FACT SHEET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NPDES Permit No. DC0000370

The United States Environmental Protection Agency (EPA) Reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) For:

Lincoln Memorial Reflecting Pool
2010 Ash Road, S.W.
Washington, D.C. 20024

Applicant Information	
Applicant Name	United States National Park Service, National Mall & Memorial Parks
Applicant Mailing Address	900 Ohio Drive, S.W. Washington, D.C. 20024

PUBLIC COMMENT

Public Comment Start Date: April 25, 2018
Public Comment Expiration Date: June 8, 2018

EPA published the draft permit and its accompanying documents for public notice and comment on April 25, 2018. The public notice itself was published electronically on EPA's website as well as locally in The Washington Times newspaper in D.C. The draft permit and its accompanying documents were made available to the public in electronic form via EPA's website and in hard-copy (paper) format via the public library in D.C. EPA received no comments and no requests for a hearing regarding the draft permit during or after the public notice and comment period.

SUMMARY

FACILITY DESCRIPTION

The Lincoln Memorial Reflecting Pool (LMRP) is a national landmark that is located close to the center of Washington, D.C., in the National Mall area. and the LMRP is managed by National Mall and Memorial Parks (NAMA), a unit of the U.S. National Park Service. LMRP is considered a recreational facility that has been classified as a minor industrial facility for Clean Water Act permitting purposes. The facility consists of the Lincoln Memorial Reflecting Pool itself ("Pool"), a water treatment facility, and walkways.

The Pool, which has a surface area of approximately 338,843 square feet, was constructed in 1922 – 1923 and then rehabilitated in 2010-2012. Currently, the Pool holds approximately 4.5 million gallons of water and is filled with potable water from the District of Columbia's (District) potable water supply. The intended source of water to fill the Pool is the Tidal Basin (Basin), which is treated at filling; however, the use of water from the Basin depends on the conditions of the Basin. Since the Pool has only been filled with potable water since 2012, the permittee is required to submit an effluent characterization report before discharging to the Tidal Basin if the Pool has been filled with water from the Basin. The permit contains special conditions regarding the use of water from the Basin, use of potable water, and emergency discharges.

Aerial view of the Lincoln Memorial Reflecting Pool, Washington, D.C.

