

Statement of Basis

FACILITY: Bureau of Prisons, Federal Corrections Institution (FCI)
Englewood Municipal Separate Storm Sewer System (MS4)

PERMIT NO.: CO-R042005

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LOCATION: 39°38'32.14"N 105° 5'43.15"W

Facility Background Information:

The Federal Correctional Institution (FCI) Englewood is a low security prison facility housing male offenders. The institution also has an administrative detention center and an adjacent satellite prison camp for minimum security male offenders. The Federal Bureau of Prisons (FBOP) owns and operates the FCI Englewood. This facility is considered a Federal Facility from which the discharges from the Municipal Separate Storm Sewer System (MS4) are permitted by EPA under the Clean Water Act (CWA).

FCI Englewood is located 15 miles southwest of Denver, off U.S. Highway 285 and South Kipling Street. The facility is located in Littleton, CO, but is referred to as "FCI Englewood." The facility encompasses 321 acres, houses 798 inmates and has 10 staff residences within the MS4. The facility also employs 292 staff workers.

FCI Englewood is considered a non-traditional small Phase II MS4. It contains commercial (i.e., prison, warehouses, etc.), light industrial, residential and recreational (yards, ponds, open space) activities. Most of the commercial and industrial activities within the MS4 are controlled under tight security by the FBOP. The only exceptions are the non-prison recreation and housing areas that support prison staff and their families.

The administrative and management staff supporting the MS4 permit implementation consists of one part-time program manager. The municipal activities within the MS4 consist of maintenance and operation of the following: municipal facilities, utilities, roads and grounds, administrative

facilities and fleet maintenance. The FCI Englewood facility's discharge of stormwater from the MS4 is currently permitted by the EPA. The program implementing the MS4 permit is primarily managed by a Safety Manager, and implementation of the facility's Storm Water Management Program (SWMP) is shared with other departments, including Facility Operations. Some of the shared responsibilities include administration, planning, contract oversight and engineering/construction. Legal authorities for the program are obtained through the use of policies, contractual obligations and human resource actions. Annual reports summarizing the previous calendar year's MS4 program activities have been submitted to the EPA for review.



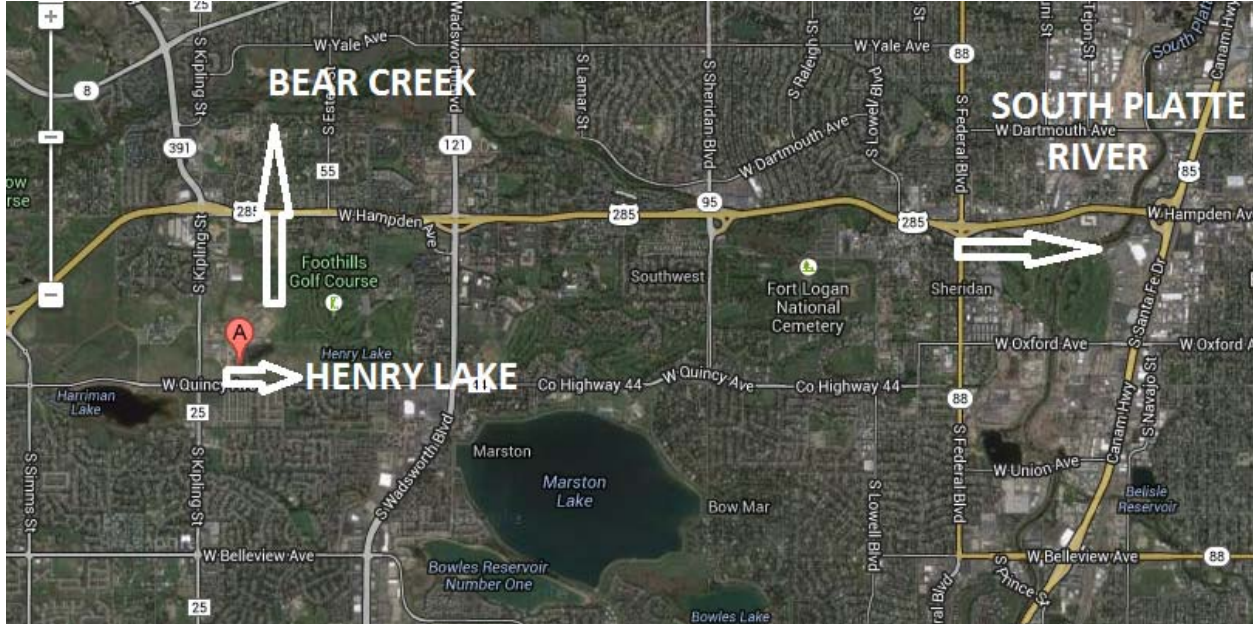
Receiving Waters:

Stormwater discharging from the facility's MS4 drains off-site into the Lakewood Municipal Separate Storm Sewer System (MS4), Henry Lake, and Bear Creek, all of which ultimately drain into the South Platte River. The facility's stormwater infrastructure consists of storm sewer drainage structures; with one main discharge location on the southeastern portion of the property.

Water quality standards approved by the Colorado Department of Public Health and Environment for the receiving waters from this facility are attributed to Segment ID "COSPUS156c" and are described as follows:

COSPUS16c, described as: "All tributaries to the South Platte River, including all lakes,

reservoirs and wetlands, from the outlet of Chatfield Reservoir, to a point immediately below the confluence with Big Dry Creek, except for specific listings in the sub-basins of the South Platte River, and in Segments 16a, 16b, 16d, 16e, 16f, 16g, 17a, 17b, and 17c.” Uses: Aquatic Life Warm 2, Recreation E, Agriculture.



