_feet/second (fps)

For facilities where the CWIS is located on a freshwater river or stream, provide the following information:

The source water's annual mean flow \_\_\_\_\_cubic feet/second (cfs) as available from USGS or other appropriate source

The design intake flow as a % of the source water's annual mean flow \_\_\_\_\_ Attach calculations if equal to or less than 5% of annual mean flow.

The source water's 7Q10 \_\_\_\_\_cfs. See Attachment B of the General Permit for more information on 7Q10 determinations.

The design intake flow as a percent of the source water's 7Q10 \_\_\_\_\_

**5. Contaminant Information**

If applicable, attach a listing of all non-toxic pH neutralization and/or dechlorination chemicals used, including chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the NCCW discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC<sub>50</sub> in percent for aquatic organism(s)).

**6. Determination of Endangered Species Act Eligibility:** Provide documentation of ESA eligibility as required at Part 3.4 and Appendix 2, Part C, Step 4, of the General Permit. In addition, respond to the following questions.

- a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes \_\_\_\_\_ No
- b) Has any consultation with the federal services been completed? Yes  No \_\_\_\_\_
- c) Is consultation underway? Yes \_\_\_\_\_ No
- d) What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one):  
a "no jeopardy" opinion \_\_\_\_\_ or written concurrence \_\_\_\_\_ on a finding that the discharges are not likely to adversely affect any endangered species or
- e) Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D or E) have you met? A \_\_\_\_\_
- f) Attach a copy of the most current federal listing of endangered and threatened species from the USF&W web site listed in Appendices 2, 2.1 and 4

**7. Documentation of National Historic Preservation Act requirements:** Please respond to the following questions:

- a) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes \_\_\_\_\_ No
- b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes \_\_\_\_\_ or No  If yes, attach the results of the consultation(s).
- c) Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 or 3) have you met? 1 \_\_\_\_\_

8. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

9. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the noncontact cooling water (NCCW) system; (2) the discharge consists solely of NCCW (to reduce temperature) and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product (other than heat) or finished product; (4) if the discharge of noncontact cooling water subsequently mixes with other wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for noncontact cooling water; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name:	Norwood Theatre
Operator signature:	Susan Q. Davis
Title:	Stonybrook LLC
Date:	2/10/12

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

## Appendix B

### Laboratory Data


February 13, 2012

Mark Grady  
SAK Environmental, LLC  
231 Sutton Street  
North Andover, MA 01845

Project Location: Norwood  
Client Job Number:  
Project Number: 11.20.00  
Laboratory Work Order Number: 12B0043

Enclosed are results of analyses for samples received by the laboratory on February 1, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager



SAK Environmental, LLC  
 231 Sutton Street  
 North Andover, MA 01845  
 ATTN: Mark Grady

REPORT DATE: 2/13/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 11.20.00

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 12B0043

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Norwood

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
NCCW Sample	12B0043-01	Ground Water		SM18-20 4500 CL B SM18-20 4500 H B SW-846 6010C SW-846 7196A SW-846 7470A	
NCCW SW Sample	12B0043-02	Surface Water		SM18-20 2340B	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SM18-20 4500 H B**

**Qualifications:**

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 1 hour holding time was exceeded.

**Analyte & Samples(s) Qualified:**

**pH**

12B0043-01[NCCW Sample], B045484-DUP1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Michael A. Erickson  
Laboratory Director

Project Location: Norwood

Sample Description:

Work Order: 12B0043

Date Received: 2/1/2012

Field Sample #: NCCW Sample

Sample ID: 12B0043-01

Start Date/Time: 2/1/2012 9:15:00AM

Sample Matrix: Ground Water

Stop Date/Time: 2/1/2012 9:20:00AM

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Cadmium	ND	0.0040	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Chromium	ND	0.010	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Copper	ND	0.010	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Iron	0.12	0.050	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Lead	ND	0.010	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	2/7/12	2/8/12 9:59	AMR
Nickel	ND	0.010	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Silver	ND	0.0050	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP
Zinc	ND	0.020	mg/L	1		SW-846 6010C	2/7/12	2/8/12 18:41	OP