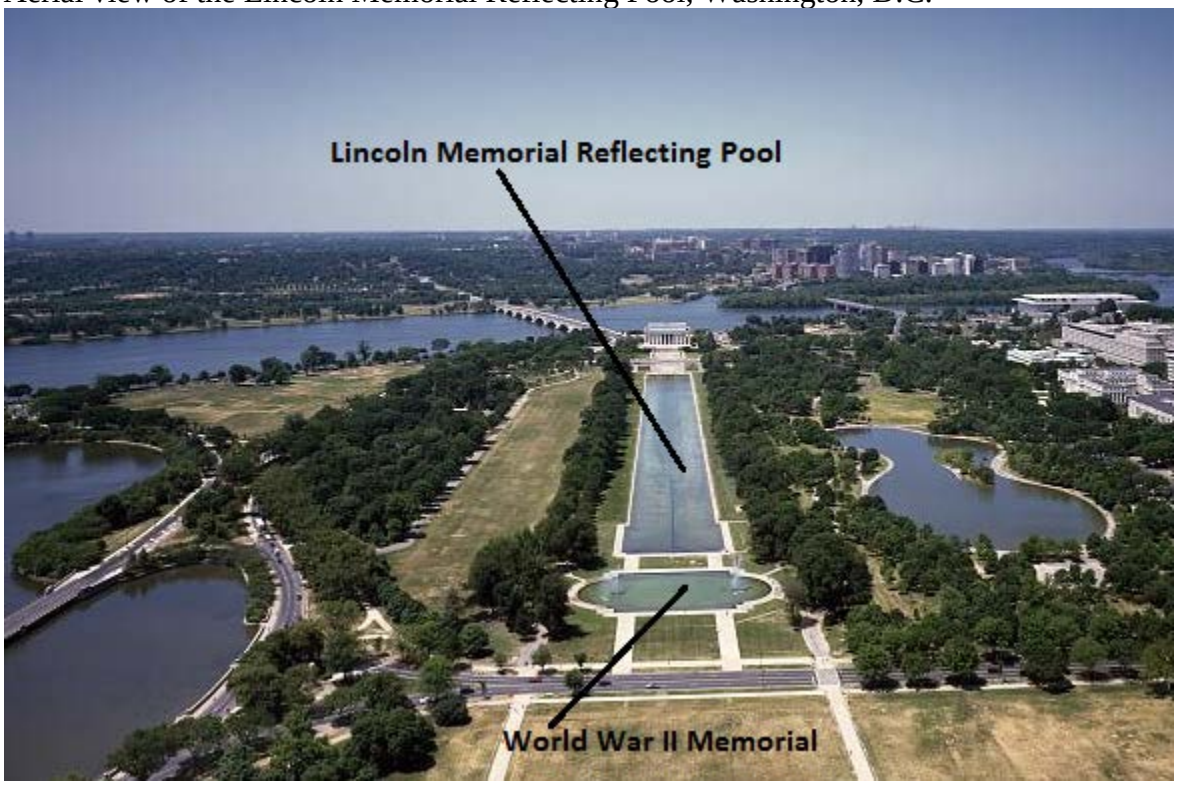

Image from the United States Library of Congress Prints and Photographs Division under digital ID highsm.17233 (http://hdl.loc.gov/loc.pnp/highsm.17233 accessed April 2, 2018). Labels were added to the image for illustrative purposes.

Water is currently supplied to the Pool from the District by a potable water connection and may be supplied to the Pool by the LMRP water treatment facility via the raw water pump station. Also, make-

up water from the World War II Memorial may be used to add water to the Pool. The water level in the Pool is controlled by an overflow weir. If the water level within the Pool is greater than the overflow weir elevation, water flows by gravity to the Basin. Approximately 1.5 million gallons of water is continually circulated and filtered through the Pool and the LMRP water treatment facility daily. A maximum of 1.728 million gallons of water can be circulated through the LMRP water treatment facility daily. The LMRP water treatment facility consists of screening equipment, sand filters, ozone disinfection equipment, flow metering, and supporting systems and is capable of operating in more than one mode; it is able to receive and treat incoming water from a raw water pump station and convey the water to the Pool (fill mode) and it circulates and treats the water of the Pool once the Pool has reached the desired fill level (circulation mode). The LMRP water treatment facility also has the capability to pump the water within the Pool to the sanitary sewer and convey treated water from the Basin to the Constitution Gardens Pond (Pond) once installation of the Pond's force main is complete.

The LMRP water treatment facility is normally operated in circulation mode to maintain the water quality in the Pool and ensure that the water remains reflective. In this mode of operation, water from the center channel of the Pool flows by gravity to the LMRP water treatment facility to start the treatment process. Once a circulation pump is started, the water from the Pool is drawn and conveyed to the screening stages. The screened water then flows to two sand filters operating in parallel. Ozone is added after sand filtration. The treated water is then supplied back to the Pool.

The Pool requires intermittent draining for maintenance and cleaning. There are two means of draining the Pool: (1) a gravity drain discharges to the Tidal Basin, and (2) the drain pump located within the LMRP water treatment facility conveys water within the Pool to a sanitary sewer. The permittee submitted an application to cover an annual discharge (draining) of water from the Pool to the Basin. The discharge is expected to occur, at minimum, once per year and is expected to occur during the winter months (December, January, and February).

There is no storage of bulk chemicals on site. Chemicals stored on site consist of cleaners and water quality testing chemicals at the LMRP water treatment facility. The permittee also anticipates using other chemicals: (1) to treat algae blooms that may occur due to environmental conditions or a temporary shutdown of the LMRP water treatment facility; and (2) in the case that the pH in the Pool is expected to exceed 8.5 at the time of discharge. The permit contains special conditions for the use of chemicals.

In the spring of 2017 the Reflecting Pool was infested with a parasite called schistosome that killed approximately 80 ducklings. The Pool was drained, cleaned, and re-filled with potable water. The likely cause of the parasite infestation was determined to be the Pool not being drained and cleaned during the winter months coupled with multiple consecutive days of hot temperatures in May 2017. Therefore, to reduce the likelihood of another parasitic infestation, the permit contains an annual requirement to drain and clean the Pool in Part III Section D. of the permit.

This is the first NPDES permit for LMRP; however, LMRP is considered an existing facility since the Environmental Protection Agency (EPA) has approved discharges from LMRP in the past. For the discharges that occurred prior to the effective date of this permit, NAMA consulted with EPA and the District of Columbia Department of Energy & Environment (DOEE), conducted sampling, and submitted a monitoring plan for the discharge prior to discharging.

