

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

PERMITTEE:	U.S. Department of Energy (DOE)
FACILITY NAME AND ADDRESS:	National Renewable Energy Laboratory - South Table Mountain 15013 Denver West Parkway Golden, Colorado 80401
PERMIT NUMBER:	COR-042009
RESPONSIBLE OFFICIAL:	Derek G. Passarelli, Director, Golden Field Office, DOE
FACILITY CONTACT:	Lori Gray, Acting Director, Environmental, Safety, Health Operations, DOE
PERMIT TYPE:	Municipal Separate Storm Sewer System (MS4), New Permit
FACILITY LOCATION:	15013 Denver West Parkway Golden, Colorado 80401

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 Renewable Energy Laboratory (NREL) - South Table Mountain (STM) Municipal Separate Storm Sewer System (MS4). The Permit establishes discharge limitations for any discharge of municipal stormwater from the NREL-STM MS4. 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.

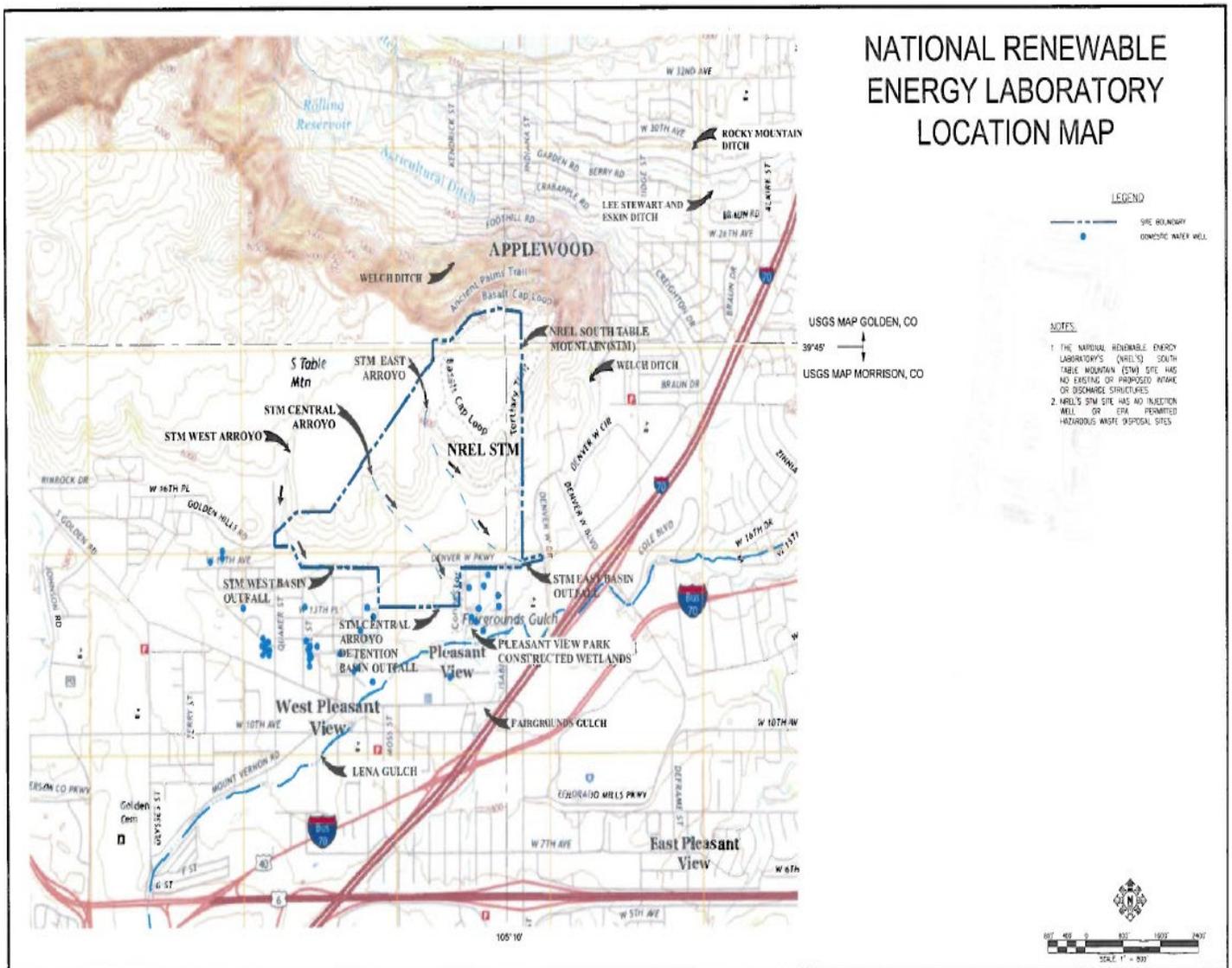
The EPA Region 8 is the Permitting authority for Colorado federal facilities and provides implementation of federal and state environmental laws within Colorado.