Project Location: Norwood

Sample Description:

Work Order: 12B0043

Date Received: 2/1/2012

Field Sample #: NCCW Sample

Sample ID: 12B0043-01

Start Date/Time: 2/1/2012 9:15:00AM

Sample Matrix: Ground Water

Stop Date/Time: 2/1/2012 9:20:00AM

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	610	10	mg/L	10		SM18-20 4500 CL B	2/13/12	2/13/12 10:00	VAK
Hexavalent Chromium	ND	0.0040	mg/L	1		SW-846 7196A	2/2/12	2/2/12 9:00	SBP
pH @17.2°C	7.2		pH Units	1	H-05	SM18-20 4500 H B	2/2/12	2/2/12 8:15	LL

Project Location: Norwood

Sample Description:

Work Order: 12B0043

Date Received: 2/1/2012

Field Sample #: NCCW SW Sample

Sample ID: 12B0043-02

Start Date/Time: 2/1/2012 7:30:00AM

Sample Matrix: Surface Water

Stop Date/Time: 2/1/2012 7:35:00AM

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Hardness	47	3.0	mg/L	1		SM18-20 2340B	2/7/12	2/9/12 13:02	OP

**Sample Extraction Data**

Prep Method: SW-846 3005A-SM18-20 2340B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-02 [NCCW SW Sample]	B045763	50.0	50.0	02/07/12

SM18-20 4500 CL B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-01 [NCCW Sample]	B046083	100	100	02/13/12

SM18-20 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-01 [NCCW Sample]	B045484	50.0		02/02/12

Prep Method: SW-846 3005A-SW-846 6010C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-01 [NCCW Sample]	B045762	50.0	50.0	02/07/12

SW-846 7196A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-01 [NCCW Sample]	B045771	50.0	50.0	02/02/12

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0043-01 [NCCW Sample]	B045717	6.00	6.00	02/07/12

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B045717 - SW-846 7470A Prep</b>										
<b>Blank (B045717-BLK1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Mercury	ND	0.00010	mg/L							
<b>LCS (B045717-BS1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Mercury	0.00190	0.00010	mg/L	0.00200		95.2	80-120			
<b>LCS Dup (B045717-BSD1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Mercury	0.00189	0.00010	mg/L	0.00200		94.3	80-120	0.993	20	
<b>Duplicate (B045717-DUP1)</b> Source: 12B0043-01 Prepared: 02/07/12 Analyzed: 02/08/12										
Mercury	ND	0.00010	mg/L		ND			NC	20	
<b>Matrix Spike (B045717-MS1)</b> Source: 12B0043-01 Prepared: 02/07/12 Analyzed: 02/08/12										
Mercury	0.00186	0.00010	mg/L	0.00200	ND	93.1	75-125			
<b>Batch B045762 - SW-846 3005A</b>										
<b>Blank (B045762-BLK1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Cadmium	ND	0.0040	mg/L							
Chromium	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Iron	ND	0.050	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.010	mg/L							
Silver	ND	0.0050	mg/L							
Zinc	ND	0.020	mg/L							
<b>LCS (B045762-BS1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Cadmium	0.527	0.0040	mg/L	0.500		105	80-120			
Chromium	0.500	0.010	mg/L	0.500		99.9	80-120			
Copper	0.504	0.010	mg/L	0.500		101	80-120			
Iron	0.505	0.050	mg/L	0.500		101	80-120			
Lead	0.467	0.010	mg/L	0.500		93.4	80-120			
Nickel	0.485	0.010	mg/L	0.500		96.9	80-120			
Silver	0.502	0.0050	mg/L	0.500		100	80-120			
Zinc	0.504	0.020	mg/L	0.500		101	80-120			
<b>LCS Dup (B045762-BSD1)</b> Prepared: 02/07/12 Analyzed: 02/08/12										
Cadmium	0.507	0.0040	mg/L	0.500		101	80-120	3.88	20	
Chromium	0.483	0.010	mg/L	0.500		96.6	80-120	3.37	20	
Copper	0.486	0.010	mg/L	0.500		97.3	80-120	3.56	20	
Iron	0.512	0.050	mg/L	0.500		102	80-120	1.39	20	
Lead	0.458	0.010	mg/L	0.500		91.5	80-120	2.02	20	
Nickel	0.467	0.010	mg/L	0.500		93.4	80-120	3.71	20	
Silver	0.479	0.0050	mg/L	0.500		95.9	80-120	4.69	20	
Zinc	0.486	0.020	mg/L	0.500		97.3	80-120	3.59	20	