DISCHARGE DESCRIPTION

The Lincoln Memorial Reflecting Pool discharge is comprised of treated water from the Tidal Basin and/or treated potable water from the D.C. water supply. Since the Pool has been designed to receive minimal amounts of stormwater, the Pool is expected to discharge a negligible amount of stormwater. This permit does not authorize NAMA to discharge stormwater. However, this permit does require NAMA to review and update its Storm Water Pollution Prevention Plan since industrial activities that take place within LMRP may pose a risk to stormwater.

OUTFALL NO.	LATITUDE	LONGITUDE	RECEIVING WATER	DESIGNATED USES	RECEIVING WATER IMPAIRMENT	TMDL
001	N 38º 53'16.27"	W 77º 02' 24.45"	Tidal Basin	**Class A, B, C, D, E**	**pH, E. coli, Total PCBs**	**Yes**

Classifications of the District's Waters, Defined
Class A – Primary Contact Recreation
Class B – Secondary Contact Recreation
Class C – Protection and propagation fish, shellfish and wildlife
Class D – Protection of human health related to consumption of fish and shellfish
Class E - Navigation

INFLUENT AND EFFLUENT CHARACTERIZATION

The table on page 5 below includes the most recent monitoring data that was submitted with and in addition to NAMA's NPDES permit application. EPA considered the information in the monitoring reports and the parameters that have been discussed in previous conversations with NAMA and DOEE in determining the parameters to be included in the NPDES permit. All parameters that were identified as present in the effluent through monitoring are considered as parameters of concern.

Parameter	Number of Results Submitted [(1)]	Date Sampled	Data Source
Barium [µg/L]	1 (intake)	01/12/2015	*LMRP NPDES Permit Application Narrative – Volume 2* (LMRP App. Vol. 2) – monitoring data
	1(effluent)		
Biochemical Oxygen Demand, 5-day (BOD_5) [mg/L]	1 (effluent)	05/12/2016	NAMA's response to EPA's request for additional information (NAMA's response) – Analytical Report
Chemical Oxygen Demand (COD)[mg/L]	1 (effluent)	05/12/2016	NAMA's response – Analytical Report
Chlorophyll a [µg/L]	1 (effluent)	01/12/2015	LMRP App. Vol. 2 – monitoring data
Copper [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Dissolved Oxygen (DO) [mg/L]	23 (intake)	09/01/2012	*Monitoring Report for Lincoln Reflecting Pool Draining – September 3, 2012* (09/03/2012 Report) attachment – Baseline water chemistry data
	1 (effluent)		
	3 (intake)	10/03/2012	09/03/2012 Report
	3 (effluent)		
	28 (intake)	01/02/2014	*January 2, 2014 Draining Event Monitoring Report* (01/02/2014 Report) - attachment
	3 (effluent)		
	2 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	2 (effluent)		
E. coli [MPN/100 ml]	1 (effluent)	01/12/2015	LMRP App. Vol. 2 – monitoring data
Fecal Coliform [MPN/100 ml]	1 (effluent)	01/12/2015	LMRP App. Vol. 2 – monitoring data
Flow [mgd]	1 (effluent)	05/04/2016	NAMA's response - EPA Form 2C
	1 (intake)	09/02/2016	EPA & DOEE data
Magnesium [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Manganese [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Molybdenum [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		

Parameter	Number of Results Submitted [(1)]	Date Sampled	Data Source
Nickel [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Nitrogen (Nitrate-Nitrite) [mg/L]	1 (effluent)	02/06/2015	LMRP App. Vol. 2 – monitoring data
Nitrogen (Total) [mg/L]	1 (intake)	09/01/2012	09/03/2012 Report attachment – Baseline water chemistry data
	3 (effluent)		
	1 (effluent)	02/06/2015	LMRP App. Vol. 2 – monitoring data
Nitrogen (Total – Kjeldahl) [mg/L]	1 (effluent)	02/06/2015	LMRP App. Vol. 2 – monitoring data
Oil & Grease [mg/L]	1 (intake)	01/12/2015	NAMA's response - EPA Form 2C
	1 (effluent)		
pH [standard units (SU)]	23 (intake)	09/01/2012	09/03/2012 Report attachment – Baseline water chemistry data
	1 (effluent)		
	3 (intake)	10/03/2012	09/03/2012 Report
	3 (effluent)		
	28 (intake)	01/02/2014	01/02/2014 Report
	3 (effluent)		
	2 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	2 (effluent)		
	1< (effluent)	05/04/2016	NAMA's response - EPA Form 2C
Phosphorus (Total) [mg/L]	1 (intake)	09/01/2012	09/03/2012 Report attachment – Baseline water chemistry data
	3 (effluent)		
	1 (effluent)	02/06/2015	LMRP App. Vol. 2 – monitoring data
Strontium [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Temperature [°C]	1 (intake)	09/01/2012	09/03/2012 Report attachment – Baseline water chemistry data
	23 (effluent)		
	3 (intake)	10/03/2012	09/03/2012 Report
	3 (effluent)		
	28 (intake)	01/02/2014	01/02/2014 Report
	3 (effluent)		