Water Quality Impairments

The receiving water, COSPUS16c, was listed as impaired for *E. coli* for the summer months (May-Oct) in the Colorado Section 303(d) List of Impaired Waters and Monitoring and Evaluation List (Colorado Control Regulation #93). At the time of this permit issuance, a TMDL to address this water quality impairment has not been developed. If there is a Total Maximum Daily Load (TMDL) issued for this water which includes a wasteload allocation or specific control measure for municipal point source discharges, it will be included in the permit upon reissuance.

Prior to development of a TMDL, it is important to evaluate relative contributions of *E. coli* from the FCI Englewood MS4 which could cause or contribute to a violation of the water quality impairment. This permit requires FCI Englewood to create a plan to evaluate contributions of *E. coli* entering receiving waters with the following permit conditions:

Monitoring of Stormwater Runoff. The permittee must:

- Prior to December 31, 2015, define monitoring locations and create a plan to evaluate contributions of *E. coli* entering receiving waters from the FCI Englewood MS4. This shall include monitoring of stormwater discharges during the months of May-October to determine potential contributions to the summertime impairment of waterbody

segment COSPUS16c as defined by the Colorado Department of Public Health and Environment, Water Quality Control Division. All monitoring must be conducted according to test procedures approved under 40 CFR Part 136; and

- Monitor stormwater discharges for E. coli contributions consistent with the developed plan.

It is anticipated that FCI Englewood is not a significant contributor to the E. coli impairment due to the relatively low number of potential sources of E. coli contamination coming from the FCI Englewood property. This permit requires the permittee to develop an E. coli monitoring strategy as part of the first year of the permit term. This allows the permittee the opportunity to develop strategies which may go beyond monitoring of a single outfall during wet weather conditions and strategies which address the loading from other sources (e.g., irrigation canals) not regulated by this permit and monitoring locations which allow for the evaluation of relative pollutant loadings to areas with commingled flows from multiple MS4s such as those to Henry Lake.

It is important that Colorado Department of Public Health and Environment have enough information to ascertain whether FCI Englewood will need a numeric wasteload allocation as part of the development of a TMDL. Therefore, the EPA reserves the right to assess the E. coli monitoring plan and provide modifications to ensure that it maintains representative sampling sufficient to evaluate the potential contributions of E. coli loading from the FCI Englewood MS4 to the summertime impairment of waterbody segment COSPUS16c.

EPA conducted an inspection of FCI Englewood during August of 2011. During the inspection, EPA's review of FCI's four internal outfalls revealed evidence of a potentially significant illicit discharge. The discharging outfall was located to the East of the facility and was reportedly connected to the storm drain system in the prison, and FCI's on-site representatives stated that the water was continuously flowing. Given the topography of the area, semi-arid climate, and low level of directly connected impervious areas draining to stormwater outfalls relative to the neighboring cities of Lakewood and Englewood, it is anticipated that this discharge contributes the bulk of the pollutant loading from the facility in discharges to the South Platte River. Since the discovery of this illicit discharge, it has been investigated and sampled. Based on the sampling data provided, it is likely that this is not an illicit discharge from an industrial or commercial area, nor is it a discharge from a septic system cross-connection. It is likely that this may be a diversion of groundwater, but at the time of this permit issuance, further testing is being performed to determine the potential sources and/or pollutant loading potential from the discharge.

Endangered Species

Coverage under this permit is available only if the stormwater discharges, allowable non-storm water discharges, and discharge-related activities are not likely to:

- Jeopardize the continued existence of any species that are listed as endangered or threatened

(“listed”) under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is designated as critical under the ESA (“critical habitat”); or

- Cause a prohibited "take" of endangered or threatened species (as defined under Section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.

“Discharge-related activities” include: activities which cause, contribute to, or result in stormwater point source pollutant discharges; and measures to control stormwater discharges, including the citing, construction, and operation of Best Management Practices (BMPs) to control, reduce, or prevent stormwater pollution.

Federal Bureau of Prisons, working with the U.S. Fish and Wild Life Service (FWS) and the State of Colorado, certified in its Notice of Intent (NOI) for permit coverage under the 2003 Region 8 MS4 General Permit, that stormwater discharges and discharge-related activities from FCI Englewood, would not jeopardize the continued existence of any species that are listed as endangered or threatened (“listed”) under the ESA or result in the adverse modification or destruction of habitat that is designated as critical under the ESA (“critical habitat”). FCI is required to evaluate the potential effects of every new construction project through a formal impact analysis. These analyses require that all new projects are designed and maintained such that the existence of listed species cannot be jeopardized and critical habitat cannot be adversely modified or destroyed.

Historic Properties

Coverage under this permit is available only if the stormwater discharges, allowable non-stormwater discharges, and discharge-related activities are:

- Not likely to affect a property that is listed or is eligible for listing on the National Register of Historic Places as maintained by the Secretary of the Interior; or
- In compliance with a written agreement with the State Historic Preservation Officer (SHPO) that outlines all measures the MS4 operator will undertake to mitigate or prevent adverse effect to the historic property.

In its initial NOI MS4 permit coverage in 2003, Bureau of Prisons, working with State Historic Preservation Officers (SHPOs), certified, that stormwater discharges and discharge-related activities FCI Englewood would not affect a property that is listed or is eligible for listing on the National Register of Historic Places as maintained by the Secretary of the Interior. FCI is required to evaluate the potential effects of every new construction project through a formal impact analysis. These analyses require that all new projects are designed and maintained such that properties listed or eligible for listing on the National Register of Historic Places are not affected.