2. FACILITY BACKGROUND INFORMATION

2.1. Facility Description

The National Renewable Energy Laboratory is the principal research laboratory for the Department of Energy's (DOE) 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 NREL's STM 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 NREL-STM MS4.



Overview of NREL-STM - Figure 1

3. WATER QUALITY CONSIDERATIONS

3.1. Description of Receiving Water

There are three drainages or arroyos (named East, Middle, and West) on the NREL-STM campus. See Figure 1. The East arroyo/drainage at the NREL-STM 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 the STM site 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 Clear Creek from Youngfield Street in Wheat Ridge, Colorado, to the confluence with the South Platte River.” Colorado Regulation #38 Stream Classification and Water Quality Standards - Clear Creek Basin are listed below in Table 1.

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

16a. Mainstem of Lena Gulch including all tributaries and wetlands from its source to the inlet of Maple Grove Reservoir.						
COSPCL16A Classifications		Physical and Biological			Metals (ug/L)	
Designation		DM	MWAT		acute	chronic
UP	Agriculture					
	Aq Life Warm 2					
	Recreation E					
	Water Supply					
Qualifiers:						
Other:	Temperature °C	WS-II	WS-II	Aluminum	---	---
	D.O. (mg/L)	---	5.0	Arsenic	340	---
	pH	6.5 - 9.0	---	Arsenic(T)	---	0.02-10 ^A
	chlorophyll a (mg/m ²)	---	150	Beryllium	---	---
	E. Coli (per 100 mL)	---	126	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	---	0.01(t)
				Molybdenum(T)	---	150
				Nickel	TVS	TVS
				Nickel(T)	---	100
				Selenium	TVS	TVS
			Silver	TVS	TVS	
			Uranium	---	---	
			Zinc	TVS	TVS	

All metals are dissolved unless otherwise noted.
 T = total recoverable
 t = total
 tr = trout

D.O. = dissolved oxygen
 DM = daily maximum
 MWAT = maximum weekly average temperature
 See 38.6 for details on TVS, TVS(tr), WS, temperature standards.

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 listed for M&E 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 and is only listed for M&E. Therefore, the EPA did not require any specific pollutant monitoring in this Permit. For more information on monitoring and limitations, see Sections 5 and 6.

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

COSPCL16a	16a. Mainstem of Lena Gulch including all tributaries and wetlands from its source to the inlet of Maple Grove Reservoir.		
Listed portion: ¹	COSPCL16a_A Mainstem of Lena Gulch including all tributaries and wetlands from its source to the inlet of Maple Grove Reservoir.		
Affected Use	Analyte	Category / List ²	Priority
Water Supply Use	Manganese (Dissolved)	3b. - M&E list	NA

For this permit, the EPA determined that stream NREL-STM discharges (Lena Gulch) to is not listed as impaired for any pollutants, and there 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.