Parameter	Number of Results Submitted [(1)]	Date Sampled	Data Source
	2 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	2 (effluent)		
	1 (effluent)	05/04/2016	NAMA's response - EPA Form 2C
Total Organic Carbon (TOC) [mg/L]	1 (effluent)	05/12/2016	NAMA's response – Analytical Report
Total Residual Chlorine (TRC) [µg/L]	No data submitted		
Total Suspended Solids (TSS) [mg/L]	1 (intake)	12/20/2013	01/02/2014 Report - attachment
	1 (effluent)		
	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
	1 (effluent)	05/12/2016	NAMA's response – Analytical Report
Turbidity [NTU]	57 (intake)	01/02/2014	01/02/2014 Report
	3 (effluent)		
	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		
Zinc [µg/L]	1 (intake)	01/12/2015	LMRP App. Vol. 2 – monitoring data
	1 (effluent)		

(1) The source of intake data is the Tidal Basin. The source of effluent data is the Pool, which was filled with potable water from the District's potable water supply

BASIS FOR EFFLUENT LIMITATIONS

In general, the Clean Water Act (Act) requires compliance with all applicable statutory and regulatory requirements, including effluent limitations based on the capabilities of technologies available to control pollutants (i.e., technology-based effluent limits) and limitations that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits). Typically, technology-based effluent limitations (TBELs) are developed for all applicable pollutants of concern and water quality-based effluent limitations (WQBELs) are developed where TBELs are not adequate to meet applicable water quality standards in the receiving water. The final effluent limitations in NAMA's permit for LMRP ensure that all applicable water quality standards (WQS) are achieved. Since the permitted discharge is expected to occur once per year (intermittent discharge), weekly and monthly average limits are not appropriate.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBELS)

40 CFR § 122.44(a) and § 125.3 require that permits include conditions requiring dischargers to meet applicable technology-based requirements (i.e., TBELS). When EPA has not promulgated effluent limitation guidelines (ELG) for an industry, permit limitations may be based on best professional judgement (BPJ) (40 CFR § 125.3(c)). The TBELs for this facility are based on BPJ decision-making since no ELG applies to the facility.

The facility is subject to the secondary treatment standards established for POTWs found in 40 CFR § 133.102. The secondary treatment standards include an average weekly limit of 45 mg/L and an average monthly limit of 30 mg/L for BOD_5 and TSS. A multiplier of two was applied to the average monthly limit to determine the maximum daily limit. As a result, the following TBELs apply to the facility and are subject to water quality analysis and BPJ where applicable.

Parameter	Limit	
BOD_5	60 mg/L	Maximum Daily
pH	6.0 – 8.5 SU	
TSS	60 mg/L	Maximum Daily

BOD_5, COD, TOC Rationale

Per 40 CFR. § 122.44(a), §125.3, and BPJ, the permit sets a TBEL of 60 mg/L for BOD_5. Monitoring for COD and TOC is not required since BOD_5 is typically used to establish the concentration of organic matter in wastewater samples.

pH Rationale

The District's water quality criterion for pH is more stringent than the TBEL. As a result, the permit sets the effluent limit for pH to be between 6.0 – 8.5 SU using the water quality criteria. pH is discussed in further detail below.

TSS Rationale

The District's water quality standards do not contain a numeric water quality criterion for TSS. Per 40

CFR § 122.44(a), §125.3, and BPJ, the permit sets a TBEL of 60 mg/L for TSS; however, as previously discussed with DOEE, the TSS level in the Pool is not expected to exceed 25 mg/L. Therefore, an effluent limit of 25 mg/L is required in the permit.