Limitations on Permit Coverage

In Part 1.3 of the permit, there are limitations on the types of discharges that are covered under this permit. Parts 1.3.3 and 1.3.4 are provided to note that stormwater discharges from regulated construction activities (i.e., those disturbing equal to or greater than one acre) and stormwater discharges from regulated industrial activities (i.e., those defined as regulated by their industrial classification) are not authorized under this permit. These types of activities need to be authorized under a separate permit. The language limiting the MS4 permit from covering these types of discharges is as follows:

Stormwater Discharges Associated with Industrial Activity. This permit does not authorize stormwater discharges associated with industrial activity as defined in 40 CFR § 122.26(b)(14)(i)-(ix) and (xi).

Stormwater Discharges Associated with Construction Activity. This permit does not authorize stormwater discharges associated with construction activity as defined in 40 CFR § 122.26(b)(14)(x) or 40 CFR § 122.26(b)(15).

Part 1.2 of the permit defines several types of non-stormwater discharges which are authorized under this permit unless the permittee determines they are significant contributors of pollutants. If the permittee identifies any of the following categories as a significant contributor of pollutants, the permittee must include the category as an illicit discharge. The non-stormwater discharges authorized under this permit include:

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensate;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges;
- Street wash water;
- Power washing where no chemicals are used;
- Roof drains;
- Fire hydrant flushings;
- Emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to minimize the impact of such discharges; and

- Discharges or flows from fire fighting activities occurring during emergency situations.

Two types of discharges which are not authorized as allowable non-stormwater discharges include:

- Discharges authorized by a separate NPDES permit; and
- Discharges in compliance with instructions of an On-Scene-Coordinator pursuant to 40 CFR Part 300 or 33 CFR 153.10(e);

In the past five years, there have been frequent questions from Colorado Federal Facilities about the applicability of the MS4 permit for covering these two types of discharges. These were not added to the list of allowable non-stormwater discharges as it is not necessary to independently address these in MS4 permits. If a discharge is already authorized by a separate NPDES permit (e.g., treatment plant discharges and groundwater remediation pump-and-treat discharges), then it is not necessary to separately authorize it through the MS4 permit. This is also true of the aforementioned discharges in compliance with the instructions of an On-Scene Coordinator, as these discharges are exempted from NPDES permitting consistent with regulations at 40 CFR 122.3(d).

This discussion is included in this permit fact sheet for clarity on frequently asked questions about permit applicability. During 2012 and 2013, wild fires encroached on several Federal Facility MS4s in Colorado, and there were frequent questions on how remediation associated with U.S. Forest Service Burned Area Emergency Response (BAER) integrated into the MS4 program. If those activities (i.e., those authorized under a BAER Plan) are exempted from NPDES permitting consistent with regulations at 40 CFR 122.3(d), then it is not necessary for them to be specifically authorized in the Facility's MS4 permit.

Federal Facility MS4s are still encouraged to evaluate these types of discharges and their impact to the MS4. While not specifically required under this permit, a holistic MS4 program would include management practices and control measures specifically tailored to minimize impacts such as erosive potential and streambank degradation from permitted outfalls and remediation efforts authorized under a separate permit or authorized in compliance with the instructions of an On-Scene-Coordinator.

Effluent Limitations

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

1. Certain Small MS4s, including storm sewer systems at military bases, large hospital or prison complexes, and other storm sewer systems similar to those in municipalities (see 40 CFR § 122.26(b)(16)(iii))
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.

Section 402(p)(3) establishes permit requirements for industrial stormwater discharges and municipal stormwater discharges. Like other discharge permits issued under section 402 of the CWA, permits for industrial stormwater discharges must include technology-based effluent limitations and any more stringent water quality-based effluent limitations (WQBELs) as provided in section 301 of the CWA. However, MS4 permits are subject to a unique provision and must “require controls to reduce the discharge of pollutants to the maximum extent practicable” (MEP) and “such other provisions [determined] appropriate for the control of such pollutants.” Section 402(p)(3)(B)(iii). At a minimum, the Phase II regulations require MS4 permits to require development and implementation of a stormwater management program (SWMP) that includes the six minimum control measures set forth in the regulations. 40 CFR §122.34. 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 permitting authority has discretion to require additional stormwater controls or pollutant reduction requirements to meet water quality standards. *See, Defenders of Wildlife v. Browner*, 191 F.2d 1159, 1166 (9th Cir. 1999).

The effluent limits in this permit establish the requirements for reducing pollutants in the MS4’s discharges to the maximum extent practicable and for protecting water quality in the receiving waters. The effluent limitations address the six minimum measures. The permit conditions defined within these six minimum measures and additional measures included in this permit are the means through which FCI Englewood complies with the CWA’s requirement to control pollutants in the discharges to the maximum extent practicable (MEP) and comply with the water quality related provisions of the CWA. The permittee is required to comply with all terms of the permit as written.

The Phase II regulations at 40 CFR §122.34 require the following six minimum pollution control measures to be included in 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. This individual permit replaces the general permit COR42000F, which included nearly verbatim the required

program elements for each minimum measure as specified in the Code of Federal Regulations. These permit conditions are an iteration of those requirements but are more specifically tailored to FCI Englewood in an effort to reduce undue burden and to more specifically address the pollutant sources on-site.

EPA conducted an inspection of FCI Englewood from August 23-24, 2011. This inspection noted deficiencies in the current stormwater program, areas for improvement, and limitations applicable to the FCI Englewood facility. This inspection report is kept as part of the administrative record for this permit, and it was critical in development of this permit. Several of the permit conditions are tailored for this facility based on the findings from that report.

