United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e. PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N 2	3 DC0000248 11	12 14/06/17 17 18	C 19	S 20 19	2.

Remarks

21 66

Inspection Work Days | Facility Self-Monitoring Evaluation Rating | B1 | QA

----------Reserved----------

67 1.0 69 70 2 71 N 72 N 73 74 75
80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*	Entry Time/Date	Permit Effective Date
The John F. Kennedy Center for the Performing Arts 2700 F Street, N.W. Washington, DC 20566	9:45 am, June 17, 2014	June 6, 2013
	Exit Time/Date 1:15 pm, June 17, 2014	**Permit Expiration Date** June 5, 2018

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)	Other Facility Data (e.g., ISC NAICS, and other descriptive information)
David Koznowsky, HVAC Mechanic Leader; (202) 416-7930 Jason Swift, Maintenance and Operation Manager	
Name, Address of Responsible Official/Title/Phone and Fax Number Rodney A. Cherry, Director of Facility Services; (202) 416-7933	Contacted X Yes ____ No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

X Permit	X Self-Monitoring Program	___ Pretreatment	___ MS4
X Records/Reports	X Compliance Schedules	X Pollution Prevention	
X Facility Site Review	___ Laboratory	X Storm Water	
X Effluent/Receiving Waters	X Operations & Maintenance	___ Combined Sewer Overflow	
X Flow Measurement	X Sludge Handling/Disposal	___ Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

SEV Codes	SEV Description
A0012	Numeric effluent violation (Temperature; 6/2013, 7/2013, 8/2013, 9/2013).
C0011	Failure to monitor for non-toxicity requirements (Influent monitoring not conducted).
C0015	Frequency of sampling violation, (pH DMR omissions; 1/2013, 11/2013, 12/2013, and 2/2014).
A0011	Unapproved bypass (discharge of sludge and sediment during filter backwash).

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
David Pilat	DDOE/WQD, (202) 281-3963	12/16/14
Isaac Kelley	DDOE/WQD, (202) 535-2691	12/16/14
Adion Chinkuyu	DDOE/ WQD, (202) 535-2193	12/16/14
Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date

Comments

	PERMIT NO. DC0000248
SECTIONS F THRU L: COMPLETE ON ALL INSPECTIONS, AS APPROPRIATE. N/A = NOT APPLICABLE	

SECTION F - FACILITY AND PERMIT BACKGROUND

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY (Including City, County and ZIP code)	DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE April 7, 2011 FINDINGS

SECTION G - RECORDS AND REPORTS

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. DETAILS.	X YES ___ NO ___ N/A
(a) ADEQUATE RECORDS MAINTAINED OF:	
(i) SAMPLING DATE, TIME, EXACT LOCATION (See Comments)	X YES _ NO _ N/A
(ii) ANALYSES DATES, TIMES	X YES _ NO _ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	X YES _ NO _ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	X YES _ NO _ N/A
(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)	X YES _ NO _ N/A
(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g., continuous monitoring instrumentation, calibration and maintenance records).	X YES _ NO _ N/A
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	X YES _ NO _ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING LOGS FOR EACH TREATMENT UNIT.	X YES _ NO _ N/A
(e) QUALITY ASSURANCE RECORDS KEPT.	X YES _ NO _ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.	_ YES _ NO X N/A

SECTION H - PERMIT VERIFICATION

INSPECTION OBSERVATIONS VERIFY THE PERMIT DETAILS: See comments below.	___ YES X NO ___ N/A (Further explanation attached ___)
(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	X YES _ NO _ N/A
(b) FACILITY IS AS DESCRIBED IN PERMIT.	X YES _ NO _ N/A
(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.	_ YES _ NO X N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	X YES _ NO _ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES see comment 1.	_ YES X NO _ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.	_ YES _ NO X N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT	X YES _ NO _ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS	X YES _ NO _ N/A
(i) ALL DISCHARGES ARE PERMITTED. See comment 1	_ YES X NO _ N/A

Comments:

1. EPA was not informed that filter backwash water is discharged out of Outfall 001.
2. Influents samples not take properly or not taken at all or taken at wrong place/chillers.
3. At the time of the inspection the facility was not properly monitoring per the permit, monitoring results are not consistently reported, facility representatives responsible for monitoring did not have a copy of the current permit and the facility conducts unpermitted discharge of sediments from filter backwash.

	PERMIT NO. DC0000248 .
SECTION I - OPERATION AND MAINTENANCE	
TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ____ YES _X_ NO ____ N/A (Further explanation attached _____) DETAILS: **Filter backwash water is discharged out of Outfall 001**	
(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	_X_ YES _ NO _ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.	_X_ YES _ NO _ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	_X_ YES _ NO _ N/A
(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED. **Solids and sludges are discharged to the river.**	_ YES _X_ NO _ N/A
(e) ALL TREATMENT UNITS IN SERVICE.	_X_ YES _ NO _ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	_X_ YES _ NO _ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED.	_X_ YES _ NO _ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	_X_ YES _ NO _ N/A
(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.	_X_ YES _ NO _ N/A
(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.	_X_ YES _ NO _ N/A
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	_X_ YES _ NO _ N/A
(l) SPCC PLAN AVAILABLE. **Facility not required to maintain SPCC.**	_ YES _X_ NO _ N/A
(m) REGULATORY AGENCY NOTIFIED OF BY-PASSING. (Dates ___)	_ YES _ NO _X_ N/A
(n) ANY BY-PASSING SINCE LAST INSPECTION.	_ YES _X_ NO _ N/A
(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.	_ YES _X_ NO _ N/A
SECTION J - COMPLIANCE SCHEDULES	
PERMITTEE IS MEETING COMPLIANCE SCHEDULE. _ YES _X_ NO ____ N/A (Further explanation attached **See Comment 1**)	
CHECK APPROPRIATE PHASE(S):	
_ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.	
_ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.).	
_ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.	
_ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.	
_ (e) CONSTRUCTION HAS COMMENCED.	
_ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.	
_ (g) CONSTRUCTION HAS BEEN COMPLETED.	
_ (h) START-UP HAS COMMENCED.	
_ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.	
Comments: 1. The facility has completed the Thermal Plume Study, but has not implemented influent water quality monitoring.	