WATER QUALITY-BASED EFFLUENT LIMITATIONS (WQBELS)

40 CFR § 122.44(d)(1)(i) requires limitations to be established in permits to control all pollutants or pollutant parameters that are or may be discharged at a level that *cause*, have the *reasonable potential to cause*, or *contribute* to an excursion above any state water quality standard, including state narrative criteria. If there is reasonable potential (RP), WQBELs are developed. The WQBELs in this permit are as stringent as necessary to ensure that the designated uses of the Tidal Basin are protected, maintained, and/or attained. EPA applied the District's WQS to assess the effluent for RP to cause or contribute to an exceedance of the District's WQS. Since the discharge is intermittent and a relatively shorter exposure time is representative of the LMRP discharge, the acute water quality criteria were used for the constituents listed in Table 1of Section 21-1104 in the District's Water Quality Standards.

EPA used its *Technical Support Document for Water Quality-based Toxics Control* (TSD) approach (EPA-505-2-90-001, March 1991) to determine if the parameters that have a water quality criterion have RP to cause or contribute to an exceedance of the criterion. Section 1105.7(f) of the District's Water Quality Standards allows for a mixing zone not more than one-third of the width of the receiving waterbody. This was applied to the RP analysis. Monitoring and reporting are required for parameters that do not have RP if the maximum reported effluent concentration exceeds the respective influent concentration.

Mass-balance Equation: $Q_sC_s + Q_dC_d = Q_rC_r \rightarrow C_r = \frac{Q_sC_s + Q_dC_{d+}}{Q_r}$

where:
Q_s = critical upstream receiving water flow
C_s = critical receiving water background concentration
Q_d = critical effluent flow
C_d = critical effluent concentration
Q_r = critical downstream receiving water flow
C_r = downstream (expected) receiving water concentration

Therefore, Q_s = Tidal Basin flow

Receiving Stream Flow (Tidal Basin)	
Surface Area (square meters)	415,000
Tidal Range (meters per 12 hours)	0.85
Flow (cubic meters per 12 hours)	352,750
Flow (cubic meters per hour)	29,395.83
Flow (gallons per hour)	7,765,556.08
Flow (gallons per minute (gpm))	**129,425.93**
1/3 Flow (gpm)	**43, 142**

C_s = intake concentration of parameter
Q_d = LMRP discharge flow

Reflecting Pool Discharge Flow	
Approximate Amount of Water Discharged to Tidal Basin (gallons per day)	4,000,000
Duration of Discharge (days)	4
Reflecting Pool Discharge Flow (gpm)	**694.44**

C_d = critical effluent concentration

40 CFR § 122.44(d)(1)(ii) requires the permitting authority to use procedures which account for, among other things, the variability of the pollutant or pollutant parameter in the effluent when determining RP. EPA assumes that the maximum observed effluent concentration does not represent the "critical" condition because the limited data set does not account for day-to-day variability in effluent quality. Therefore, EPA will use the TSD approach, which consists of a statistical analysis that assumes effluent data follow a lognormal distribution, to determine the critical effluent concentration (C_d).

To calculate C_d, EPA first determined the RP multiplying factor based on the probability basis and coefficient of variation, and then multiplied the factor times the maximum observed effluent concentration.

Confidence Level & Probability Basis	95%
Coefficient of Variation	0.6
Reasonable Potential Multiplying Factor	**6.2**

$Q_r = Q_s + Q_d$
C_r = downstream (expected) receiving water concentration

	Copper	Manganese	Nickel	Zinc
Q_s (gpm)	43,141.98	43,141.98	43,141.98	43,141.98
C_s (µg/L)	3	4.9	0.64	19
Q_d (gpm)	694.444	694.444	694.444	694.444
C_d (µg/L)	18.6	30.38	3.968	117.8
Q_r (gpm)	43,836.42	43,836.42	43,836.42	43,836.42
C_r (µg/L)	**3.247**	**5.304**	**0.693**	**20.565**

Parameter	Effluent (Pool) Concentration (µg/L)	Intake (Tidal Basin) Concentration (µg/L)	Monitoring Required (Y/N)
Copper	3.0	1.1	Y
Manganese	4.9	13	N
Nickel	0.64	0.83	N
Zinc	19	17	Y

Parameter	Downstream (Expected) Receiving Water Concentration (µg/L)	Acute Criterion (CMC) (µg/L)	Chronic Criterion (CCC) (µg/L)	WQBEL Required (Y/N)
Copper[1]	3.247	17.2	11.21	N
Manganese[2]	5.304	100	50	N
Nickel[3]	0.693	584.6	64.93	N
Zinc[3]	20.565	146.35	147.55	N

Copper, Manganese, Nickel, and Zinc Rationale

Data submitted with the application show that the maximum reported effluent concentrations exceed the respective influent concentrations for copper and zinc. Therefore, monitoring and reporting is required for copper and zinc in this permit. Data submitted with the application show that the maximum reported effluent concentrations do not exceed the respective influent concentrations for nickel and manganese. Therefore, monitoring are not required for nickel and manganese.

