U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STATEMENT OF BASIS

PERMITTEE:	United States Department of Energy
FACILITY NAME AND ADDRESS:	National Laboratory of the Rockies – South Table Mountain 15013 Denver West Parkway Golden, CO 80401
PERMIT NUMBER:	COR-042009
RESPONSIBLE OFFICIAL:	Derek G. Passarelli, Director, Golden Field Office, Department of Energy (303) 275-4700 derek.passarelli@ee.doe.gov
FACILITY CONTACT:	Matthew Blevins, Director, Environmental, Safety and Health, Department of Energy (720) 962- 7261 Matthew.blevins@ee.doe.gov
PERMIT TYPE:	Federal Facility, Municipal Separate Storm Sewer System, Permit Renewal
FACILITY LOCATION:	15013 Denver West Parkway Golden, Colorado 80401 Latitude 39.740907, Longitude -105.168594
DISCHARGE LOCATION(S):	Multiple outfalls to Lena Gulch
RECEIVING WATERS:	Lena Gulch

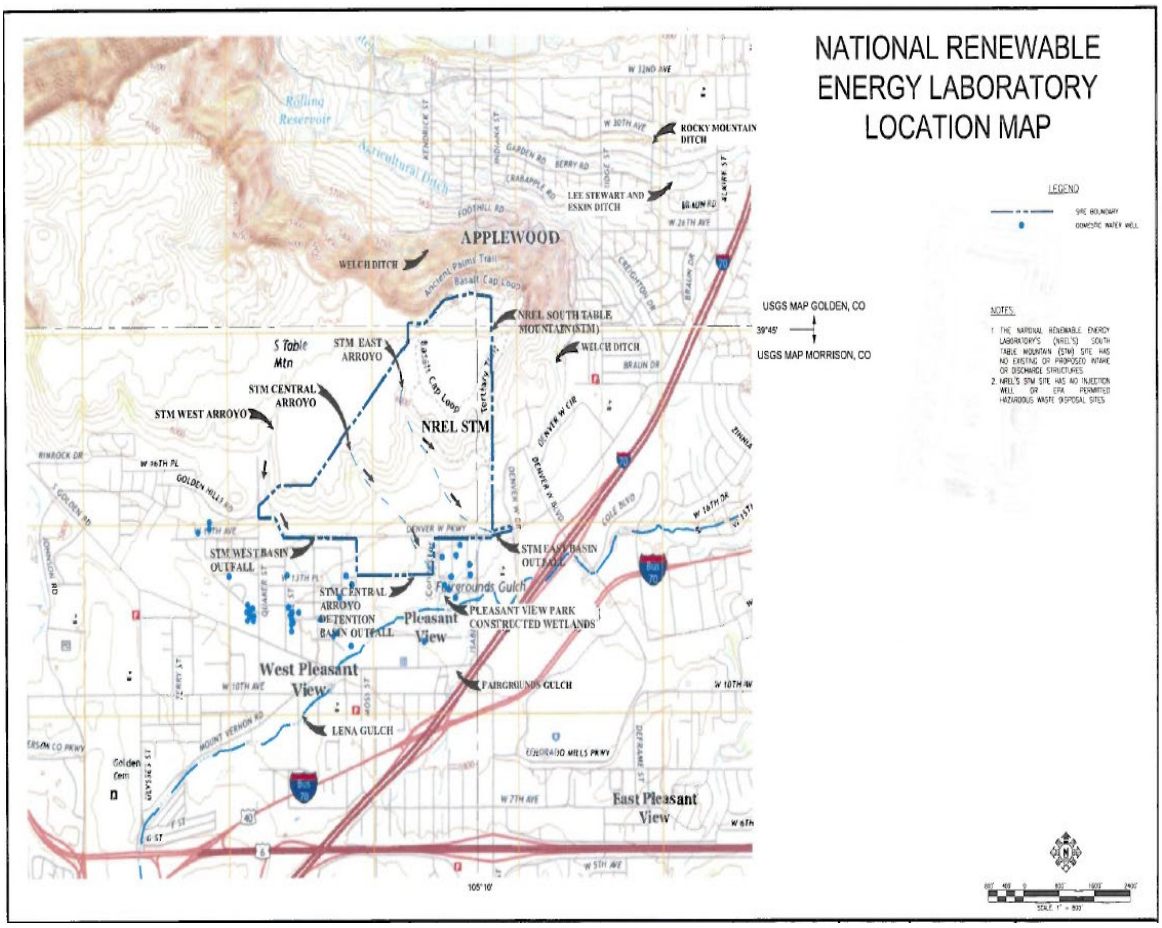
1. INTRODUCTION

This statement of basis (SoB) is for the issuance of a NPDES permit to the U.S. Department of Energy (DOE), for the National Laboratory of the Rockies – South Table Mountain (NLR) municipal separate storm sewer systems (MS4). The permit establishes discharge limitations for any discharge of municipal stormwater from NLR. The SoB explains the nature of the discharges, and the EPA's decisions for limiting the pollutants in the stormwater, as well as the regulatory and technical basis for these decisions. The EPA Region 8 is the permitting authority for Colorado federal facilities.

2. FACILITY BACKGROUND INFORMATION

The December 1, 2025, DOE officially renamed the National Renewable Energy Laboratory (NREL) to the NLR. NLR is the principal research laboratory for the DOE's Office of Energy Efficiency and Renewable Energy (EERE). EERE's mission is to develop renewable energy and energy efficiency technologies and practices, advance related science and engineering, and transfer knowledge and innovations to address the nation's energy and environmental goals. At NLR's site, research relates to the following major technologies: advanced manufacturing, bioenergy, building efficiency, chemistry and nanoscience, computational sciences, concentrating solar power, energy system integration and grid modernization, geothermal energy, hydro and fuel