**QUALITY CONTROL**

**Metals Analyses (Total) - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B045763 - SW-846 3005A</b>										
<b>Blank (B045763-BLK1)</b>				Prepared: 02/07/12 Analyzed: 02/09/12						
Hardness	ND	3.0	mg/L							



QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B045484 - SM18-20 4500 H B</b>										
<b>LCS (B045484-BS1)</b>				Prepared & Analyzed: 02/02/12						
pH	7.01		pH Units	7.00		100	0-200			
<b>Duplicate (B045484-DUP1)</b>				Source: 12B0043-01		Prepared & Analyzed: 02/02/12				
pH	7.2		pH Units		7.2			0.415	2.93	H-05
<b>Batch B045771 - SW-846 7196A</b>										
<b>Blank (B045771-BLK1)</b>				Prepared & Analyzed: 02/02/12						
Hexavalent Chromium	ND	0.0040	mg/L							
<b>LCS (B045771-BS1)</b>				Prepared & Analyzed: 02/02/12						
Hexavalent Chromium	0.096	0.0040	mg/L	0.100		96.3	80-120			
<b>LCS Dup (B045771-BSD1)</b>				Prepared & Analyzed: 02/02/12						
Hexavalent Chromium	0.095	0.0040	mg/L	0.100		94.7	80-120	1.66	20	
<b>Matrix Spike (B045771-MS1)</b>				Source: 12B0043-01		Prepared & Analyzed: 02/02/12				
Hexavalent Chromium	0.098	0.0040	mg/L	0.100	ND	97.9	75-125			
<b>Matrix Spike Dup (B045771-MSD1)</b>				Source: 12B0043-01		Prepared & Analyzed: 02/02/12				
Hexavalent Chromium	0.098	0.0040	mg/L	0.100	ND	97.9	75-125	0.00	20	
<b>Batch B046083 - SM18-20 4500 CL B</b>										
<b>Blank (B046083-BLK1)</b>				Prepared & Analyzed: 02/13/12						
Chloride	ND	1.0	mg/L							
<b>LCS (B046083-BS1)</b>				Prepared & Analyzed: 02/13/12						
Chloride	19		mg/L	20.3		95.0	80.8-118			
<b>LCS Dup (B046083-BSD1)</b>				Prepared & Analyzed: 02/13/12						
Chloride	20		mg/L	20.3		96.2	80.8-118	1.24	12.7	

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- H-05 Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 1 hour holding time was exceeded.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<b>SM18-20 2340B in Water</b>	
Hardness	CT,MA,NH,NY,RI
<b>SM18-20 4500 CL B in Water</b>	
Chloride	NH,CT,MA,NY,RI,NC,ME
<b>SM18-20 4500 H B in Water</b>	
pH	CT,MA,NH,NY,RI,ME
<b>SW-846 6010C in Water</b>	
Cadmium	CT,NH,NY,RI,ME,NC
Chromium	CT,NH,NY,RI,ME,NC
Copper	CT,NH,NY,RI,ME,NC
Iron	CT,NH,NY,RI,ME,NC
Lead	CT,NH,NY,RI,NC,ME
Nickel	CT,NH,NY,RI,ME,NC
Silver	CT,NH,NY,RI,ME,NC
Zinc	CT,NH,NY,RI,ME,NC
<b>SW-846 7196A in Water</b>	
Hexavalent Chromium	CT,NH,NY,RI,NC,ME
<b>SW-846 7470A in Water</b>	
Mercury	CT,NH,NY,RI,NC,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2012
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2012
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2013
RI	Rhode Island Department of Health	LAO00112	12/30/2012
NC	North Carolina Div. of Water Quality	652	12/31/2012
NJ	New Jersey DEP	MA007 NELAP	06/30/2012
FL	Florida Department of Health	E871027 NELAP	06/30/2012
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2012
WA	State of Washington Department of Ecology	C2065	02/23/2012
ME	State of Maine	2011028	06/9/2013
VA	Commonwealth of Virginia	1381	12/14/2012