	PERMIT NO. DC0000248
SECTION K - SELF-MONITORING PROGRAM	
PART 1 - FLOW MEASUREMENT (Further explanation attached _____) PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	_X_ YES _ NO _ N/A
(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	_X_ YES _ NO _ N/A
TYPE OF DEVICE _ WEIR _PARSHALL FLUME _MAGMETER _VENTURI METER _X_ OTHER (Ultrasonic)	
(b) CALIBRATION FREQUENCY ADEQUATE (Date of last calibration ____) ___YES ___ NO _X_ N/A **Meter does not require calibration**	
(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED	_X_ YES _ NO _ N/A
(d) SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED.	___YES _ NO _X_ N/A
(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES	_X_ YES _ NO _ N/A
PART 2 - SAMPLING (Further explanation attached **See CEI Narrative Report**) PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	___ YES _X_ NO _ N/A
(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. **See Comment 1.**	___ YES _X_ NO _ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT. **See Comment 1.**	___ YES _X_ NO _ N/A
(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT IF NO, ___ GRAB ___ MANUAL COMPOSITE ___ AUTOMATIC COMPOSITE _X_ FREQUENCY	_X_ YES _ NO _ N/A
(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE.	_X_ YES _ NO _ N/A
(i) SAMPLES REFRIGERATED DURING COMPOSITING **Composite Samples Not Collected**	___YES _ NO _X_ N/A
(ii) PROPER PRESERVATION TECHNIQUES USED	_X_ YES _ NO _ N/A
(iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	___YES _ NO _X_ N/A
(iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3	_X_ YES _ NO _ N/A
(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT	___ YES _X_ NO _ N/A
(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.	_ YES _ NO _X_ N/A
PART 3 - LABORATORY (Further explanation attached _____) PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	___ YES _ NO _X_ N/A
(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. (40 CFR 136.3)	_X_ YES _ NO _ N/A
(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.	___ YES _ NO _X_ N/A
(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED	___ YES _X_ NO _ N/A
(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	___ YES _X_ NO _ N/A
(e) QUALITY CONTROL PROCEDURES USED.	_X_ YES _ NO _ N/A
(f) DUPLICATE SAMPLES ARE ANALYZED _____% OF TIME.	___ YES _X_ NO _ N/A
(g) SPIKED SAMPLES ARE USED _____% OF TIME.	___ YES _X_ NO _ N/A
(h) COMMERCIAL LABORATORY USED	_X_ YES _ NO _ N/A
(i) COMMERCIAL LABORATORY STATE CERTIFIED.	_X_ YES _ NO ___ N/A
LAB NAME: Bond Water Technologies, Inc. LAB ADDRESS 630 E Diamond Avenue, Gaithersburg, MD 20877	
Comments: 1. Facility is not collecting influent samples, is not continuously recording temperature measurements and is collecting effluent temperature measurements from a location that is not representative of the discharge.	

PERMIT NO. DC0000248

SECTION L - EFFLUENT/RECEIVING WATER OBSERVATIONS (Further explanation attached _____)

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOLIDS	COLOR	OTHER
001	**NONE**	**NONE**	**RIVER TURBITY**	**NONE**	**NONE**	**Brown**	**NONE**

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - SAMPLING INSPECTION PROCEDURES AND OBSERVATIONS (Further explanation attached **Sampling was not conducted.**

_ GRAB SAMPLES OBTAINED

_ COMPOSITE OBTAINED

_ FLOW PROPORTIONED SAMPLE

_ AUTOMATIC SAMPLER USED

_ SAMPLE SPLIT WITH PERMITTEE

_ CHAIN OF CUSTODY EMPLOYED

_ SAMPLE OBTAINED FROM FACILITY=S SAMPLING DEVICE

COMPOSITING FREQUENCY _____ PRESERVATION _____.

SAMPLE REFRIGERATED DURING COMPOSITING: _ YES _ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE

SECTION N - ANALYTICAL RESULTS (Attach report if necessary) N/A

Water/NPDES Compliance Evaluation Inspection

The John F. Kennedy Center for the Performing Arts
2700 F Street NW,
Washington, DC 20566

NPDES Permit No. DC0000248

June 17, 2014

DDOE Representatives:	David Pilat Environmental Protection Specialist
	Isaac Kelley Environmental Protection Specialist
	Adion Chinkuyu Environmental Engineer
Kennedy Center Representatives:	Rodney Cherry Director of Facility Services
	Jason Swift Maintenance and Operation Manager
	David Koznowsky HVAC Mechanic Leader

1. Introduction

On June 17 2014, a National Pollutant Discharge Elimination System (NPDES) Compliance Evaluation Inspection (CEI) was conducted at the John F. Kennedy Center for the Performing Arts (the facility) in Washington, DC 20566 **(Figure 1)**. David Pilat, Isaac Kelley, and Adion Chinkuyu, inspectors from the District Department of the Environment (DDOE); reviewed records, interviewed personnel, conducted an inspection tour of the facility, and completed an EPA Form 3560-3 Water Compliance Inspection Report. The facility representatives were David Koznowsky (HVAC Mechanic Leader), Jason Swift (Maintenance and Operation Manager), and Rodney Cherry (Director of Facility Services). The primary purpose of the inspection was to determine the accuracy and reliability of the facility's self-monitoring and reporting program required by NPDES Permit No. DC0000248. The weather at the time of inspection was sunny

and clear. According to the National Weather Service's Preliminary Monthly Climate Data the average temperature was 85 ºF with a high of 97ºF.

Due to a camera malfunction, only a limited number of photographs were taken using a cell phone camera during the facility inspection and some photographs were of poor quality.