4. PERMIT HISTORY

On December 8, 1999, (64 FR 68721) the EPA published National Pollutant Discharge Elimination System (NPDES) regulations to address stormwater discharges from small municipal separate storm sewer systems (MS4s). According to these regulations (known as the “Phase II” stormwater rule), the Department of Energy was required to submit a Permit application to the EPA, for stormwater discharges from the NREL-STM MS4.

The stormwater Phase II rule applies to operators of regulated small municipal storm sewer systems. According to 40 C.F.R. 122.26(b)(16), “small municipal separate storm sewer means all separate storm sewers that are:

- (i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes...;
- (ii) Not defined as “large” or “medium” municipal separate storm sewer systems...;
- (iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.”

Operators of small MS4s that are located within “urbanized areas” as defined by the US Census Bureau are automatically designated as regulated small MS4s and are required to apply for Permit coverage for stormwater discharges from the MS4.

Based on the December 1999 final Phase II regulations, the EPA has determined that the NREL-STM is an automatically designated small MS4 requiring Permit coverage. This determination was made based on the location of the facility within the Golden (Denver) urbanized area as defined by the 2010 US Census.

This is the first Permit issued to DOE for its NREL-STM campus. The current maximum daily user population of the STM site is 1,627 full-time employees. As allowed by the Phase II regulations, the Permittee will have the first Permit term to develop a Stormwater Management Program including a Stormwater Management Plan (SWMP). By the end of this permit term, the Permittee is required to have a written and complete SWMP that will be fully implemented and enforceable.

5. PERMIT LIMITATIONS

5.1. Technology Based Quality Based Effluent 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, the 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 (NREL-STM 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 amendments specified a 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 effluent limits for this Permit are largely based on the implementation of a SWMP which addresses six minimum measures. The SWMP and additional measures included in this Permit are the means through which DOE complies with the CWA's requirement to control pollutants in the discharges to the maximum extent practicable (MEP) and how the EPA discretionary addresses 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 BMPs are developed or new information becomes available concerning the effectiveness of existing BMPs (64 FR 68754). The Phase II regulations at 40 C.F.R. §122.34 require the following six minimum pollution control measures to be included in the SWMP:

1. Public Education and Outreach;
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 provisions for each minimum measure which were derived from the recommendations of the regulations.

A summary of technology based effluent limits and a rationale for these limits follows:

General Requirements

The Permittee must develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy Colorado's water quality standards. The SWMP must include management practices; control techniques, system design, engineering methods, and other provisions the EPA determines appropriate for the control of pollutants in discharges from the MS4.

As mentioned above, the Permittee must fully implement and enforce the SWMP, including meeting its measurable goals, within 5 years after the date of authorization under this Permit. Implementation and enforcement should take place in approximate equal intervals throughout the Permit and progress will be tracked in the annual report.

The SWMP must include each of the six minimum control measures listed above. For each of the minimum control measures the SWMP must include the BMPs that will be implemented and the measurable goals for each of the BMPs including, as appropriate, the months and years in which the required actions will be started and completed, and the frequency of the action.

The Permittee is allowed flexibility during the first Permit term per the Phase II regulations, however, the Permittee must ensure that it is taking the necessary steps towards developing a Stormwater Management Program that is fully implemented and enforceable at the end of the Permit term. The EPA will monitor the progress of the development, implementation, and enforcement of the Stormwater Management Program via annual report.

Reviewing and Updating Storm Water Management Plan

The Permittee must conduct an annual review of the SWMP in conjunction with preparation of the annual report.

The Permittee may change the SWMP during the life of the Permit according to the following procedures:

- Changes adding (but not subtracting or replacing) components, controls, goals, or requirements to the SWMP may be made at any time upon written notification to the EPA;
- Requests to change or replace an ineffective or unfeasible BMP or goal, with an alternate BMP, may be made at any time. Unless denied by the EPA, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented 60 days from the date the request is submitted to the EPA. Modification requests must include the following:

- An analysis of why the BMP or goal is ineffective or infeasible (including cost prohibitive);
 - Expectations on the effectiveness of the replacement BMP or goal; and
 - An analysis of why the replacement BMP or goal is expected to better achieve the SWMP requirements.
- The EPA may request documentation of the minimum control measures as required by the SWMP. The EPA may review and subsequently notify the Permittee that changes to the SWMP are necessary to:
- Address discharges from the MS4 that are causing or contributing to water quality impacts;
 - Include more stringent requirements deemed necessary by the EPA to comply with water quality standards, Endangered Species Act (ESA) related requirements, and/or other goals and requirements of the Clean Water Act; and/or
 - Address the SWMP requirements of this Permit, if the EPA determines that the Permittee's current SWMP does not meet Permit requirements.