Phone: 413-525-2332  
 Fax: 413-525-6405  
 Email: Info@contestlabs.com  
 www.contestlabs.com

12B0043

**CHAIN OF CUSTODY RECORD**

39 Spruce Street  
 East Longmeadow, MA 01028

Page 1 of 1

Company Name: SAK ENVIRONMENTAL

Address: 231 SUDBURY ST, SUITE 215

Attention: NORAH ANDOVER, MA

Project Location: WILMINGTON

Sampled By: NOCK GRADY

Project Proposal Provided? (for billing purposes)  
 Yes  No

Telephone: 978 688 7804  
 Project # 11.20.00

Client PO# \_\_\_\_\_  
 DATA DELIVERY (check all that apply)  
 FAX  EMAIL  WEBSITE

Fax # \_\_\_\_\_  
 Email: mgrady@sakenvironmental.com  
 Format:  PDF  EXCEL  OGIS  
 OTHER

Con-Test Lab ID <small>(laboratory use only)</small>	Client Sample ID / Description	Collection		Composite	Grab	*Matrix Code	Core Code	ANALYSIS REQUESTED	# of Containers	** Preservation	*** Container Code
		Beginning Date/Time	Ending Date/Time								
01	NCCW SAMPLE	9:55 AM 2/1/12	9:25 AM 2/1/12		✓	GW	U	Cr, Fe, Ag, Hg, Zn, Cd, Cu, Ni Hex Chromium PH, Chloride Hardness			
02	NCCW SW SAMPLE	7:30 AM 2/1/12	7:35 AM 2/1/12		✓	SW	U				

Comments: \_\_\_\_\_

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:  
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) \_\_\_\_\_  
 Date/Time: 2/1/12 13:45

Received by: (signature) \_\_\_\_\_  
 Date/Time: 2/1/12 13:45

Relinquished by: (signature) \_\_\_\_\_  
 Date/Time: 2/1/12 16:00

Received by: (signature) \_\_\_\_\_  
 Date/Time: 16:00 2/1/12

Turnaround  7-Day  
 10-Day  
 Other \_\_\_\_\_

24-Hr  48-Hr  
 72-Hr  14-Day  
 Require lab approval

Require lab approval

Require lab approval

Detection Limit Requirements  
 Massachusetts: \_\_\_\_\_  
 Connecticut: \_\_\_\_\_  
 Other: \_\_\_\_\_

Other: \_\_\_\_\_

Other: \_\_\_\_\_

Other: \_\_\_\_\_

Is your project MCP or RCP?  
 MCP Analytical Certification Form Required  
 RCP Analysis Certification Form Required  
 MA State DW Form Required PWSID # \_\_\_\_\_

MA State DW Form Required PWSID # \_\_\_\_\_

MA State DW Form Required PWSID # \_\_\_\_\_

MA State DW Form Required PWSID # \_\_\_\_\_

Dissolved Metals  
 Field Filtered  
 Lab to Filter

\*\*\*Cont. Code:  
 A=amber glass  
 G=glass  
 P=plastic  
 ST=sterile  
 V=vial  
 S=summa can  
 T=tetlar bag  
 O=Other

\*\*Preservation  
 I = Iced  
 H = HCL  
 M = Methanol  
 N = Nitric Acid  
 S = Sulfuric Acid  
 B = Sodium bisulfate  
 X = Na hydroxide  
 T = Na thiosulfate  
 O = Other

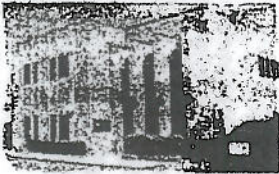
\*Matrix Code:  
 GW= groundwater  
 WW= wastewater  
 DW= drinking water  
 A = air  
 S = soil/soil  
 SL= sludge  
 O = other