cells, and photovoltaics and solar power. The site is 0.51 square miles (327 acres) in land size. Only a small fraction of the site (0.02 square miles or 15 acres) in the northwest corner of the site does not drain to the MS4. This Permit does not include the 350 acres at the National Wind Technology Center located 25 miles north in Louisville, Colorado. This site only has a limited number of full-time employees (less than 10). See Figure 1 for an overview of the NLR MS4.

Figure 1 - Overview of NLR Campus (previously named NREL)



3. WATER QUALITY CONSIDERATIONS

Description of Receiving Water

There are three drainages or arroyos (named East, Middle, and West) on the NLR campus. See Figure 1. The East arroyo/drainage at the NLR site outfalls directly to Lena Gulch via a large 54" culvert. The Middle arroyo/drainage outfalls at the southeast corner of the site to a short mitigation wetland channel which then discharges directly to Lena Gulch. The West arroyo/drainage leaves NLR and continues in a southeasterly direction until its confluence with Lena Gulch.

Lena Gulch is a tributary of Clear Creek with its confluence near 41st Avenue and Kipling Street in Wheat Ridge, Colorado. The Lena Gulch drainage originates in Apex Gulch and Jackson Gulch on the southeast slopes of Lookout Mountain in Golden. From Lookout Mountain, the stream flows approximately 11 miles to its confluence with Clear Creek. Lena Gulch drains 13.3 square miles at its confluence with Clear Creek. The natural stream is rugged and steep in the foothills where Jackson Gulch and Apex Gulch join to form Lena Gulch. Channel slopes in the upper basin exceed 400 feet per mile. In the central portion of the basin, above Maple Grove Reservoir, slopes average

80 feet per mile. Clear Creek is a tributary of the South Platte River. Therefore, Lena Gulch, a tributary to Clear Creek, lies within the larger South Platte River watershed. Lena Gulch is part of stream segment COSPCL16A which is classified as the "Mainstem of Lena Gulch including all tributaries and wetlands from its source to the inlet of Maple Grove Reservoir." Colorado Regulation #38 Stream Classification and Water Quality Standards - Clear Creek Basin are listed below in Tables 1a, 1b and 1c.