A summary of effluent limits and of the rationale for these limits is as follows:

Permit Conditions – Stormwater Management Plan:

- The permittee must maintain a Stormwater Management Plan (SWMP). The SWMP must describe how the permittee will comply with each of the requirements in **Parts 2.2-2.7**. The SWMP can include citations of documents and electronic records (e.g., manuals, guidance, procedures, electronic management systems, intergovernmental agreements) used to comply with permit requirements. It is not required that the SWMP repeat information included in the cited documents or information systems, but the SWMP must include the names of the most recent versions of the cited documents or information systems and the locations where the supporting documentation is maintained.
- SWMP Availability. The SWMP must be immediately available to EPA in writing. It does not need to be stored or maintained in hardcopy format, but it must be available immediately for printout upon request.
- Annual SWMP Review. The permittee must conduct an annual review of the SWMP in conjunction with preparation of the annual report required under **Part 3.2** and update the document with the most current information.

Rationale: The Stormwater Management Plan provides the framework for the facility to comply with the permit conditions and meet the Clean Water Act goal of reducing pollutants to the Maximum Extent Practicable. The plan establishes roles and responsibilities and is tailored to the facility. This permit does require the use or creation of a written “Stormwater Management Plan”, however it does not require that the plan be a detailed description of activities needed to implement the permit conditions. The written plan is required as it can be used to guide facility managers, contractors, and inspectors regarding activities necessary to comply with the terms of the permit. Other tools, such as automated tracking systems and software may integrate better into the facility’s planning, budgeting, and day-to-day tasks. If it is possible to integrate the permit requirements directly into existing tracking and reporting systems, that approach may be more cost effective and reliable provided that the data from the reporting systems

are sufficient to demonstrate compliance with the permit conditions. Therefore, this permit provides the flexibility to use such systems and to document them more generally in a Stormwater Management Plan.

Permit Conditions - Public Education and Outreach on Stormwater Impacts:

- By no later than 6 months after the effective date of this permit, define target audiences to be reached by the Public Education and Outreach Program, which include, but are not limited to, grounds maintenance personnel, inmates, facility managers, non-staff residents, contract managers, workers engaging in industrial activities, and food service personnel;
- By no later than 18 months after the effective date of this permit, at a minimum, disseminate informational material to the defined target audiences on both the general water quality goals of the permit and provide education specific to the target audiences defined in Part 2.2.1 that addresses their potential pollutant sources and any policies and/or procedures that should be implemented to minimize the discharge of the defined pollutants in stormwater runoff. Informational materials shall be updated and distributed as necessary throughout the duration of this permit, and should provide a location where all annual reports and/or SWMP updates as required by this permit may be viewed;
- By no later than 12 months after the effective date of this permit, and annually thereafter, provide training to building managers, maintenance workers, and tenants on how to minimize, report, and recognize spills and illicit discharges. This training may be incorporated into a larger program to educate tenants and building managers related to environmental compliance or environmental awareness; and
- At least one time during the effective term of this permit or within one year of beginning a new contract, whichever is sooner, provide the grounds contractors or other parties responsible for pesticide and herbicide application with training related to the requirements for NPDES permitting and in the area of chemical disposal and stormwater runoff.

Rationale: FCI's "public" primarily consists of the facility's staff workers, inmates, contractors, and the staff living on-site. For a municipality, the primary messages for this minimum measure are often directed at homeowners with the goal of reducing nutrients and fecal matter in stormwater runoff. A small population of staff living on-site should receive similar information which could be provided by neighboring municipalities such as Lakewood, Denver, or Englewood. However, the larger focus for FCI Englewood should be educating building managers on the overall goals of the permit, educating contract officers on how to create and execute appropriate contracts, and educating staff on how to detect and eliminate illicit discharges. One option for training workers and building managers is to define a facility point of contact for each site or each type of industrial activity. Establishing a point of contact who is on-site at each facility on a day-to-day basis may be a more effective way of providing training as it establishes a level of

onsite accountability, and it empowers people on-site to proactively consider practices which can reduce potential pollutants from discharging to the storm drain system.

The type of training that must be provided is left open-ended. This allows the flexibility for FCI Englewood to incorporate stormwater training into other training or re-certification efforts within the facility. FCI may rely on neighboring cities or EPA for general information, but the best results will likely result from site-specific information that specifies specific practices that can be used to reduce potential pollutants in stormwater runoff directly from that site or activity.

Permit Conditions – Public Involvement and Participation

- Comply with applicable public notice requirements when implementing a public involvement and participation program.

Rationale: All of the “public” at FCI Englewood works, lives, or is detained on-site. Therefore, the public involvement requirements in this permit are more limited than would be for a “traditional” MS4 such as a city. It is important that the facility meet with neighboring jurisdictions to discuss concerns and/or determine areas for collaboration. Meetings with neighboring jurisdictions are recommended for each of the minimum measures and are required as part of the planning process associated with the Post-Construction Stormwater Management in New Development and Redevelopment minimum measure.

Permit Conditions – Illicit Discharge Detection and Elimination

- Continue to implement a program to detect and eliminate illicit discharges into its MS4. The program shall include procedures for detection, identification of sources, and removal of non-stormwater discharges from the storm sewer system. This program shall address dry weather discharges and illegal dumping into the storm sewer system, and include training for staff on how to respond to reports of illicit discharges;
- By no later than 6 months after the effective date of this permit, verify that the existing stormwater drainage system map within the FCI Englewood property accurately reflects the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls. If any updates are necessary, these modifications must be made within this same timeframe;
- By no later than 6 months after the effective date of this permit, develop and implement an enforcement policy that effectively prohibits, through ordinance or other regulatory mechanism available under the legal authorities of the MS4, non stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions. The enforcement policy should include a description of the range of actions to be taken by FCI

Englewood in response to an illicit discharge;