NELAC & AIHA Certified  
 WBE/DBE Certified

† TURNAROUND TIME (business days) STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED.  
 PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
 East Longmeadow, MA. 01028  
 P: 413-525-2332  
 F: 413-525-6405  
 www.contestlabs.com



**Sample Receipt Checklist**

CLIENT NAME: SAK RECEIVED BY: C.C-S. DATE: 2/1/12

- 1) Was the chain(s) of custody relinquished and signed? Yes  No  No CoC Included
- 2) Does the chain agree with the samples?  
 If not, explain: Yes  No
- 3) Are all the samples in good condition?  
 If not, explain: Yes  No

4) How were the samples received:  
 On Ice  Direct from Sampling  Ambient  In Cooler(s)   
 Were the samples received in Temperature Compliance of (2-6°C)? Yes  No  N/A  
 Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 3.0°C

5) Are there Dissolved samples for the lab to filter? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 6) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored: 19  
 Permission to subcontract samples? Yes No  
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

**Containers received at Con-Test**

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic	1	Hg/Hopcalite Tube	
250 mL plastic	3	Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments: \_\_\_\_\_

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_  
 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
 # Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen: \_\_\_\_\_

Do all samples have the proper Acid pH: Yes  No  N/A \_\_\_\_\_ Doc# 277  
 Do all samples have the proper Base pH: Yes  No  N/A \_\_\_\_\_ Rev. 1 Mar Page 14 of 14

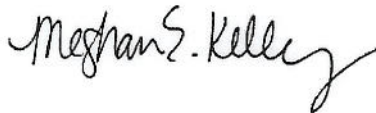
February 17, 2012

Mark Grady  
SAK Environmental, LLC  
231 Sutton Street  
North Andover, MA 01845

Project Location: Norwood  
Client Job Number:  
Project Number: 11.20.00  
Laboratory Work Order Number: 12B0535

Enclosed are results of analyses for samples received by the laboratory on February 16, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

SAK Environmental, LLC  
231 Sutton Street  
North Andover, MA 01845  
ATTN: Mark Grady

REPORT DATE: 2/17/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 11.20.00

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 12B0535

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Norwood

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
NCCW Sample	12B0535-01	Ground Water		SW-846 6020A	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Michael A. Erickson  
Laboratory Director



Project Location: Norwood

Sample Description:

Work Order: 12B0535

Date Received: 2/16/2012

Field Sample #: NCCW Sample

Sample ID: 12B0535-01

Start Date/Time: 2/1/2012 9:15:00AM

Sample Matrix: Ground Water

Stop Date/Time: 2/1/2012 9:20:00AM

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	5.0	µg/L	5		SW-846 6020A	2/16/12	2/17/12 13:41	KSH
Arsenic	ND	2.0	µg/L	5		SW-846 6020A	2/16/12	2/17/12 13:41	KSH

**Sample Extraction Data**

Prep Method: SW-846 3005A-SW-846 6020A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12B0535-01 [NCCW Sample]	B046320	50.0	50.0	02/16/12

**QUALITY CONTROL**

**Metals Analyses (Total) - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B046320 - SW-846 3005A</b>										
<b>Blank (B046320-BLK1)</b>										
					Prepared: 02/16/12 Analyzed: 02/17/12					
Antimony	ND	5.0	µg/L							
Arsenic	ND	2.0	µg/L							
<b>LCS (B046320-BS1)</b>										
					Prepared: 02/16/12 Analyzed: 02/17/12					
Antimony	258	5.0	µg/L	250		103	80-120			
Arsenic	259	2.0	µg/L	250		104	80-120			
<b>LCS Dup (B046320-BSD1)</b>										
					Prepared: 02/16/12 Analyzed: 02/17/12					
Antimony	260	5.0	µg/L	250		104	80-120	0.665	20	
Arsenic	254	2.0	µg/L	250		101	80-120	2.18	20	