If the EPA notifies the Permittee that changes are necessary to ensure that stormwater discharges are not causing or contributing to a violation of water quality standards, the notification will offer the Permittee an opportunity to propose alternative program changes to meet the objectives of the requested modification. Following this opportunity, the Permittee must implement any required changes according to the schedule set by the EPA.

Public Education and Outreach

Under this control measure the permittee must:

- The Permittee must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.
- The SWMP must document the following information related to public education and outreach;
- A description of the public education program and outreach activities;
 - A description of the methods and frequency of disseminating information;
 - A description of the target audiences and target pollutants and sources that the Permittee will address in the program and how they were selected;
 - An estimation of the number of people expected to be reached by the program over the Permit term;
 - A list of measurable goals for the public education and outreach programs;

- Dates by which the Permittee will achieve each of the measurable goals; and
- The name or title of the person(s) responsible for coordination and implementation of the storm water public education and outreach program.

Public Involvement/Participation

Under this control measure the permittee must:

- The Permittee must comply with applicable State and local public notice requirements when implementing a public involvement/participation program.
- The Permittee is encouraged to make the SWMP and Permit application available to the public, including, but not limited to, the operator of any MS4 affected by the Permittee's MS4 facility.
- The SWMP must document the following information related to public involvement/participation:
 - A description of the plan to involve the public in the development and implementation of the SWMP;
 - The types of activities for public involvement that the program will include and the target audiences;
 - A list of measurable goals for the public involvement/participation program;
 - Dates by which the Permittee will achieve each of the measurable goals; and
 - The name or title of the person(s) responsible for coordination and implementation of the storm water public education and outreach program.

Illicit Discharge Detection and Elimination

An illicit discharge is any discharge to a MS4 that is not composed entirely of stormwater. Exceptions are described in Part 1.4.2 of the Permit.

Under this control measure the permittee must:

- Develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4;
- Develop, if not already completed, a storm sewer system map showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- Effectively prohibit, through ordinance or other regulatory mechanism available under the legal authorities of the small MS4, non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions;

- Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the system;
- Inform public employees of hazards associated with illegal discharges and improper disposal of waste; and
- Address the categories of non-storm water discharges or flows listed in Part 1.4.2 of the Permit. Only those discharges identified by the Permittee as significant contributors of pollutants to the small MS4 need to be addressed as illicit discharges. The Permittee must document in the SWMP any local controls or conditions placed on the discharges. All other non-storm water discharges must be prohibited according to Part 1.4 and Part 2.5.3 of the Permit.
- The SWMP must document the following information related to illicit discharge detection and elimination:
 - A description of procedures to identify priority areas. This includes areas suspected of having illicit connections (e.g., areas with older sanitary sewer lines);
 - A description of procedures for identifying illicit discharges. The Permittee must consider using dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources; or ambient sampling to locate impacted reaches; or dye or smoke testing;
 - A description of procedures for locating and removing the source of the illicit discharge;
 - A description or citation of the established ordinance or other regulatory mechanism used to prohibit illicit discharges into the MS4. If the Permittee needs to develop this mechanism, describe the plan and a schedule to do so;
 - A description of the enforcement procedures and jurisdiction;
 - A description of the methods for informing/training public employees about illicit discharges;
 - A description of the methods for informing the public of hazards associated with illegal discharges and improper disposal of waste;
 - A list of measurable goals for the illicit discharge detection and elimination program;
 - Dates by which the Permittee will achieve each of the measurable goals; and
 - The name or title of the person(s) responsible for coordination and implementation of the illicit discharge detection and elimination program.