2. Facility Description and Background

The John F. Kennedy Center for the Performing Arts (Discharger or facility) is a multi-theater performing arts venue that uses raw water from the Potomac River as non-contact cooling water for its air conditioning (A/C) system which is comprised of an open loop condenser and a closed loop chiller. The facility's A/C system is maintained and operated 24 hours per day from May through September of each year, and as needed during the remainder of the year. The volume of water used is dependent on the ambient outside air temperature.

The open loop condenser system uses water from the Potomac River to remove heat from the closed loop chiller system and discharges it back to the Potomac River; this water is the subject of the permit. The current permit contains effluent limits for temperature and pH.

The chiller system consists of four chiller units and one plate and frame heat transfer system. The facility typically operates two chillers and the plate and frame system and utilizes two chillers as backup.

The facility's water intake point is located in the Potomac River **(Photo 1)** and extends at an angle 40-feet out and 20-feet down to the middle of the river bed **(Photo2)**. The end of the pipe is equipped with a bar screen as a first measure to prevent "large" debris from entering the intake pipe. There is a monitoring station located at the intake point of the Condenser Pump Room. Samples are collected at the intake point from within the settling chamber via a dip bucket and the temperature and pH is measured using a hand held probe **(Photo 3)**.

The influent enters a screening/filtration process which consists of an initial settling chamber, a stationary screen to capture "large" debris, a diversion wall that directs influent into one of two mud walls, each containing one traveling screen to capture "smaller" debris **(Photo 4)**, and a second set of mud walls. The influent is then combined into a second settling chamber where it is pumped through in-line filtration that captures debris and particulates larger than approximately 2 cm **(Photo 5)**.

The filtered non-contact cooling water flowing from the screening/filtration system is pumped to the mechanical room where it is used to cool one of four chiller units or the plate and frame system. **(Photo 6)** After use, the water is typically returned to the Potomac River via Outfall No. 001 **(Photo 7)**; however, an automated thermally activated valve on the discharge pipe **(Photo 8)** redirects cooling water to the intake settling chamber and re-circulated through the system to meet the maximum permitted temperature of 32.2°C (89.9°F) prior to discharge. Although the permit also requires the cooling water effluent to be less than 2.8ºC (5.04ºF) above the receiving water's ambient temparture; the automated system is not designed to recirculate the cooling

water if this condition is not met.. Facility representatives stated that the recently installed plate and frame heat transfer system reduces the need for the recirculation system, but that the system is maintained as a backup.

3. Permit Verification

Non-contact cooling water discharged from facility Outfall 001 is regulated by NPDES Permit No. DC0000248 (the Permit). The permit issued to the facility became effective on June 6, 2013 and will expire on June 5, 2018. The permit authorizes the discharge of the non-contact cooling water through Outfall 001to the Potomac River.

Facility management provided a copy of the permit for review at the time of inspection; however, during the inspection DDOE inspectors were informed by the facility operators responsible for effluent treatment and monitoring had not reviewed nor been provided a copy of the current permit. As discussed in this report; all discharges to the receiving waters are not characterized as stated in the permit. At the time of the inspection influent and effluent monitoring was not being conducted as required by the permit.

4. Records and Reports

Records and reports associated with the permit are maintained properly at the site and the items reviewed during the inspection included Discharge Monitoring Reports (DMRs) and sampling data sheets. DMR's for January 2013 through May 2014 were reviewed. The facility does not maintain a Stormwater Pollution Prevention Plan (SWPPP) or a Spill Prevention, Control, and Countermeasure Plan (SPCC).

The DMR review included a comparison of reported monitoring results versus requirements and limitations contained within the permit. Effluent exceeded the permitted value for temperature for the following monitoring periods:

Monitoring Period	Permit Limit	Measured Value
6/01/2013 – 6/30/2013	32.2ºC	33.2ºC
7/01/2013 – 7/31/2013	32.2ºC	37ºC
8/01/2013 – 8/31/2013	32.2ºC	34.7ºC
9/01/2013 – 9/30/2013	32.2ºC	32.5ºC

In addition to the excursions above, the inspectors also observed that the change in temperature above ambient temperature is not properly collected or reported. The facility did not measure influent temperature at appropriate sampling location and therefore were not able to calculate appropriate change in temperature above ambient.

There were no pH effluent violations in the DMRs that were reviewed; however, pH results were not reported for the months of 1/2013, 11/2013, 12/2013, and 2/2014.

5. Operation and Maintenance

The plumbing (for both coolant and cooling water), screens, filters, and A/C units appeared to be in good working order. The inspectors did not see any leaks or spills at any of the unit processes involved in handling or discharging cooling water.

Two maintenance issues were observed by the inspectors during the facility tour. The in-line temperature gauge for measuring effluent water was malfunctioning and there was not an adequate backups system, replacement parts, or maintenance conducted by the facility or their contractors to address the issue in a timely manner. In addition, accumulated sludge and sediment is not properly disposed of during settling tank and filter screen maintenance.

6. Self-Monitoring Program

The facility does not have an on-site laboratory and does not collect samples for laboratory analytical testing. The permit requires the facility to monitor flow, temperature, and pH only. Monitoring is conducted by onsite monitoring equipment.

Flow measurements are collected via an ultrasonic flow meter that is located on the effluent discharge pipe leading to Outfall 001. The flow meter is located on a section of the discharge pipe that is representative of total flow of effluent produced by the facility. Manufacturer specifications state that ultrasonic flow meters do not need to be re-calibrated on a regular basis.

The effluent monitoring station is located in the mechanical room on the effluent discharge pipe. The effluent discharge pipe caries water from all four chiller units and the plate and frame system to Outfall 001. Monitoring is accomplished through an in-line meter and data logger that measures pH meter and temperature **(Photo 9)**. The meter is manufactured by ECOLAB® and was installed by Bond Water Technologies, Inc. Bond Water Technologies, Inc. is contracted to conduct routine maintenance, data download and calibration of the effluent monitoring equipment. Hard copies of the data logs downloaded during calibration are maintained in the facility's NPDES files.