Table 1a - Colorado Regulation #38 Stream Classification and Physical and Biological Water Quality Standards - Lena Gulch

(COSPCL16A-Designation UP; Classifications: Water Supply, Agriculture, Aq Life Warm 2, Recreation E)

	DM	**MWAT**
Temperature °C	WS-II	WS-II
[Chronicity]	Acute	Chronic
D.O. (mg/l)	--	5.0
pH	6.5-9.0	--
Chlorophyll a (mg/m^2)	--	TVS
E. coli (per 100mL)	--	126

Table 1b - Colorado Regulation #38 Stream Classification and Inorganic Water Quality Standards - Lena Gulch

(COSPCL16A-Designation UP; Classifications: Water Supply, Agriculture, Aq Life Warm 2, Recreation E)

	Acute (mg/L)	**Chronic (mg/L)**
Ammonia	TVS	TVS
Boron	--	0.75
Chloride	--	250
Chlorine	0.019	0.011
Cyanide	0.005	--
Nitrate	10	--
Nitrite	--	0.05
Phosphorus	--	TVS
Sulfate	--	WS
Sulfide	--	0.002

Table 1c - Colorado Regulation #38 Stream Classification and Metals Water Quality Standards - Lena Gulch

(COSPCL16A-Designation UP; Classifications: Water Supply, Agriculture, Aq Life Warm 2, Recreation E)

	Acute (ug/L)	**Chronic (ug/L)**
Arsenic	340	--
Arsenic(T)	--	0.02-10[A]
Cadmium	TVS	TVS
Cadmium(T)	5.0	--

Chromium III	--	TVS
Chromium III(T)	50	--
Chromium VI	TVS	TVS
Copper	TVS	TVS
Iron	--	WS
Iron(T)	--	1000
Lead	TVS	TVS
Lead(T)	50	--
Manganese	TVS	TVS/WS
Mercury(T)	--	0.01
Molybdenum(T)	--	150
Nickel	--	100
Selenium	TVS	TVS
Silver	TVS	TVS
Uranium	Varies*	Varies*
Zinc	TVS	TVS

*Uranium (acute) = See 38.5(3) for details
*Uranium (chronic) = See 38.5(3) for details

A review of the Colorado's Regulation #93 303(d) Listings of Impaired and Monitoring and Evaluation (M&E) List showed that Lena Gulch (stream segment COSPCL16a) is categorized as having insufficient available data and/or information to make a use support determination for manganese. See Table 2 below for more details. The stream segment is not 303(d) listed (listed as impaired) for any water quality impairments. The EPA did not require any specific pollutant monitoring in this Permit, because there are no known activities that would contribute manganese (i.e., it is not a known pollutant of concern). For more information on limitations and other monitoring requirements, see Sections 5 and 6.

Table 2 - CO Regulation #93 303(d) Listings of Impaired and Monitoring and Evaluation (M&E) List – Lena Gulch

(COSPCL16a-A. Mainstem of Lena Gulch including all tributaries and wetlands from its source to the inlet of Maple Grove Resevoir)

Affected Use	**Analyte**	**Category/List[2]**	**Priority**
Water Supply Use	Manganese (Dissolved)	3b. – M&E list	NA

For this Permit, the EPA determined that NLR's stormwater discharges to a receiving water that is not listed as impaired for any pollutants, and therefore will not require pollutant analytical monitoring. Since Lena Gulch is not impaired, there is no total maximum daily load (TMDL) and no waste load allocation (WLA) for this stormwater discharge.

4. PERMIT HISTORY

The current Permit was developed by the EPA, signed on October 26, 2018 and was effective on December 1, 2018 with an expiration date of November 30, 2023. DOE submitted the Permit application on June 13, 2023. The EPA deemed the Permit application on time and complete and issued an administrative extension letter to DOE on June 20, 2023. All of the limits and conditions of the administratively extended Permit remain fully effective until the renewal Permit is issued and effective. According to records maintained for this facility, this is the first Permit renewal for DOE.