Construction Site Stormwater Runoff Control

Under this control measure the permittee must:

- Develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre including construction activities disturbing less than one acre if it is part of a larger common plan of development or sale.
- Use an ordinance or other regulatory mechanism available under the legal authorities of the small MS4 to require erosion and sediment controls and sanctions to ensure compliance;
- Develop requirements for construction site operators to implement appropriate erosion and sediment control best management (BMP) practices;
- Develop requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
- Develop procedures for site plan review which incorporate consideration of potential water quality impacts;
- Develop procedures for receipt and consideration of information submitted by the public; and
- Develop procedures for site inspection and enforcement of control measures.
- The SWMP must document the following information related to construction site runoff control:
 - A description or citation of the established ordinance or other regulatory mechanism used to require erosion and sediment controls at construction sites. If the Permittee needs to develop the required regulatory mechanism, describe the plan and a schedule to do so;
 - A description of the sanctions and enforcement mechanisms (e.g. stop work order) the Permittee will use to ensure compliance;
 - A description of the requirements for construction site operators to implement appropriate erosion and sediment control BMPs and control waste at construction sites that may cause adverse impacts to water quality. Such waste includes discarded building materials, concrete truck washouts, chemicals, litter, and sanitary waste;
 - A description of the procedures for site plan review, including the review of pre-construction site plans, which incorporate consideration of potential water quality impacts. Describe the procedures and the rationale for how certain sites will be identified for site plan review. Describe the estimated number and percentage of sites that will have pre-construction site plans reviewed;
 - A description of the procedures for receipt and consideration of information submitted by the public;
 - A description of the procedures for site inspection, including how sites will be prioritized for inspection;

- A list of measurable goals for the construction site runoff control program;
- Dates by which the Permittee will achieve each of the measurable goals; and
- The name or title of the person(s) responsible for coordination and implementation of the construction site runoff control program.

Post-construction Stormwater Management for New Development and Redevelopment

Under this control measure the permittee must:

- Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the small MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts;
- Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community;
- Use an ordinance or other regulatory mechanism available under the legal authorities of the small MS4 to address post-construction runoff from new development and redevelopment projects; and
- Ensure adequate long-term operation and maintenance of BMPs by following, at a minimum, manufacture's specifications for clean-out and routine maintenance.
- The SWMP must document the following information related to post-construction storm water management:
 - A description of the structural and non-structural BMPs that will be used to manage post-construction runoff from new development and redevelopment projects within the MS4. Also, list any specific priority areas for this program;
 - An explanation of the design features of the chosen BMPs that are intended to minimize water quality impacts;
 - A description or citation of the established ordinance or other regulatory mechanism used to address post-construction runoff control. If the Permittee needs to develop the required regulatory mechanism, describe the plan and a schedule to do so;
 - A description of how long-term operation and maintenance of the selected BMPs will be performed;
 - A list of measurable goals for the post-construction runoff control program;
 - Dates by which the Permittee will achieve each of the measurable goals; and
 - The name or title of the person(s) responsible for coordination and implementation of the

post-construction storm water management program.

Pollution Prevention and Good Housekeeping for Municipal Operations

Under this control measure the permittee must:

- Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from NREL-STM operations. The program must include an employee training component;
- As part of maintenance activities and employee training, address the following activities at a minimum, as applicable: park and open space maintenance, fleet and building maintenance, new construction and land disturbances, storm water system maintenance, and snow disposal;
- The SWMP must document the following information related to pollution prevention/good housekeeping:
 - A description of the operation and maintenance program to prevent or reduce pollutant runoff from the NREL-STM operations. The description must include:
 - Maintenance activities, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to the MS4;
 - Employee training program used to prevent and reduce storm water pollution;
 - Controls for reducing or eliminating the discharge of pollutants from streets, roads, parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations, and snow disposal areas operated by the MS4;
 - Procedures for the proper disposal of waste removed from the MS4 and the MS4's operations including dredge spoil, accumulated sediments, floatables, and other debris;
 - Procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices;
 - A list of the NREL-STM operations that are impacted by this operation and maintenance program;