During the inspection, the facility representatives informed DDOE inspectors that the automated temperature gauge at the permitted effluent monitoring point had recently malfunctioned and is scheduled to be fixed or replaced. Due to the malfunction, the temperature monitoring data is now being collected from analog thermometers located on each chiller unit **(Photo 10)**. According to the DMR's submitted to DDOE, the temperature sensor at the permitted monitoring location has not been in operation for the past three reporting cycles (March, April and May) and has been functioning sporadically over the past two years with DMR's indicating that analog measurements have been collected for extended periods of time.

The influent monitoring station is located in the condenser room and is situated above an opening in the initial settling chamber at the influent inlet. Water from the intake point is collected via a dip bucket and temperature and pH are measured using a hand held probe

manufactured by HANNA®. A log book for recording measurements is located adjacent to the monitoring station.

The facility representatives informed the inspection team of the following issues regarding their self-monitoring program:

- Influent monitoring (pH and temperature) at the inlet chamber are not representative of the river intake water because at times the river water is mixed with recycled discharge water;
- Influent measurements were collected sporadically on an instrument that was not calibrated **(Photo 11 and Photo 12)**; and
- Influent measurements collected were not reported or used to calculate the values that are reported on the DMRs.

Based on the provided information and observations made by DDOE inspectors the lack of accurate influent monitoring, the change in temperature above ambient temperature at the point of discharge is not correctly collected and reported.

7. Effluent Receiving Water

The receiving waters in the vicinity of Outfall 001 were observed to be free from visible contaminants such as foam, solids, oil sheens, or grease. The outfall was submerged during the inspection, but could be identified by turbulent water flow in the outfall area.

The facility representatives informed the inspectors that on a yearly basis the series of five screens used to filter influent river water and the two settling chambers are backwashed and approximately "one truck load" of solids (trash and concentrated sediments) is discharged to the Potomac River through Outfall 001. The backwash is discharged without treatment or monitoring.

During the inspection, DDOE inspectors observed vehicle washing in the parking garage whereby an individual washing vehicles was using a hose to direct wash water to a storm drain located in a parking garage **(Photo 13)**. Storm drains from the facility connect to the District's municipal separate stormwater sewer system (MS4) which discharges directly to the Potomac River. DDOE inspectors instructed facility representatives to discontinue the activity.

8. Summary of Applicable Permit Conditions, Observations and Recommendations

Part I. Effluent Limitations and Monitoring Requirements

…,the John F. Kennedy Center for the Performing Arts ('permittee') is authorized to discharge non-contact cooling water from Outfall Number 001 of its Facility, located at 2700 F Street, N.W., Washington, DC ("the Facility") to the Potomac River.

Observation 1: Inspectors observed an unpermitted discharge of vehicle wash water to an internal facility stormwater drain. Facility storm drains connect to the Districts MS4 system. The MS4 system in this area discharges to the Potomac River.

Recommendation 1: The facilities current permit does not address stormwater and does not require the development of a SWPPP. In addition, the facility does not conduct activities, store materials or fall under a Standard Industrial Classification (SIC) code which would require the development of a SWPPP and submission of a Notice of Intent (NOI) under the Multi-Sector General Permit. During the inspection and in a follow up letter facility representatives were instructed to discontinue vehicle washing in area's that drain to storm sewers. DDOE has requested facility storm sewer drainage plans and that the facility develop a Stormwater Management Plan for review by the District. DDOE recommends that stormwater issues be reviewed and addressed during the next permit renewal process.

Effluent limitations for temperature: in accordance with DC Water Quality Standards; Not to Exceed a Maximum Daily Value of 32.2º C and 2.8ºC Above Ambient Temperature at Point of Discharge. The Measurement Frequency is Daily and The Sample Type is Continuously Recorded.

Observation 2: Inspectors observed that the continuous monitoring equipment was not functioning and that the facility was recording effluent temperature readings twice per day from analog thermometers located on each individual chiller unit. Measurements collected at these locations represent the temperature of water being discharged by each unit and is not representative of the final effluent discharge temperature.

The facility did not have documentation supporting any notification to EPA or DDOE prior to changing their monitoring locations.

Inspectors observed four temperature effluent violations on DMR reports. The facility discharged water at temperatures higher than 32.2°F. These violations occurred on 6/2013, 7/2013, 8/2013 and 9/2013. In addition, on several DMRs, the facility reported the temperature "*Above Ambient Temperature at Point of Discharge"* (the temperature difference between discharge water and receiving water.) It is unclear how these values were obtained, because facility representatives stated that influent temperatures are only sporadically recorded with a meter that is not calibrated, from a location not representative of the influent flow/receiving water, and the data was not used for reporting purposes. It appears the value reported is the difference between the Maximum Daily Value and the effluent limit.

Recommendation 2: Observation 2 represents four documented numeric effluent violations for temperature [Single Event Violation (SEV) code A0012]. In addition, the facility has demonstrated a clear lack of understanding of the permit, its temperature monitoring and reporting requirements. DDOE recommends that the facility be placed on a compliance schedule requiring the installation of a representative influent monitoring station. DDOE has provided assistance to the facility to explain permit requirements.

Effluent Limitations for pH: pH shall not be less than 6.0 standard units nor greater than 8.5 standard units. The measurement Frequency is 2X per month and the sample type is Grab.

Observation 3: The inspector's review of DMRs found that pH results were not provided for the months of 1/2013, 11/2013, 12/2013, and 2/2014. No notes or explanation is provided on DMR's for the omitted data.

Recommendation 2: Observation 3 represents four documented violations for failure to monitor or report pH at the frequency required by the permit (SEV code C0015). DDOE has provided the facility guidance for pH permit requirements and has been closely monitoring submitted DMR's.

Part II. Standard Conditions for NPDES Permits
Section B. Operation and Maintenance of Pollution Controls
5. <u>Removed Substances</u>

Solids, sludge's, filter backwash, or other pollutants removed in the course of treatment of control of wastewaters shall be disposed of in a manner such as to prevent all pollutants from such materials from entering navigable waters.