Parameter	Date Sampled	Effluent (Pool) Concentration	Intake (Tidal Basin) Concentration	Acute Criterion	WQBEL Required (Y/N)
Chlorophyll a [µg/L]	01/12/2015	0.0		25	N
Dissolved Oxygen (DO) [mg/L]	09/01/2012	9.9 – 12.5	10.6	5.0	Y
	10/03/2012	12.5 – 14.3	7.2 – 10.1		
	01/02/2014	14.71 – 16.19	12.49 – 13.44		
	01/12/2015	15.47 – 32.16	36.02 – 36.55		
E. coli [MPN/100 ml]	01/12/2015	<1	10	410	N
Fecal Coliform [MPN/100 ml]	01/12/2015	<2	8		N
Oil & Grease [mg/L]	01/12/2015	ND	ND	10	N
pH [standard units (SU)]	09/01/2012	9.25 – 9.32	8.88	6.0 - 8.5	Y
	10/03/2012	9.13 – 9.48	8.2 – 8.7		
	01/02/2014	7.86 – 8.08	6.48 – 7.36		
	01/12/2015	5.97 – 6.53	7.82 – 7.83		
	05/04/2016	5.97 – 9.61			

[1] The acute criterion (Criterion Maximum Concentration or CMC) for this metal is dependent on the hardness of the receiving water (i.e., the Basin), which is 130 mg/L.

[2] There is no CCC (Criterion Continuous Concentration) or CMC (Criterion Maximum Concentration) value for manganese in the DC WQS. Therefore, EPA's National Recommended WQC for human health was used (publication year 1993).

Parameter	Date Sampled	Effluent (Pool) Concentration	Intake (Tidal Basin) Concentration	Acute Criterion	WQBEL Required (Y/N)
Temperature [°C]	09/01/2012	20.8 – 21.3	22	(1) 32.2 and (2) 2.8 above ambient	N
	10/03/2012	23.4 – 25.7	22.7 – 23.5		
	01/02/2014	1.27 – 4.58	4.38 – 4.57		
	01/12/2015	1.77 – 3.40	0.52		
	05/04/2016	3.22			
Total Residual Chlorine (TRC) [µg/L]	No data submitted			19	Y
Turbidity[3] [NTU]	01/02/2014	-6.2 – 4.7	5.4 – 22.4	20 above ambient	Y
	01/12/2015	0.79	3.2		

Chlorophyll *a* Rationale

Data submitted with the application show that the discharge does not have RP to cause or contribute to an excursion above the District's water quality criterion of 25 µg/L. However, due to the variability of the presence of algae in the Pool, monitoring and reporting are required for chlorophyll *a* in this permit.

Dissolved Oxygen (DO) Rationale

Data submitted with the application show that the discharge does not have RP to cause or contribute to an excursion above the District's water quality criterion of 5.0 mg/L. However, as previously discussed in the facility's discharge monitoring plan and report, DO is a major parameter of concern and the DO level in the Basin should remain above 5.0 mg/L. Therefore, a water quality based effluent limit of 5.0 mg/L is required in this permit. In addition, due to the variability of DO and since the Basin is a dynamic system, the permittee must also monitor and report DO in the Basin. Also, the permit contains additional requirements regarding the DO level in the Basin.

Fecal Coliform and *E. coli* Rationale

The District's 2006 Water Quality Standards discontinued the fecal coliform criteria on December 31, 2007. The District replaced the fecal coliform water quality criteria with the *E. coli* criteria. Data submitted with the application show that the discharge does not have reasonable potential to cause or contribute to an excursion above the District's water quality criterion of 126 MPN/ 100 mL. However, since waterfowl may still contribute bacteria to the discharge, and to continue to characterize *E. coli* in the discharge, for evaluation at the permit reissuance, monitoring and reporting are required for *E. coli* in this permit.