5. MAJOR CHANGES FROM PREVIOUS PERMIT

The Phase II stormwater rule was challenged in petitions for review filed by environmental groups, municipal organizations, and industry groups, resulting in a partial remand of the rule. Environmental Defense Center v. U.S. Environmental Protection Agency, 344 F.3d. 832 (9th Cir. 2003) (EDC). The court remanded the Phase II rule's provisions for small MS4 general permits because they lacked procedures for permitting authority review and public notice and the opportunity to request a hearing on Notices of Intent (NOIs) for authorization to discharge under a general permit. In response to the court's remand, EPA revised its Phase II stormwater rules for Phase II permits in 2016 (i.e. Remand Rule). One of the new requirements is that all Phase II MS4 permits have "clear, specific and measurable" conditions. Therefore, all terms and conditions have changed to be "clear, specific and measurable" to comply with the Remand Rule. Additionally, the standard for reducing pollutants to the "maximum extent practicable" (MEP) has been revised (as required by the Remand Rule) to be determined by the Permitting authority (EPA) versus the Permittee in this Permit.

Additionally, EPA added nutrient management terms and conditions. In October 2017, the Water Quality Control Commission made changes to Colorado's nutrient management control regulations (Colorado Regulations 85 and 31.17). In response to changing regulations and water quality, both the State of Colorado and EPA have added nutrient provisions to all re-issued Phase II MS4 permits.

This Permit requires NLR's stormwater program to be fully implemented as a progression from the previous Permit (which was the first Permit issued for DOE for NLR), which mostly required the development of NLR's stormwater program.

6. PROPOSED PERMIT LIMITATIONS

6.1. Technology-Based Limitations

NPDES permit coverage for these discharges is required in accordance with the 1987 Amendments to the Clean Water Act (CWA) and final EPA regulations for Phase II stormwater discharges (64 FR 68722, December 8, 1999). The 1987 Water Quality Act (WQA) amended the Clean Water Act (CWA) by adding section 402(p) which requires that NPDES permits be issued for various categories of stormwater discharges. Section 402(p)(2) requires permits for the following five categories of stormwater discharges:

1. Discharges permitted prior to February 4, 1987;

2. Discharges associated with industrial activity;

3. Discharges from large municipal separate storm sewer systems (MS4s) (systems serving a population of 250,000 or more);

4. Discharges from medium MS4s (systems serving a population of 100,000 or more, but less than 250,000); and

5. Discharges judged by the permitting authority to be significant sources of pollutants or which contribute to a violation of a water quality standard.

The five categories listed above are generally referred to as Phase I of the stormwater program. In Colorado, Phase I MS4 permits have been issued by the Colorado Department of Public Health and Environment (CDPHE) to the cities of Denver, Lakewood, Aurora, Colorado Springs, and the highway system operated by the Colorado Department of Transportation within those cities. In Colorado, NPDES permitting authority for Federal Facilities has not been delegated to CDPHE. Therefore, EPA maintains NPDES primacy for those facilities.

Phase II stormwater regulations were promulgated by EPA on December 8, 1999 (64 FR 68722). These regulations set forth the additional categories of discharges to be permitted and the requirements of the program. The additional stormwater discharges to be permitted include:

1. Small MS4s (NLR is considered a small Phase II MS4);

2. Small construction sites (i.e., sites which disturb one to five acres); and

3. Industrial facilities owned or operated by small municipalities which were temporarily exempted from the Phase I requirements in accordance with the provisions of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.

The 1987 CWA amendments clarified the fact that industrial storm water discharges are subject to the best available technology (BAT) / best conventional technology (BCT) requirements of the CWA, and applicable water quality standards. For MS4s, the CWA specifies a new technology-related level of control for pollutants in the discharges - control to the maximum extent practicable (MEP). However, the CWA is silent on the issue of compliance with water quality standards for MS4 discharges. In September 1999, the Ninth Circuit Court addressed this issue and ruled that water quality standards compliance by MS4s is discretionary on the part of the permitting authority (Defenders of Wildlife v. Browner, No. 98-71080).