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
- † Wide recovery limits established for difficult compound.
- ‡ Wide RPD limits established for difficult compound.
- # Data exceeded client recommended or regulatory level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

Sample	Method	Result	QC
10101	10101	10101	
10102	10102	10102	
10103	10103	10103	
10104	10104	10104	
10105	10105	10105	
10106	10106	10106	
10107	10107	10107	
10108	10108	10108	
10109	10109	10109	
10110	10110	10110	
10111	10111	10111	
10112	10112	10112	
10113	10113	10113	
10114	10114	10114	
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10192	10192	10192	
10193	10193	10193	
10194	10194	10194	
10195	10195	10195	
10196	10196	10196	
10197	10197	10197	
10198	10198	10198	
10199	10199	10199	
10200	10200	10200	

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
---------	----------------

**SW-846 6020A in Water**

Antimony	CT,NH,NY,RI,NC,ME
Arsenic	CT,NH,NY,RI,NC,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2012
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2012
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2013
RI	Rhode Island Department of Health	LAO00112	12/30/2012
NC	North Carolina Div. of Water Quality	652	12/31/2012
NJ	New Jersey DEP	MA007 NELAP	06/30/2012
FL	Florida Department of Health	E871027 NELAP	06/30/2012
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2012
WA	State of Washington Department of Ecology	C2065	02/23/2012
ME	State of Maine	2011028	06/9/2013
VA	Commonwealth of Virginia	1381	12/14/2012

**CHAIN OF CUSTODY RECORD**

39 Spruce Street  
East Longmeadow, MA 01028

Company Name: **SAR ENVIRONMENTAL**  
Address: **231 SUDBURY, SUITE 26**  
Telephone: **978 688 7804**  
Project # **11.20.00**

Client PO# **DATA DELIVERY** (check all that apply)  
Attention: **MARY GRADY**  
Project Location: **LEWISWOOD**  
Project # **11.20.00**  
Fax # **978 688 7804**  
Email: **mary.grady@sarenvironmental.com**

Sampled By: **MARY GRADY**  
Project Proposal Provided? (for billing purposes)  
 Yes  No  
proposal date

Con-Test Lab ID <small>(laboratory use only)</small>	Client Sample ID / Description	Collection		Composite	Grab	Matrix Code	ANALYSIS REQUESTED	# of Containers	Preservation	Container Code	Dissolved Metals
		Beginning Date/Time	Ending Date/Time								
<b>01</b>	<b>NCCU SAMPLE</b>	<b>9:54</b>	<b>9:58</b>		<input checked="" type="checkbox"/>	<b>GW</b>	<b>Cr, Fe, Ag, Hg, Zn, Cd, Cu, Ni</b> <b>Hex Chromium</b> <b>PH, Chloride</b> <b>Hardness</b>				
<b>02</b>	<b>NCCW SW SAMPLE</b>	<b>7:30am</b>	<b>7:35am</b>		<input checked="" type="checkbox"/>	<b>SW</b>	<b>Sb + As</b>				

Comments: **Reactive Sample-01 for Sb + As on a 24 hour TAT for Steve D. MERE 2/10/12**

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:  
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) **Mary Grady** Date/Time: **2/1/12 13:45**  
 Received by: (signature) **Mary Grady** Date/Time: **2/1/12 13:45**  
 Relinquished by: (signature) **Mary Grady** Date/Time: **2/1/12 16:00**  
 Received by: (signature) **Mary Grady** Date/Time: **2/1/12 16:00**

Turnaround Time:  7-Day  10-Day  Other  
 24-Hr  48-Hr  72-Hr  4-Day  
 Require lab approval

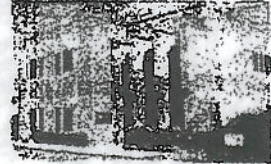
Detection Limit Requirements: Massachusetts: \_\_\_\_\_ Connecticut: \_\_\_\_\_ Other: \_\_\_\_\_

Is your project MCP or RCP?  
 MCP Analytical Certification Form Required  
 RCP Analysis Certification Form Required  
 MA State DW Form Required PWSID # \_\_\_\_\_