- A list of industrial facilities owned or operated, if any, by the Permittee that ultimately discharge to the small MS4. The list must include industrial facilities that are subject to EPA's Multi-Sector General Permit (MSGP) or individual NPDES Permits for discharges of storm water associated with industrial activity. Include the EPA Permit number or a copy of the Industrial NOI form for each facility;
- A list of measurable goals for the pollution prevention and good housekeeping program;
- Dates by which the Permittee will achieve each of the measurable goals; and
- The name or title of the person(s) responsible for coordination and implementation of the pollution prevention and good housekeeping program.

6. MONITORING REQUIREMENTS

6.1. Monitoring

The Phase II stormwater regulations at 40 C.F.R. §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.

The Permittee must conduct an annual review of the SWMP in conjunction with preparation of the annual report and the EPA will review the annual report to ensure progress toward complete and full development, implementation and enforcement of the Stormwater Management Program at the end of the Permit term.

7. REPORTING REQUIREMENTS

Annual Report: The Permittee must submit an annual report to the EPA for each year of the Permit term. The first report is due April 1, 2020, and must cover the activities during the period beginning on the effective date of the Permit through December 31, 2019. Each subsequent annual report is due on April 1 of each year following 2020 for the remainder of the permit term. Reports must be signed in accordance with the signatory requirements in Part 5.7 of the Permit. Reports may be posted on the EPA Region 8 website. Therefore, parts of the annual report which cannot be publicly available should be marked as "confidential" or "for official use only." Reports must be submitted to the EPA at the following address:

U.S. EPA, Region 8
Attention: Stormwater Coordinator
1595 Wynkoop Street (Mail Code: 8WP-CWW)
Denver, Colorado 80202-1129

8. ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act (ESA) 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 C.F.R. 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 C.F.R. § 402.14(a)).

The U. S. Fish and Wildlife Information for Planning and Conservation (IPaC) website program was utilized to determine federally-Listed Endangered, Threatened, Proposed and Candidate Species for NREL-STEM Permit. The IPaC Trust Resource Report findings are provided below for the NREL-STM:

FWS IPaC List for NREL-STM -Table 3

Species	Scientific Name	Status
North American Wolverine	<i>Gulo luscus</i>	PT
Canada Lynx	<i>Lynx canadensis</i>	T
Least Tern	<i>Sternula antillarum</i>	E
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T
Piping Plover	<i>Charadrius melodus</i>	T
Whooping Crane	<i>Grus americana</i>	E
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	E
Colorado Butterfly Plant	<i>Gaura neomexicana</i> var. <i>coloradensis</i>	T
Ute Ladies’-tresses Orchid	<i>Spiranthes diluvialis</i>	T
Western Prairie Fringed Orchid	<i>Platanthera praeclara</i>	T

Abbreviations: T = Threatened, E = Endangered, PT = Proposed Threatened

8.1. Conclusion

In December 2014, a site-wide Environmental Assessment was conducted of NREL-STM. According to the final EA, there are currently no wildlife species listed in accordance with the ESA as threatened, endangered, or a candidate for listing, that could potentially occur within the STM

campus or be impacted by project activities. All the listed species were the same in the 2014 EA as were on July 1, 2018 except the North American Wolverine (*Gulo luscus*) which is currently listed as proposed threatened. See Table 4 below for more details.