- By no later than 6 months after the effective date of this permit, provide a mechanism (phone number, lead staff contact) for reporting of illicit discharges and provide this information on any outreach materials as appropriate;
- By no later than 6 months after the effective date of this permit, provide emergency spill contact information to all building managers, project managers, and tenants;
- By no later than 2 years after the effective date of this permit, inventory and investigate all interior floor drains within the FCI campus for evidence of cross-connections with the storm sewer system;
- Investigate any illicit discharge within fifteen (15) days of its detection, and take action to eliminate the source of the discharge within forty five (45) days of its detection (or obtain permission from EPA for such longer periods as may be necessary in particular instances);
- Conduct dry weather screening annually at each of the major outfalls for the presence of non-stormwater discharges and to determine if there are significant erosion issues which need to be addressed. Screening level tests may utilize less expensive “field test kits” using test methods not approved by EPA under 40 CFR Part 136, provided the manufacturer’s published detection ranges are adequate for the illicit discharge detection purposes. If an illicit discharge is detected, an assessment of that discharge shall be made consistent with Part 2.4.7, above; and
- Maintain an information system that tracks dry weather screening efforts, illicit discharge reports, and the location and any remediation efforts to address identified illicit discharges.

Rationale: During EPA’s facility inspection in 2011, a significant illicit discharge was recognized. It is anticipated that these permit conditions will result in the reduction of illicit discharges and characterization of these discharges to determine if illicit discharges are a significant contributor of pollutants to Waters of the United States. Maintaining an updated storm sewer map will help characterize and locate illicit discharges. Maintaining a policy and enforcement response mechanism to address illicit discharges is an important step to eliminating these sources, and education of on-site staff regarding what is an illicit discharge and how to address it will help reduce the likelihood of illicit discharges from re-occurring. The permit contains a list of non-stormwater discharges which are authorized by the permit such as rising ground water, air conditioning condensate, and fire hydrant flushing. Despite the fact that these non-stormwater discharges are authorized under the permit, it is important to assess the effect that these discharges can have on receiving waters. For example, if significant irrigation return flows are leaving the facility, it is possible that significant nutrient loading could be sent to the Platte River. An assessment of this activity would lead to mitigation measures

such as water reduction, alternative planting, spot irrigation, or reductions in fertilizer application with the overall goal being the reduction of pollutants discharged from the non-stormwater discharges listed in the permit.

Permit Conditions – Construction Site Runoff Control:

- Require all contractors having a potential of disturbing one or more acres of land within FCI Englewood to obtain NPDES permit coverage for their construction stormwater discharges under an applicable EPA permit, and to comply with other applicable State or local construction stormwater requirements;
- Provide training to contracting office representatives who perform daily inspections regarding (1) the maintenance and installation of Best Management Practices for construction stormwater control and (2) the terms of their construction stormwater permit. This training is required at least once during the term of this permit or within one year of hiring new contracting office representatives, whichever is sooner, and shall include procedures for how representatives will document and submit findings to FCI Englewood staff ;
- Maintain a list of policies and/or procedures that can be used to enforce construction site compliance within FCI Englewood, and implement procedures for documenting deficiencies in contract performance based on compliance with construction stormwater regulations. This may include working with other cities, drainage districts, and/or utilizing the EPA for enforcement of construction stormwater violations and shall address enforcement mechanisms for non-FBOP construction projects (e.g., Jefferson County road construction). The policies and/or procedures shall incorporate an escalation protocol (e.g., a warning for first-time violators, followed by an administrative action or an action with a penalty for subsequent violations);
- Review the scope of work for all construction projects to assess whether proposed Best Management Practices (e.g., sediment and erosion controls) are realistic and to ensure compliance with the stormwater construction permit requirements for developing a stormwater pollution prevention plan;
- Inspect, at least monthly, all construction projects for compliance with the terms of the NPDES construction stormwater permit or other applicable State or local requirements. For use in inspecting individual projects, use a construction site inspection checklist or other appropriate documentation specific to the construction stormwater permit;
- For any construction projects which disturb equal to or greater than one acre of land, include compliance with stormwater regulations as part of the process for rating contract performance;

- Maintain and utilize a closure process whereby environmental staff or contracting office representatives evaluate whether soil stabilization requirements have been met at all areas of the site prior to closing out construction stormwater permits;
- Require all contractors having a potential of disturbing one or more acres of land to acquire a permit as required by local, state, and federal law;
- Provide training to contracting office representatives which perform daily inspections regarding the maintenance and installation of Best Management Practices for construction stormwater control and the terms of the construction stormwater permit. This training is required at least once during the term of this permit or within one year of hiring new contracting office representatives, whichever is sooner, and shall include procedures for how representatives will document and submit findings to FCI Englewood staff;
- Maintain a list of policies and/or procedures which can be used to enforce construction site compliance within FCI Englewood, and implement procedures for documenting deficiencies in contract performance based on compliance with construction stormwater regulations. This may include working with other cities, drainage districts, and/or utilizing the EPA for enforcement of construction stormwater violations and shall address enforcement mechanisms for non-FBOP construction projects (e.g., Jefferson County road construction). The policies and/or procedures shall incorporate an escalation protocol (e.g., a warning for first-time violators, followed by an administrative action or an action with a penalty for subsequent violations);
- Review the scope of work for all construction projects by environmental staff to assess whether proposed management practices (e.g., sediment control structures) are realistic and to ensure compliance with the stormwater construction permit requirements for developing a stormwater pollution prevention plan;
- For inspection of new construction projects disturbing one acre or greater, use a construction site inspection checklist or other appropriate documentation specific to compliance with the terms of the construction stormwater permit; and
- Maintain and utilize a closure process whereby environmental staff or contracting office representatives evaluate whether 70% vegetative cover has been met at all areas of the site prior to closing out construction stormwater permits;