Observation 4: Facility representatives stated that on a yearly basis filter screens and settling tanks are backwashed to remove sludge and solids buildup. Backwash water is discharged out of Outfall 001 and the facility representatives estimated a "truck full" of sludge and solids is discharged without treatment or monitoring during this process.

Recommendation 4: Observation 4 represents an unapproved anticipated bypass (SEV code A0011). DDOE has notified the facility of permit requirements pertaining to solids removal. DDOE recommends placing the facility on a compliance schedule requiring the facility develop a procedure for solids disposal that will be meet permit requirements.

Section C. 1: Representative Sampling
1. <u>Representative Sampling</u>

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. The permittee shall take all samples at the monitoring points specified in this permit. The permittee shall not change monitoring points without notification and the approval of the Director.

Observation 5: The inspectors observed the location for monitoring temperature has been moved from the permitted monitoring point to a location on each individual chiller unit. Water from each individual unit is combined making up the final effluent prior to discharge. DDOE does not have any record of notification or request to EPA or subsequent approval.

Recommendation 5: DDOE has provided clarification of procedures and approvals required to move monitoring points and the need for these points to be representative. During the inspection the facility was in the process of fixing malfunctioning monitoring equipment and DDOE believes the clarification provided will prevent future issues in this area.

Part III. Special Conditions
1. Influent and Effluent Monitoring

The permittee shall monitor the Potomac River water influent at the intake point for pH and temperature, on the same days that the samples for effluent monitoring for these parameters are taken, as required by Paragraph I.A. herein. The permittee shall take the readings for influent and effluent no greater than two hours apart. The permittee shall take these measurements from May 1 through October 31 of each year during this permit term, and on any other day when a discharge occurs.

Observation 6: Facility representatives stated that influent monitoring is not regularly conducted and due to the recirculation of water above the effluent temperature discharge limit the monitoring point is not representative of influent water.

Recommendation 6: Observation 6 represents a failure to monitor influent for pH and temperature (SEV code C0011). DDOE recommends that when the compliance schedule associated with Observation 2 (establishment of influent monitoring station) is drafted that the findings of Observation 6 are taken into consideration and that the monitoring point be established in a location representative of influent water.

9. Conclusion

Several deficiencies and permit violations were observed during the CEI. The deficiencies and violations range from minor procedural oversights to direct discharges of pollutants. The deficiencies and violations are attributed to the facilities lack of understanding of the NPDES permit and its requirement's. As outlined above, DDOE recommends issuing formal violations

for direct permit violations and the development of a compliance schedule to address the larger issues. DDOE has been working with facility representatives to correct minor reporting and monitoring issues and have requested that facility representatives contact EPA for approvals of process changes regarding monitoring stations and solids disposal.

Water/NPDES Compliance Evaluation Inspection
The John F. Kennedy Center for the Performing Arts
2700 F Street NW,
Washington, DC 20566
NPDES Permit No. DC0000248

Inspectors: David Pilat, Isaac Kelley, and Adion Chinkuyu District Department of the Environment (DDOE).

Inspection Date: June 17, 2014

Figure 1: The John F. Kennedy Center for the Performing Arts located at 2700 F Street NW, Washington, DC 20566
Source: Google Earth DC.

Photo 1: Access manhole for the intake point on the Potomac River.

Photo 2: Segment of the Potomac River where the facility intake pipe is located. The pipe extends 40 feet out and 20 feet down to the river bottom.

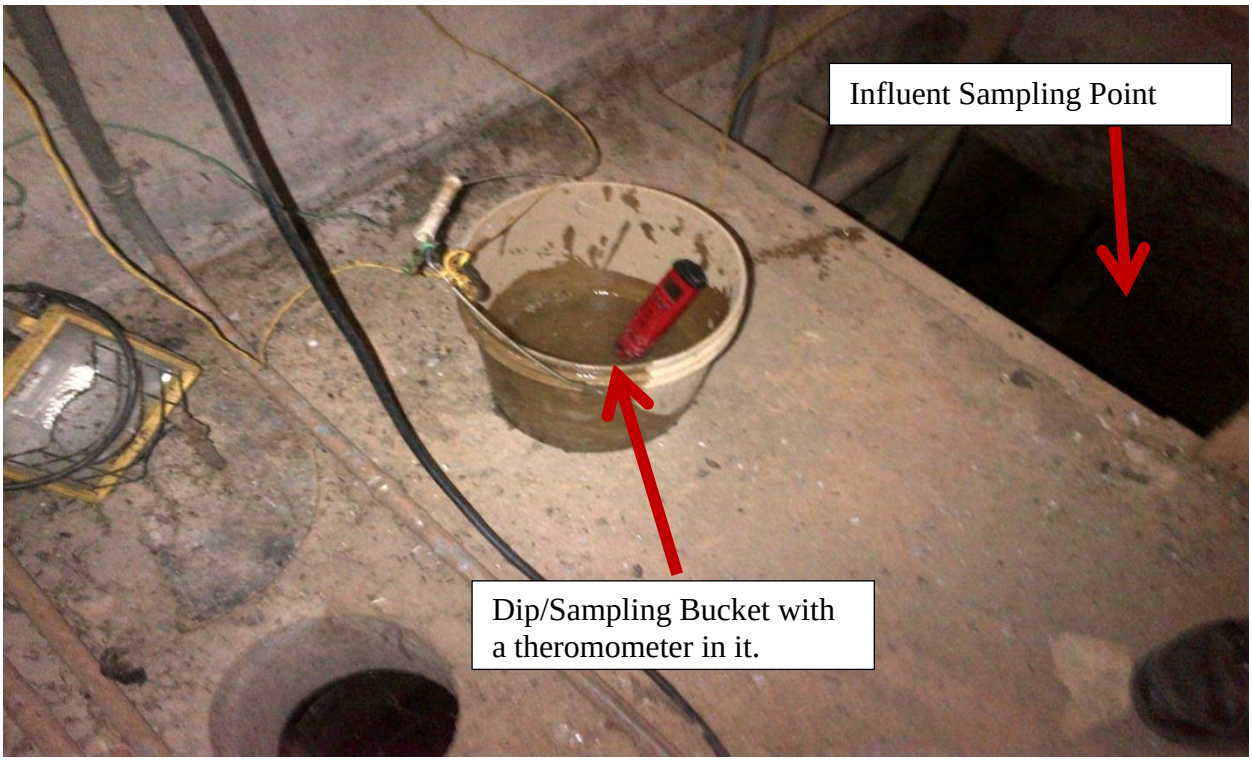


Photo 3: Influent monitoring point, pH and temperature are measured using a hand held meter. Water from the intake point is collected via a dip bucket.