ACCREDITED IN ACCORDANCE WITH **nelac** **AIHA**  
**NEIAC & AIHA Certified**  
**WBE/DBE Certified**

TURNAROUND TIME (business days) STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED. PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
 East Longmeadow, MA. 01028  
 P: 413-525-2332  
 F: 413-525-6405  
 www.contestlabs.com



**Sample Receipt Checklist**

CLIENT NAME: SAK RECEIVED BY: C.C-S. DATE: 2/1/12

- 1) Was the chain(s) of custody relinquished and signed?  Yes  No No CoC Included
- 2) Does the chain agree with the samples?  Yes  No  
 If not, explain: \_\_\_\_\_
- 3) Are all the samples in good condition?  Yes  No  
 If not, explain: \_\_\_\_\_
- 4) How were the samples received:  
 On Ice  Direct from Sampling  Ambient  In Cooler(s)
- Were the samples received in Temperature Compliance of (2-6°C)?  Yes  No N/A
- Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 3.0°C
- 5) Are there Dissolved samples for the lab to filter? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_
- 6) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored: 19 Permission to subcontract samples? Yes No  
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

**Containers received at Con-Test**

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic	1	Hg/Hopcalite Tube	
250 mL plastic	3	Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments: \_\_\_\_\_

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_  
 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
 # Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen: \_\_\_\_\_

Do all samples have the proper Acid pH:  Yes  No N/A \_\_\_\_\_ Doc# 277

Do all samples have the proper Base pH: Yes  No  N/A \_\_\_\_\_ Rev. 1 May 2011





**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

- Eastern cougar and gray wolf are considered extirpated in Massachusetts.
- Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
- Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5087  
<http://www.fws.gov/newengland>

January 17, 2012

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman  
Supervisor  
New England Field Office

NORWELL	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	1981
NORWELL	Vascular Plant	Rumex verticillatus	Swamp Dock	T	2008
NORWELL	Vascular Plant	Senna hebecarpa	Wild Senna	E	Historic

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
NORWOOD	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1913
NORWOOD	Bird	Ammodramus henslowii	Henslow's Sparrow	E		Historic
NORWOOD	Bird	Ixobrychus exilis	Least Bittern	E		1985
NORWOOD	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1989
NORWOOD	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1894
NORWOOD	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1910
NORWOOD	Vascular Plant	Nabalus serpentarius	Lion's Foot	E		1901
NORWOOD	Vascular Plant	Petasites frigidus var. palmatus	Sweet Coltsfoot	E		1897
NORWOOD	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1909
NORWOOD	Vascular Plant	Scirpus longii	Long's Bulrush	T		2002
NORWOOD	Vascular Plant	Sphenopholis pennsylvanica	Swamp Oats	T		Historic

[Return to top](#)

Updated: October 27, 2009

[MassWildlife](#) | [Dept. Fish & Game](#) | [Energy & Env. Affairs](#) | [MassGov](#) | [Site Map](#) | [Privacy Policy](#) | [Accessibility](#) | [Webmaster](#)

Massachusetts Division of Fisheries and Wildlife, 1 Rabbit Hill Rd, Westborough, MA 01581

Tel: (508) 389-6300; Fax: (508) 389-7890

Natural Heritage & Endangered Species Program Tel: (508) 389-6360; Fax: (508) 389-7891

Appendix D

National Historic Preservation Act

## **State Listings – Norfolk County**

### **Day, Fred Holland, House \*\* (added 1977 - - #77000191)**

93 Day St. , Norwood \_\_\_\_\_

Historic Significance: Person, Architecture/Engineering

Architect, builder, or engineer: Beal, J. Williams

Architectural Style: Tudor Revival

Historic Person: Day, Fred Holland

Significant Year: 1890, 1859

Area of Significance: Literature, Art, Architecture

Period of Significance: 1875-1899, 1850-1874

Owner: Private

Historic Function: Domestic

Historic Sub-function: Single Dwelling

Current Function: Domestic, Recreation And Culture

Current Sub-function: Museum, Single Dwelling

### **Norwood Memorial Municipal Building (added 1996 - - #96001086)**

Also known as **Norwood Town Hall**

566 Washington St. , Norwood \_\_\_\_\_

Historic Significance: Architecture/Engineering, Event

Architect, builder, or engineer: Miner, Edward, et al., Upham, William G.