Rationale: Construction at FCI Englewood is completed through contracts. It is important that contracting officers are provided adequate training to understand why construction stormwater permits are issued and how to recognize issues with structural controls prior to a storm event occurrence. As part of this process, contracting officers will understand how to document and submit findings to FCI Englewood staff. Enforcement response procedures are important to assure compliance with construction stormwater permit requirements, and the facility can likely determine the most effective mechanisms for

enforcement response. These could include enforcement mechanisms such as stop-work orders and financial penalties taking into consideration the speed and cost-effectiveness of these measures within the context of the facilities administrative processes and day-to-day operations. Contracting officers are required to be trained since they have a consistent presence at construction sites and pre-defined procedures for auditing contract performance. As part of the contracting process, FCI should consider how compliance with construction stormwater regulations is recognized within the context of federal facility contract rating systems, since most entities executing federal contracts are highly dependent on retaining quality ratings in order to secure repeat business.

Construction at FCI Englewood is anticipated to include further easements for road construction in the near future. Therefore, the construction sites management program will need to include a regulatory mechanism for enforcement of stormwater requirements for construction projects on its property, whether they are FBOP local, divisional, or outside agency easements on the property. An enforcement response guide will provide EPA with a description of how the FBOP intends to implement the construction site program, including a timeline and roles and responsibilities within the FBOP.

Permit Conditions – Post-Construction Stormwater Management for New Development and Redevelopment

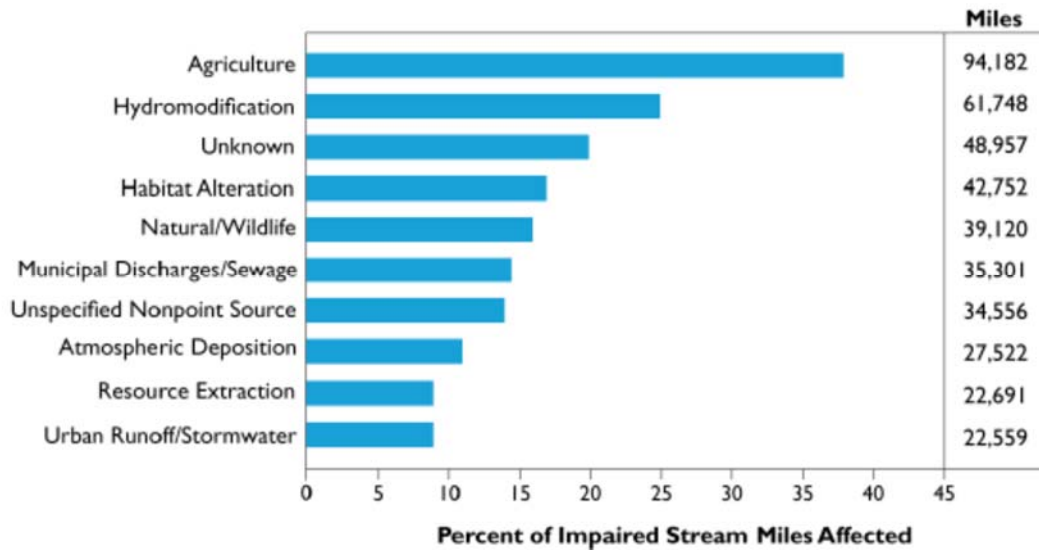
- Include in contracts and requests for funding (e.g., a “prospective package”) a requirement to design for and provide funding for the installation of permanent post construction stormwater control measures designed to retain, detain, infiltrate or treat stormwater discharge from newly developed and redeveloped sites that disturb greater than or equal to one acre of land in a manner consistent with Control Measure Design Standards. This must include a line item for costs associated with the installation and design of permanent stormwater control measures;
- As part of the design review process for newly developed and redeveloped sites disturbing equal to or greater than one acre, review contracts to ensure that they are consistent with the Control Measure Design Standards;
- For all newly developed and redeveloped sites that will disturb one acre or greater of land, meet with appropriate city, county, and/or drainage district staff to discuss recently constructed or proposed newly developed or redeveloped sites within the MS4 and how they may impact the water quality downstream;
- Within two years of the effective date of this permit, provide training to all planning staff and contracting officers to provide education on stormwater runoff, and to communicate the expectations for consistency with the Control Measure Design Standards;
- Implement a closeout procedure such that newly installed permanent post-construction stormwater control measures can be cleaned and are in working order as designed prior to closing out contracts;