Oil & Grease Rationale

Data submitted with the application show that the discharge does not have RP to cause or contribute to an excursion above the District's water quality criterion of 10.0 mg/L. However, water treatment operations at the facility may involve the use of pumps and other types of pumping equipment that have the potential to introduce oil and grease into the discharge and therefore, monitoring and reporting are required for oil & grease in this permit.

[3] The application states that there was a meter malfunction due to lack of depth at the edge of the Pool and the -6.2 effluent result was caused by that malfunction. 6.8 NTU was the lowest baseline turbidity measurement.

Temperature Rationale
Data submitted with the application show that the discharge does not have RP to cause or contribute to an excursion above the District's water quality criteria of 32.2°C and 2.8°C above ambient. However, since the data show that the temperature fluctuates and to provide context for other parameters, monitoring and reporting are required for temperature in this permit.

Total Residual Chlorine (TRC) Rationale
Total residual chlorine data was not submitted with the application. The discharge may have RP to cause or contribute to an excursion above the District's water quality criterion of 19 µg/L since the permittee fills the Pool with potable water and may use certain chemicals to spot treat algae blooms. Therefore, an effluent limit of 0.019 mg/L is required for total residual chlorine in the permit.

Turbidity Rationale
Data submitted with the application show that the turbidity in the discharge approached but did not exceed the District's water quality criteria of 20 NTU above ambient. As previously discussed with DOEE, turbidity is a major parameter of concern due to the possibility of the discharge disturbing sediments at the bottom of the Basin. Per DOEE, the permittee must comply with the District's water quality criterion for turbidity. Therefore, the permittee must monitor turbidity in the Basin and in the Pool and the turbidity must not exceed 20 NTU above ambient.

Barium, Magnesium, Molybdenum, and Strontium Rationale
Data submitted with the application show that the maximum reported effluent concentrations do not exceed the respective influent concentrations for barium and magnesium. Therefore, monitoring is not required in this permit for barium and magnesium. Data submitted with the application show that the maximum reported effluent concentration is the same as the respective influent concentration for strontium. Although strontium is a naturally occurring, hazardous substance, monitoring is not required since the Pool is filled with potable water from the District's water system and strontium is listed as present in the District's water system. Monitoring and reporting are required for molybdenum since the maximum reported effluent concentrations exceed the respective influent concentration.

Nitrogen (Nitrate-Nitrite, Total, Total Kjeldahl) and Phosphorus (Total) Rationale
The Pool's algae issues indicate an excess of nutrients, particularly nitrogen and phosphorus, and the presence of algae may affect the concentration of other parameters in the Pool and the Basin. Since there is no numeric water quality criteria for these nutrients, monitoring and reporting are required for total nitrogen and total phosphorus to continue to characterize the parameters in the discharge, for evaluation at the permit reissuance.

TMDL

The Lincoln Memorial Reflecting Pool discharges to the Tidal Basin, which eventually mixes with the Washington Ship Channel and ultimately the Potomac River. There are Total Maximum Daily Loads (TMDLs) for each of the three waterbodies affected by this discharge. Additionally, this discharge occurs within the Chesapeake Bay watershed and therefore affected by the Chesapeake Bay TMDL. The Bay TMDL is addressed separately below. In addition to the Bay TMDL, EPA has approved or established TMDLs for the following pollutants in the Tidal Basin which are discussed in more detail below:

- *E. coli* (approved December 2004, revised July 2014)
- Total PCBs (approved December 2004)

- pH (approved December 2010)

Tidal Basin and Middle Potomac River TMDL

E. coli

The bacteria TMDL in the Tidal Basin was approved in 2004 and revised in 2014 to include a translation of the bacteria loads from fecal coliform to *E. coli*. This translator allows the bacteria loads to be consistent with the District's water quality standard. There is not a wasteload allocation given to the Reflecting Pool discharge since there was not an NPDES permit at the time the TMDL was developed. Since the Reflecting Pool was discharging to the sanitary system this discharge was likely included in their allocation. Data submitted with the Reflecting Pool application show their discharge has elevated levels of *E. coli*. Therefore, monitoring for *E. coli* will continue throughout the permit term to inform future revisions of the TMDL and to ensure that the facility does not contribute to the existing impairment of the Basin

pH

pH impairment is attributed to discharges from the combined sewer system and the separate storm sewer system. Page 6 of the TMDL states "the goal of the TMDL is to achieve a pH concentration that allows for meeting of water quality standards." Monitoring requirements for pH are included in this permit renewal to maintain consistency with the District's water quality standard and to ensure the discharge does not contribute to the existing pH impairment in the Tidal Basin.