The technology-based limits for this Permit are largely based on the implementation of a Stormwater Management Plan (SWMP) which addresses six minimum measures. The SWMP and additional measures included in this Permit are the means through which NLR complies with the CWA's requirement to control pollutants in the discharges to the MEP and how the EPA exercises its discretion to address compliance with the water quality related provisions of the CWA. The EPA considers MEP to be an iterative process in which an initial SWMP is proposed and then periodically upgraded as new best management practices (BMPs) are developed or new information becomes available concerning the effectiveness of existing BMPs (64 FR 68754). The Phase II regulations at 40 CFR §122.34 require the following six minimum pollution control measures to be included in the SWMP:

1. Public Education and Outreach on Storm Water Impacts;

2. Public Involvement/Participation;

3. Illicit Discharge Detection and Elimination;

4. Construction Site Storm Water Runoff Control;

5. Post-Construction Storm Water Management in New Development and Redevelopment; and

6. Pollution Prevention/Good Housekeeping for Municipal Operations.

The regulations specify required elements for each minimum measure and also include guidance which provides additional information recommended for an adequate program. The Permit includes nearly verbatim the required program elements for each minimum measure. The Permit also includes a number of additional requirements for each minimum measure which were derived from the recommendations of the regulations, recommendations from the State of Colorado, and from findings recognized during the NLR inspections which could affect the implementation of an effective stormwater program.

The technology-based limits and a rationale for these limits are in Part 2 of the Permit.

6.2 Limitations on Permit Coverage

In Part 1.4 of the Permit, there are limitations on the types of discharges that are covered under this Permit. Parts 1.4.3 and 1.4.4 are provided to note that stormwater discharges from regulated construction activities and stormwater discharges from regulated industrial activities are not authorized under this Permit. These types of activities need to be authorized under a separate permit.

40 CFR 122.34(b)(3)(ii) identifies non-stormwater discharges allowed by regulated small MS4 permits. Part 1.4 of this Permit includes several additional types of non-stormwater discharges which are authorized under this Permit unless the Permittee determines they are significant contributors of pollutants. These additional types of non-stormwater discharges are allowed in Part 1.4 because there is a prohibition on using chemicals (e.g., power washing runoff when no chemicals are used). If the Permittee identifies any of the categories as a significant contributor of pollutants, the Permittee must include the category as an illicit discharge.

7. MONITORING REQUIREMENTS

The Phase II stormwater regulations at 40 CFR §122.34(g) require that small MS4s evaluate program compliance, the appropriateness of the BMPs in their SWMPs and progress towards meeting their measurable goals. Monitoring and assessment activities are included as part of each of the minimum measures of the Permit.

7.1 TMDLs

For this Permit, the EPA determined that the stream NLR discharges to (i.e., Lena Gulch) is not listed as impaired for any pollutants and therefore will not require pollutant analytical monitoring. Since Lena Gulch is not impaired, there is no total maximum daily load (TMDL) and no appropriate waste load allocation (WLA) for this stormwater discharge.

7.2 Master Planning

Master Planning is not applicable because EPA as NLR is a small federal campus with mostly indoor activities such as laboratories and research facilities. NLR is also surrounded by the City of Golden which is a Phase II MS4 permitted by the State of Colorado.

7.3 PFAS

Based on the EPA's December 5, 2022 guidance memorandum, "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs" the applicability of PFAS monitoring is recommended for industry categories known or suspected to discharge PFAS as identified in the PFAS Strategic Roadmap. These include industry categories such as the following: organic chemicals, plastics & synthetic fibers (OCPSF); metal finishing; electroplating; electric and electronic components; landfills; pulp, paper and paperboard; leather tanning & finishing; plastics molding & forming; textile mills; paint formulating, and airports. Additionally, the memorandum indicates PFAS monitoring and/or BMPs could be appropriate for remediation sites, chemical manufacturing not covered by OCPSF, military bases, and PFAS-containing firefighting foams for stormwater permits. NLR is not identified as one of the aforementioned industries, is not known to receive wastes from the aforementioned industries and is not known to use PFAS-containing firefighting foams. Therefore, no PFAS monitoring or PFAS-related BMP implementation has been included in this Permit.

If sources of PFAS or PFAS containing chemicals are identified with potential to discharge into the MS4, the Permit may be reopened (per Part 7.15, Reopener Provision, of the Permit) to include PFAS monitoring and/or BMPs to confirm and/or address PFAS discharge concerns in alignment with the recommendations in EPA's December 5, 2022 guidance memorandum, "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs."