- Retain construction as-built designs and maintenance requirements for all installed Control Measures that were designed to meet the standards provided in Parts 2.6.9, 2.6.10, and 2.6.11 for the life of the Control Measures. This requirement applies to vegetative and soil management requirements, minimization of directly connected impervious areas, and other green infrastructure practices designed to meet the infiltration requirements in Part 2.6.9.2.
- Within three years of the effective date of this permit, obtain maintenance requirements and design specifications for all post-construction stormwater control measures (e.g., detention ponds, retention ponds, infiltration galleries) located within the exterior boundary of FCI Englewood. If it is not possible to obtain design specifications for a specific stormwater control measure, then presumptive specifications shall be created based on the specifications contained within the Urban Drainage and Flood Control District (UDFCD) Urban Storm Drainage Criteria Manual, Volume 3 - Best Management Practices;
- Inspect at a minimum, semi-annually, inspect all post-construction stormwater control measures (e.g., detention ponds, retention ponds, infiltration galleries) to ensure that they are being maintained in a manner which meets their intended design. This requirement applies to vegetative and soil management requirements, minimization of directly connected impervious areas, and other green infrastructure practices designed to meet the infiltration requirements.
- Control Measure Design Standards. The permittee's requirements and oversight must be implemented to address selection, installation, implementation, and maintenance of Control Measures using either the Water Quality Capture Volume Standard or the Infiltration Standard:
 - Water Quality Capture Volume (WQCV) Standard: The Control Measure is designed to provide treatment and/or infiltration of the water quality capture volume (WQCV) as defined in the Urban Drainage and Flood Control District (UDFCD) Urban Storm Drainage Criteria Manual, Volume 3 - Best Management Practices., and:
 - 100% of the stormwater runoff from the applicable site as defined in 2.6.1 is captured, except the permittee may exclude the stormwater runoff from an area not to exceed the lesser of 1,000 square feet or 1% of the site when the permittee has determined that it is not practicable to capture runoff from portions of the site that will not drain towards Control Measures, and implementation of a separate Control Measure for that portion of the site is not practicable (e.g., driveway access that drains directly to the street).
 - Detention of the WQCV shall be a minimum of 12 hours, but shall be extended as needed to meet the Control Measure Design Standards of this permit. Evaluation of the minimum drain time shall be based on the pollutant removal mechanism

and functionality of the Control Measure implemented. Consideration of drain time shall include maintaining vegetation necessary for operation of the Control Measure (e.g., wetland vegetation).

- Infiltration Standard: The Control Measure is designed to infiltrate, through practices such as green infrastructure, a quantity of water equal to 70% of what the WQCV would be if all created impervious area at the site discharged without infiltration.
- Additional Control Measure Requirements for Specific Industrial Activities. In addition to the Control Measure Design Standards, Control Measures such as oil and grease sand filters, secondary containment structures, and/or segregation of flows around pollutant hot spot areas shall be installed and maintained as practicable to reduce pollutants discharged from the following specific industrial activities:
 - Retail gasoline outlets and fueling areas;
 - Restaurants and food service preparation facilities;
 - Automotive service and supply stores; and
 - Vehicle maintenance facilities.
- Alternative Control Measure Design Standard. The permittee may address selection, installation, implementation, and maintenance using an Alternative Control Measure Design Standard provided that modeling or data analyses can be utilized to determine that the Alternative Control Measure Design Standard is at least as stringent in removing pollutants in stormwater runoff as the Control Measure Design Standard. The permittee retains the burden of proof in making a determination of equivalency.

Rationale: The discharges of post-construction discharges are recognized nationally as a significant source of pollutants to Waters of the U.S. This is quantified through EPA's National Water Quality Inventory Report to Congress, which is publicly available through the EPA web site at www.epa.gov/305b. The latest version of this report summarizes water quality data collected through 2004 and was published in January, 2009 (EPA Document Reference Number 20460 EPA 841-R-08-001). In this latest assessment of water quality, stormwater runoff from can be specifically characterized as a source of impairment in nearly 10% of the rivers and streams assessed nationally.



Source: EPA's National Water Quality Inventory Report to Congress, January, 2009
 EPA Document Reference Number: 20460 EPA 841-R-08-001

This assessment that stormwater runoff is a cause of impairment of nearly 10% of the rivers and streams nationwide is likely an underestimate, however, as urban runoff causes impacts such as hydromodification and habitat alteration which are designated as a separate source of impairment and not specifically linked to urban runoff/stormwater.

The purpose of designing control measures based on the Water Quality Capture Volume (WQCV) is to improve discharge water quality and to reduce instream impacts such as hydromodification and streambank de-stabilization. Capturing and detaining the WQCV reduces these impacts through storage, infiltration, vegetative/soil sequestration, evapotranspiration or a combination of these processes. The Water Quality Capture Volume is not a static number as it is based on rainfall data on storm event frequency which is continually updated. However as a reference point, within the exterior boundary of the DoC Boulder Laboratories campus at the time of this permit issuance, the WQCV corresponds to 0.6 inches of precipitation.

The WQCV was selected as basis for a detention standard as it has been utilized widely as an effective management tool for the semi-arid Intermountain West. It is currently utilized as a detention standard in the neighboring cities of Denver and Boulder and has been proposed as the design standard in the 2014 reissuance of the Colorado Statewide Small Municipal Separate Storm Sewer permit (available as part of the Administrative Record for this permit).

Analysis of 36 years of data at the Denver Stapleton Rain Gauge conducted by the Urban Drainage and Flood Control District was utilized to develop this standard and is documented in *Sizing a Capture Volume for Stormwater Quality Enhancement* (available at www.udfcd.org) and as part of the Administrative Record for this permit.

(Urbonas, B., J. Guo, and L.S. Tucker. 1989 updated 1990. *Sizing Capture Volume for Storm Water Quality Enhancement*. Flood Hazard News. Urban Drainage and Flood Control District)

The WQCV is not meant to capture the runoff from all storm events. Urbonas et al. (1989) identified the runoff produced from a precipitation event of 0.6 inches as the target for the WQCV, corresponding to the 80th percentile storm event. Urbonas et al. (1989) concluded that if the volume of runoff produced from impervious areas from these storms can be effectively treated and detained, water quality can be significantly improved. This is consistent with the findings from “*Urban Stormwater Management in the United States, a Report of the National Research Council, 2008*”, which notes the following related to Stormwater Control Measures (SCMs):

“SCMs that harvest, infiltrate, and evapotranspire stormwater are critical to reducing the volume and pollutant loading of small storms. Urban municipal separate stormwater conveyance systems have been designed for flood control to protect life and property from extreme rainfall events, but they have generally failed to address the more frequent rain events (<2.5 cm) that are key to recharge and baseflow in most areas. These small storms may only generate runoff from paved areas and transport the “first flush” of contaminants. SCMs designed to remove this class of storms from surface runoff (runoff-volume-reduction SCMs— rainwater harvesting, vegetated, and subsurface) can also help address larger watershed flooding issues.”