List of Federally Endangered and Threatened Species from 2014 EA - Table 4

Common Name (Scientific Name)	Status	Potential Occurrence	Reason for Exclusion
Piping plover (<i>Charadrius melodus</i>)	FT	NPO ¹	No water depletions are anticipated.
Whooping crane (<i>Grus americana</i>)	FE	NPO ¹	No water depletions are anticipated.
Least tern (<i>Sterna antillarum</i>)	FE	NPO ¹	No water depletions are anticipated.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	FT	NPO	Preferred habitats of late-seral, closed canopy forest or steep-sided moist canyons do not exist in the NREL-STM campus.
Canada lynx (<i>Lynx Canadensis</i>)	FT	NPO	The STM campus is not within a Lynx Analysis Unit; no suitable habitat occurs within the NREL-STM campus.
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	FT	NPO ¹	No water depletions are anticipated.

¹Species not present in or near analysis area, but water depletions may affect these downstream species. Abbreviations: FT – Federal Threatened; FE – Federal Endangered; NPO = No potential occurrence.

Additionally, the EA reported that for the Ute ladies'-tresses orchid (*Spiranthes diluvialis*) and the Colorado Butterfly Plant (*Gaura neomexicana var. coloradensis*) are known to occur in Jefferson County. NREL 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 NREL-STM campus were conducted and no protected species were found. Colorado water flow depletion presents the potential to impact the western prairie fringed orchid (*Platanthera praeclara*) in the central and lower Platte River in Nebraska. This Permit authorizes the discharge or stormwater from NREL-STM and is not related to water flow depletion but rather authorizes the discharge of stormwater. Lastly, there is no habitat for the North American Wolverine (*Gulo luscus*) at NREL-STM.

Based upon the information in the EA prepared by DOE in consultation with FWS, EPA finds that this Permit action will have “No Effect” on the species listed in Table 4. During public notice period, a copy of the proposed permit and statement of basis were provided to FWS. The EPA did not receive any response/comments from FWS during the public notice period.

9. NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The U.S. National Park

Service (U.S. NPS) National Register of Historic Places Focus Database was utilized to determine and evaluate resources of concern at NREL-STM.

The National Register of Historic Places (NRHP) is the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

A list of the architectural resources on the NREL-STM campus from the 2014 EA are listed below in Table 5.

Architectural Resources Identified on the NREL-STM Campus - Table 5

Site #	Description	NRHP Status	Comment
5JF145	Camp George West	Listed on the NRHP	Most of what remains is along South Golden Road. Part of the NREL-STM site is within the Camp George West Historic District but no features exist.
5JF145.66	Firing Range Lines	Contributing to the Camp George West Historic District	The 300-yard firing line is on NREL-STM property. The 500-yard and 600-yard firing lines are located on Jefferson County Open Space property that is managed by the Pleasant View Metropolitan District. The 300-yard line was relocated in 2011 to the NREL-STM stormwater detention basin. The 300-yard line is not on the NRHP but contributes to the Camp George West Historic District significant. In 2011, DOE was allowed to relocate it to the NREL-STM site where it exists as an architectural feature but is not on the NRHP.
5JF145.68	Low Rock Walls	Contributing to the Camp George West Historic District	Both historic features have been removed. This is not the NREL-STM campus.
5JF842	Amphitheater and Footbridge	Listed on the NRHP	Located on the NREL-STM campus.

5JF843	Ammunition Igloo	Listed on the NRHP	Located on the NREL-STM campus.
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Based upon the information provided there are two listed historic properties on the NREL-STM campus with features existing (Amphitheater and Footbridge, and Ammunition Igloo). The EPA does not anticipate any impacts on these listed historic properties or any of the above cultural resources due to this Permit issuance and stormwater discharge related activities from the MS4. This Permit does not authorize any disturbance or construction in the areas of historic properties or cultural resources. A copy of the proposed permit was sent the State Historic Preservation Office (SHPO) for their review during public notice period. The EPA did not receive any response/comments from the SHPO during the public notice period.

10. MISCELLANEOUS

This NPDES Permit is effective for a fixed term not to exceed 5 years.

Permit Writer: Amy Clark, EPA Region 8, 303-312-7014

ADDENDUM:

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The proposed permit and statement of basis were public noticed in the Denver Post on July 25, 2018. The EPA received no comments.