Photo 4: The traveling screen, for removal of smaller debris, is shown in the background.

Photo 5: Final stage filtration unit for screening smaller particulates (2 cm) out of the river water prior to use in Air Conditioner (A/C) chillers.

Photo 6: One of four A/C chiller units.

Photo: 7 Segment of the Potomac River where Outfall 001 is located. The outfall is located on the seawall, and the receiving waters were observed to be free from visible contaminants such as foam, solids, oil sheens, or grease.

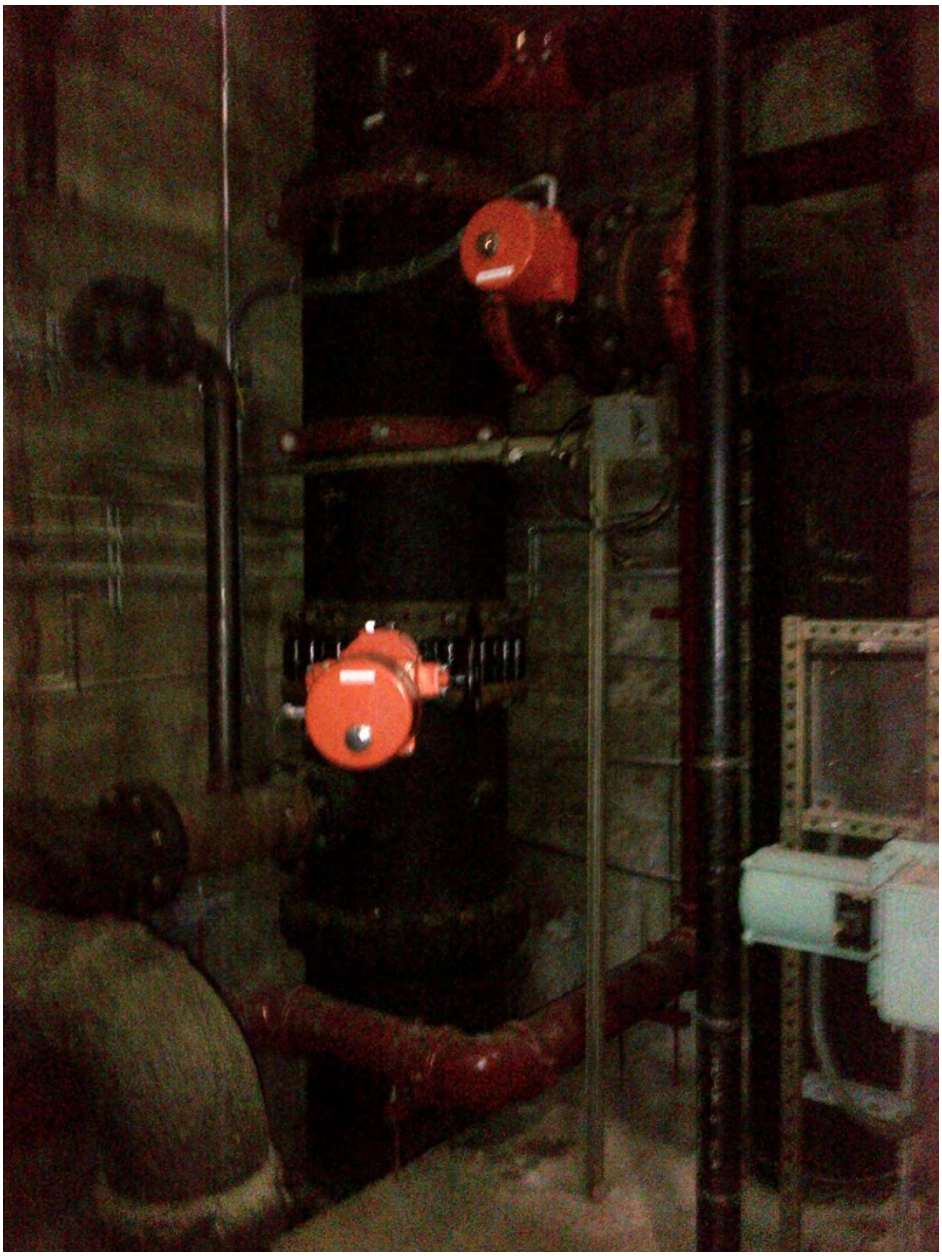


Photo 8: Thermally activated bypass valve located on the facilities effluent discharge pipe. If effluent temperature reaches 32.2°C the water is recalculated through the system.

Photo 9: In-line pH meter and thermometer used to measure effluent parameters. Facility representatives stated that the temperature sensor is malfunctioning and is scheduled to be fixed or replaced.

Photo 10: One of four analog thermometers (on chiller pipe) used in place of the malfunctioning in-line meter.