PCB

There is no wasteload allocation assigned to this facility. Additionally, PCB is not a parameter of concern for the Reflecting Pool, therefore, monitoring for PCBs will not be required in this permit.

Washington Ship Channel TMDLs

E. coli

Since the Tidal Basin flows to the Washington Ship Channel, the TMDL for *E. coli* in the Washington Ship Channel was considered for this discharge. The bacteria TMDL was approved in 2004 and revised in 2014 to include a translation of the bacteria loads from fecal coliform to *E. coli*. This translator allows the bacteria loads to be consistent with the District's water quality standard. There is not a wasteload allocation given to the Reflecting Pool discharge. Monitoring for *E. coli* will occur throughout the permit term to inform future revisions of the TMDL and to ensure that the facility does not contribute to the existing impairment of the Basin.

pH

Since the Tidal Basin flows to the Washington Ship Channel, the TMDL for pH in the Washington Ship Channel was considered for this discharge. Impairment is attributed to discharges from the combined sewer system and the separate storm sewer system. Page 6 of the TMDL states "the goal of the TMDL is to achieve a pH concentration that allows for meeting of water quality standards." Monitoring requirements for pH are included in this permit renewal to maintain consistency with the District's water quality standard and to ensure the discharge does not contribute to the existing pH impairment in the Tidal Basin.

Chesapeake Bay TMDL

TN and TP

At the time the Chesapeake Bay TMDL ("Bay TMDL") was approved, the Reflecting Pool was discharging its pool water to the sanitary system, stormwater system, or the Tidal Basin with EPA approval. Therefore, during TMDL development, the flow from the Reflecting Pool was captured either in the MS4 and or CSO discharge, or captured in the margin of safety. EPA believes this facility is not expected to be significant source of TN and TP since the Pool water is either potable water or treated water from the Tidal Basin. Monitoring for TN and TP is included in the permit to verify this discharge does not contribute to any exceedances to the aggregate Bay TMDL WLA. Monitoring for these parameters will also inform the District's Phase III WIPs.

Sediment

Section 4.5.2 of the Bay TMDL *Sources of Nitrogen, Phosphorus, and Sediment To The Chesapeake Bay – Industrial Discharge Facilities* states that discharges from industrial facilities represent a *de minimis* source of sediment. As previously discussed in the fact sheet, the TSS level in the Pool should not exceed 25 mg/L. A monthly average limit of 25mg/L of TSS is imposed in the permit based on discussions with DOEE. This limit is consistent with the assumptions of the Bay TMDL for TSS for non-significant dischargers.

ENDANGERED SPECIES PROTECTION

EPA requested an official species list from the U.S. Fish and Wildlife Service (USFWS) using their *Information for Planning and Consultation* tool found on their website at: https://ecos.fws.gov/ipac to determine if there are any federally listed threatened or endangered species or their designated critical habitat(s) that will be affected by the Lincoln Memorial Reflecting Pool discharge. The USFWS has indicated that there is a total of zero threatened, endangered, or candidate species located at the Lincoln Memorial Reflecting Pool project area as defined using the IPaC tool.

Per the requirements under Section 7 of the Endangered Species Act (50 CFR. Part 402; 16 U.S.C. § 1536(c)) EPA submitted a Biological Evaluation and *Finding of No Effect* to the USFWS and The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). NOAA concurred with EPA's conclusion that this permit is not likely to adversely affect any ESA-listed species or designated critical habitat under their jurisdiction.

NATIONAL HISTORIC PRESERVATION ACT OF 1966

Consultation with the District of Columbia State Historic Preservation Officer (DC SHPO) in accordance with Section 106 of the National Historic Preservation Act and its implementing regulation at 36 CFR. Part 800 has resulted in a determination that the activities required by the permit will have no adverse effect on historic properties.

ANTI-BACKSLIDING PROVISIONS

This is a new permit, therefore, backsliding does not apply.

ANTIDEGRADATION STATEMENT

The Tidal Basin, Middle Potomac River, and Washington Ship Channel are Tier 1 protection waters. Title 21 Chapter 1102.1 of the District's Water Quality Standard Antidegradation Policy defines a Tier 1 water as "Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." The proposed permit contains water quality-based and technology-based effluent limits for pollutants as required by the approved District of Columbia Water Quality Standards and approved TMDLs. Based on this information, EPA concludes that the discharges from this facility will not downgrade the water quality of the Tidal Basin.