Architectural Style: Late Gothic Revival

Area of Significance: Architecture, Politics/Government, Art, Community Planning And Development

Period of Significance: 1925-1949

Owner: Local

Historic Function: Government, Recreation And Culture, Social

Historic Sub-function: City Hall, Meeting Hall, Monument/Marker

Current Function: Government, Recreation And Culture, Social

Current Sub-function: City Hall, Meeting Hall, Monument/Marker

## **Historic Districts**

No Results

## **Vacant/Not In-use**

No Results

**Information obtained from:**

**<http://www.nationalregisterofhistoricplaces.com/MA/Norfolk/state2.html>**



ADDRESS

PERMIT NUMBER

DISCHARGE NUMBER

FACILITY LOCATION

FROM: YEAR MO DAY TO YEAR MO DAY

Check here if No Discharge  
NOTE: Read Instructions before completing this form

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
SAMPLE MEASUREMENT PERMIT REQUIREMENT									
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I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS WHO REPORT TO THEM, I BELIEVE THE INFORMATION SUBMITTED IS TRUE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPED OR PRINTED

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

DATE

AREA CODE NUMBER YEAR MO DAY



Enter your transmittal number

X250813

Transmittal Number

Your unique Transmittal Number can be accessed online: <http://mass.gov/dep/service/online/trasmfrm.shtml>

# Massachusetts Department of Environmental Protection Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. Copy 2 must accompany your fee payment. Copy 3 should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP  
P.O. Box 4062  
Boston, MA  
02211

\* Note:  
For BWSC Permits,  
enter the LSP.

## A. Permit Information

<u>BRP WM 11</u>	
1. Permit Code: 7 or 8 character code from permit instructions <u>Non Contact Cooling Water General Permit</u>	2. Name of Permit Category
3. Type of Project or Activity	

## B. Applicant Information – Firm or Individual

<u>Story Board LLC</u>			
1. Name of Firm - Or, if party needing this approval is an individual enter name below:			
<u>Lewis</u>	<u>Susan</u>		
2. Last Name of Individual	3. First Name of Individual		4. MI
<u>109 Central Street</u>			
5. Street Address			
<u>Norwood</u>	<u>MA</u>	<u>02062</u>	<u>781-255-6980</u>
6. City/Town	7. State	8. Zip Code	9. Telephone #
<u>Susan Lewis</u>	10. Ext. #		
11. Contact Person		12. e-mail address (optional)	

## C. Facility, Site or Individual Requiring Approval

<u>Norwood Theater</u>			
1. Name of Facility, Site Or Individual			
<u>109 Central Street</u>			
2. Street Address			
<u>Norwood</u>	<u>MA</u>	<u>02062</u>	<u>781-255-6980</u>
3. City/Town	4. State	5. Zip Code	6. Telephone #
8. DEP Facility Number (if Known)			7. Ext. #
9. Federal I.D. Number (if Known)		10. BWSC Tracking # (if Known)	

## D. Application Prepared by (if different from Section B)\*

<u>SAK Environmental LLC</u>			
1. Name of Firm Or Individual			
<u>231 Sutton Street, Suite 2G</u>			
2. Address			
<u>North Andover</u>	<u>MA</u>	<u>01845</u>	<u>978-688-7804</u>
3. City/Town	4. State	5. Zip Code	6. Telephone #
<u>Mark Grady</u>	7. Ext. #		
8. Contact Person		9. LSP Number (BWSC Permits only)	

## E. Permit - Project Coordination

1. Is this project subject to MEPA review?  yes  no  
If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

## F. Amount Due

### Special Provisions:

- Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less).  
*There are no fee exemptions for BWSC permits, regardless of applicant status.*
- Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
- Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
- Homeowner (according to 310 CMR 4.02).

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

<u>2361</u>	<u>385.00</u>	<u>3/16/2012</u>
Check Number	Dollar Amount	Date