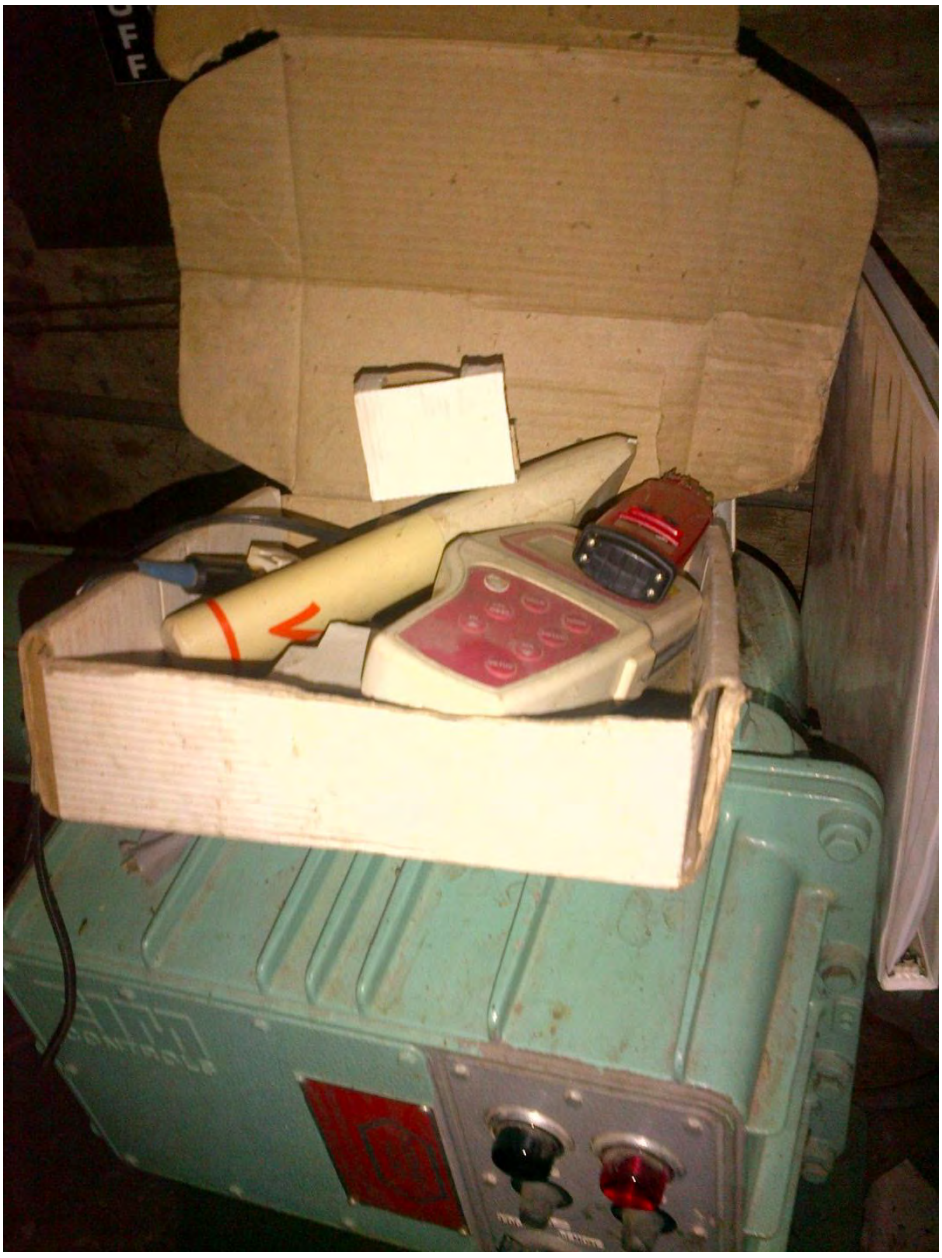
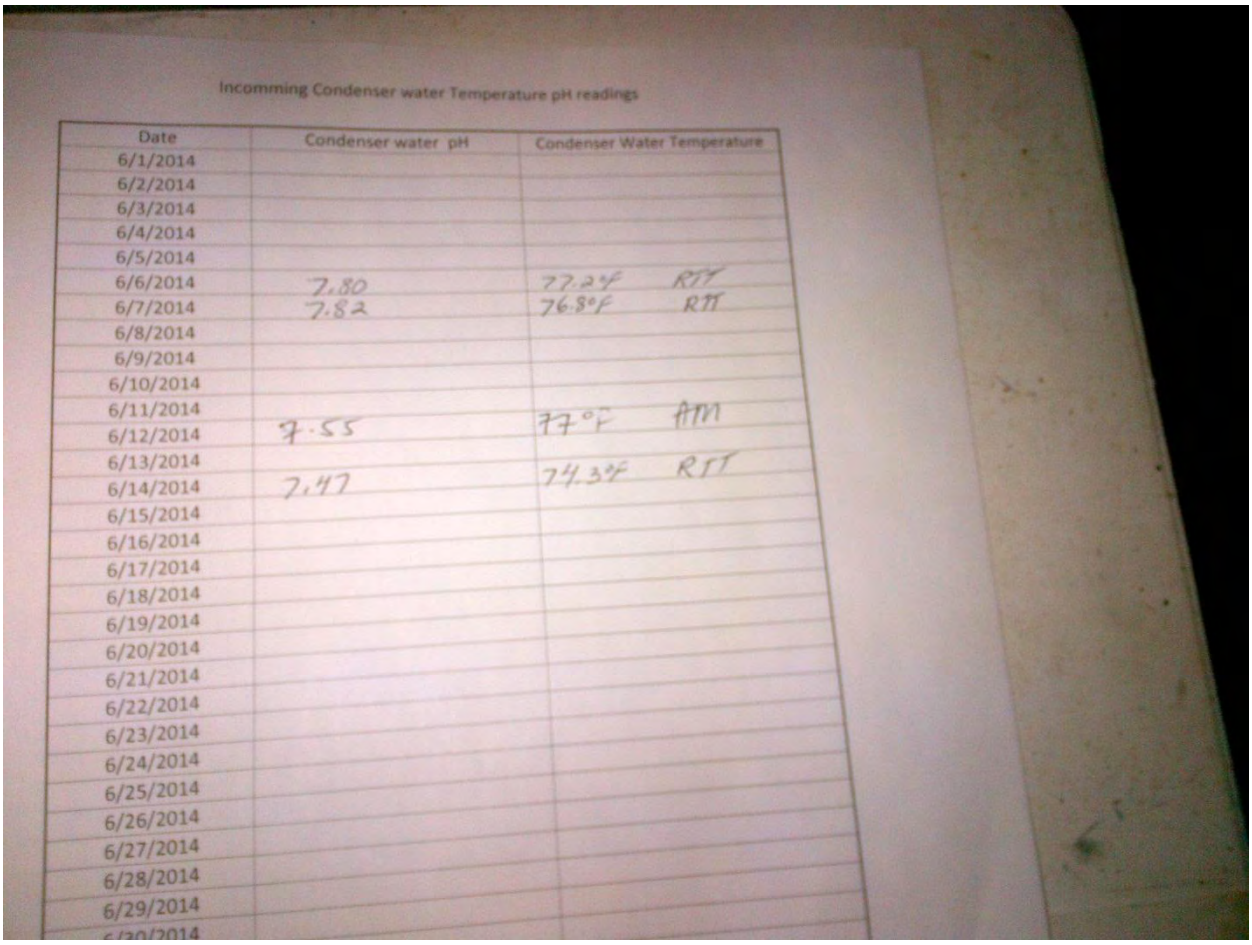