An infiltration standard is provided as an alternative to treating the Water Quality Capture Volume. This standard could also be referred to as a “Green Infrastructure” standard. This standard requires that the control measures are designed to infiltrate, through practices such as green infrastructure, 0.5” of runoff from all areas of the site. This standard is less than the 0.6” WQCV in an effort to encourage the use of green infrastructure practices and to encourage as a whole, better site design, conservation of natural areas, and watershed land-use planning. This is consistent with the findings from “*Urban Stormwater Management in the United States, a Report of the National Research Council, 2008*”, which summarizes the following related to Stormwater Control Measures (SCMs):

“Nonstructural SCMs such as product substitution, better site design, downspout disconnection, conservation of natural areas, and watershed and land-use planning can dramatically reduce the volume of runoff and pollutant load from a new development. **Such SCMs should be considered first before structural practices.** For example, lead concentrations in stormwater have been reduced by at least a factor of 4 after the removal of lead from gasoline. **Not creating impervious surfaces or removing a contaminant from the runoff stream simplifies and reduces the reliance on structural SCMs.**”
[Emphasis added]

The Report, “Urban Stormwater Management in the United States, a Report of the National Research Council, 2008”, is available through the EPA web site (www.epa.gov), and can be requested by contacting the EPA Region 8 office. The summary of this report as referenced in this Statement of Basis is included in the Administrative Record for this permit.

Post-construction controls are required on all newly developed and redeveloped sites that disturb one acre or greater of land. Since FCI Englewood rarely has construction which exceeds this one

acre threshold, it is anticipated that, outside of training requirements, there may be long periods of time where there will be no newly developed or redeveloped sites being planned.. Therefore, staff at FCI Englewood are encouraged to work with EPA, neighboring cities (e.g., Lakewood), and local flood control districts (e.g., Urban Drainage & Flood Control District) when planning for new projects arises. These entities can provide further input related to how new proposals can be designed and what types of controls can be installed and how they can be more effectively maintained. FCI Englewood is encouraged to reach out to these entities for advice or to provide training on their behalf throughout the permit cycle.

This permit allows for the utilization of an Alternative Control Measure Design Standard. FCI Englewood may choose to incorporate more stringent modeling techniques (e.g., EPA's SWMM model) in an attempt to include pollutant control technologies more specifically tailored to unique site conditions. An Alternative Control Measure Design Standard may be utilized if it can be determined that it is as stringent in removing pollutants in stormwater runoff as the Control Measure Design Standard prescribed in the permit.

In addition to the Control Measure Design Standards, Control Measures such as oil and grease sand filters, secondary containment structures, and/or segregation of flows around pollutant hot spot areas are required to be installed and maintained as practicable to reduce pollutants discharged from retail gasoline outlets and fueling areas, restaurants and food service preparation facilities, automotive service supply stores, and vehicle maintenance facilities. These types of facilities are largely excluded from permitting requirements but have been recognized as contributors of pollutants in stormwater discharges. Waste or washwater generated by the food service industry often contains materials such as food wastes, oil, grease, detergents, and degreasers. Oil and gas spilled onto paved areas are easily washed away by water, either from hoses or rainfall. Sources of pollutants generated at retail gasoline outlets, vehicle service supply stores, and vehicle maintenance areas include leaked or spilled oil, grease, engine and brake residues, and antifreeze. Pollutants from these sources include copper and brass from engine degreasers; lead, oil, and grease from radiator flushing; oil, grease, and detergents from car washing; aluminum and iron from engine washing; and copper, lead, zinc, and cadmium from tires and brakes. Several strategies may be useful for reducing pollutants from these sources are required to be installed on newly developed or redeveloped sites as practicable. These may include non-structural control measures such as operational requirements to conduct certain activities indoors, under cover, or under specific controlled conditions. Non-structural control measures can be used to meet this requirement provided that they are incorporated into the facility's Stormwater Management Program.

Permit Conditions – Pollution Prevention and Good Housekeeping for Municipal Operations:

- Conduct an annual snow meeting at the beginning of each year to discuss strategies to prevent the misuse and over-application of chemical deicers;

- Develop and implement a schedule for cleanout of storm sewer inlets in a manner which prevents significant deposition of sediment or other debris to receiving waters; and
- Install and maintain control measures (structural or non-structural) which reduce the discharge of pollutants in stormwater runoff from electronic component recycling areas, herbicide and pesticide application areas, turf management areas, recycling/material storage areas, fuel storage and transfer areas, de-icer storage, lavatory waste transfer/disposal areas, industrial activities (e.g., welding), food service areas, and loading/unloading areas.

Rationale: Municipal operations can be a significant source of pollutants in stormwater runoff, especially when uncontrolled. Pollutants and pollutant sources observed during EPA's inspection included sediment from construction activities, metals from welding and electronic recycling activities, oil based contaminants from fueling and storage activities, salt from de-icing materials usage and storage, a solid-waste storage container discharging liquid into a storm drain inlet at the food preparation area, and sediment from the prison recreation yard and parking lots. The installation and maintenance of control measures for these areas and activities is a critical step to managing an effective stormwater program.

Public Notice

This permit was public noticed in the Denver Post on July 11, 2014. No comments were received during the public notice period.

Administrative Record

The administrative record for this permit may be obtained upon request by contacting Greg Davis at 303-312-6314 or by writing or E-mailing to the address listed below:

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Mailcode: 8P-W-WW
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Wastewater Unit
EPA Region 8
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