8. REPORTING REQUIRMENTS

8.1 Annual Report

40 CFR 122.34(d)(3) requires small MS4s to submit reports to the EPA. Annual reports are required to allow for regular evaluation of the MS4 program. See Part 5.2 of the Permit for specifics on annual reporting requirements.

9. ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, "listed" species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical ("critical habitat"). See 16 U.S.C. § 1536(a)(2), 50 CFR Part 402. When a Federal agency's action "may affect" a protected species, that agency is required to consult

with the FWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR § 402.14(a)).

The U. S. Fish and Wildlife Information for Planning and Conservation (IPaC) website program was accessed on January 20, 2026 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species for the area surrounding NLR. The IPaC Trust Resource Report findings are provided below. The designated area utilized was taken directly from the IPaC system and covers 1.3 square miles surrounding NLR.

Table 3 - IPaC Federally-listed Threatened and Endangered Species for NLR

Species	**Scientific Name**	**Status**	**EPA Determination**
Piping Plover	*Charadrius melodus*	T	NE - No water depletions are anticipated from this facility or its discharges in the South Platte River system where supporting habitat may be present.
Whooping Crane	*Grus americana*	E	NE - No water depletions are anticipated in the South Platte River system where supporting habitat may be present.
Pallid Sturgeon	*Scaphirhynchus albus*	E	NE - No water depletions are anticipated in the South Platte River system where supporting habitat may be present.
Monarch Butterfly	*Danaus plexippus*	PT	NE - This species does not have federal protections at this time. The Permitting action will not jeopardize the continued existence of the species
Suckley's Cuckoo Bumblebee	*Bombus suckleyi*	PE	NE - FWS considers this species to be extirpated from Colorado.
Western Regal Fritillary	*Argynnis idalia occidentalis*	PT	NE - Virtually restricted to remnant native prairies and pastures that are not present at NLR.

Ute Ladies'-tresses Orchid	*Spiranthes diluvialis*	T	NE - Ute ladies'-tresses orchid are known to occur in Jefferson County. NLR periodically conducts surveys for rare plants focusing on species that are federally protected, state protected, or otherwise considered imperiled or declining. In 2010, surveys at the NLR campus were conducted and no protected species were found.
Western Prairie Fringed Orchid	*Platanthera praeclara*	T	NE - No water depletions are anticipated in the South Platte River system where supporting habitat may be present.

Abbreviations: T = Threatened, E = Endangered, PE= Proposed Endangered, PT = Proposed Threatened, NE = No Effect

Biological Evaluation

The justification to support the determination for the species are as follows. Based on the IPaC information generated, no critical habitat occurs within the NLR property and the Permitting action will not jeopardize the continued existence of listed species. EPA's determination for these species is "No Effect" due to the absence of critical habitat for all species. Additionally, the discharge is expected to contain typical MS4 pollutants such as sediment, nutrients, bacteria, heavy metals, oil and grease, but the Permit requires BMPs to control/limit spills and illicit discharges; and reduce runoff by post-construction standards. A separate NPDES permit is required for construction activity, and the Permit does not allow for the discharge of toxics in toxic amounts. Therefore, aquatic species that are listed in Table 3 are protected.

Based on the IPaC information, NLR's 2014 EA, and informal consultation with the FWS Colorado field office representative on September 29, 2025, EPA determined the Permitting action to have "No Effect." During public notice period, a copy of the proposed Permit and statement of basis will be provided to FWS.

10. NATIONAL HISTORIC PRESERVATION ACT REQURIEMENTS

Section 106 of the National Historic Preservation Act of 1966 (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The implementing regulations of the NHPA can be found at 36 CFR Part 800. An "undertaking," as defined at 36 CFR § 800.16(y), includes projects requiring a federal permit. Therefore, the issuance of this Permit constitutes an undertaking. The first step in this analysis is to consider whether the undertaking is a type of activity that has the potential to cause effects on historic properties. See 36 CFR § 800.3(a). Permit renewals where there is no new construction are generally not the type of action with the potential to cause effects on historic properties.

11. MISCELLANEOUS

The effective date of the Permit and the Permit expiration date will be determined upon issuance of the Permit. This NPDES Permit shall be effective for a fixed term not to exceed 5 years.

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