Photo 11: Collection of old hand held pH meters near the influent monitoring point.



Incomming Condenser water Temperature pH readings

Date	Condenser water pH	Condenser Water Temperature
6/1/2014		
6/2/2014		
6/3/2014		
6/4/2014		
6/5/2014		
6/6/2014	7.80	77.2°F RTT
6/7/2014	7.82	76.8°F RTT
6/8/2014		
6/9/2014		
6/10/2014		
6/11/2014		
6/12/2014	7.55	77°F ATM
6/13/2014		
6/14/2014	7.47	74.3°F RTT
6/15/2014		
6/16/2014		
6/17/2014		
6/18/2014		
6/19/2014		
6/20/2014		
6/21/2014		
6/22/2014		
6/23/2014		
6/24/2014		
6/25/2014		
6/26/2014		
6/27/2014		
6/28/2014		
6/29/2014		
6/30/2014		

Photo: 12 Influent temperature and pH measurements are not consistently monitored.

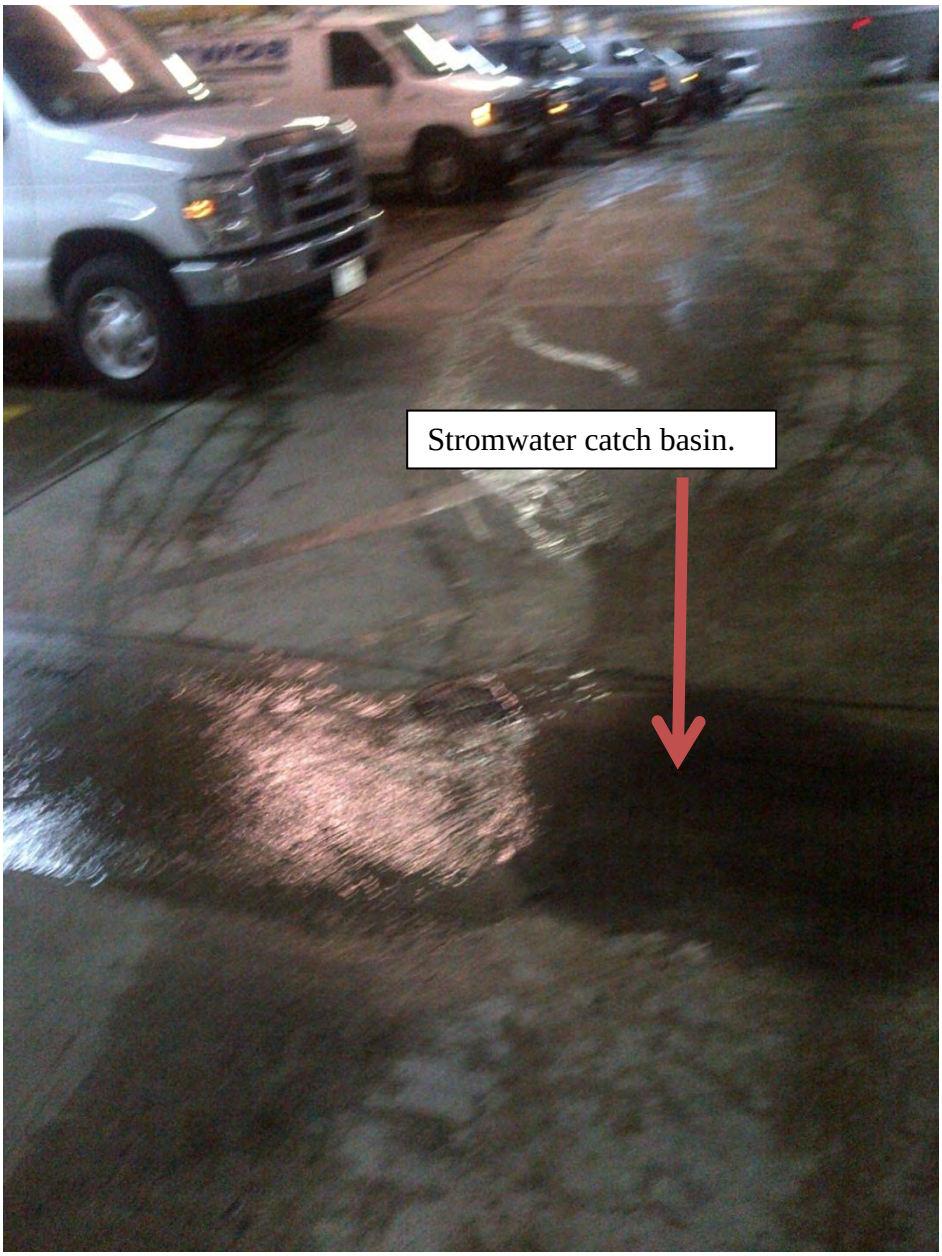


Photo 13: Vehicle wash entering stormwater catch basin located in facility parking garage. The facility did not maintain a Stormwater Pollution Prevention Plan (SWPPP).