**ADDENDUM**
**Modified – Fact Sheet**

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| PERMITTEE: | United States Department of the Air Force, 460th Space Wing |
| FACILITY: | Buckley Air Force Base Municipal Separate Storm Sewer System (MS4) located at 39° 42' 30" N and 104° 45' 30" W |
| PERMIT NO.: | CO-R042003 |
| RESPONSIBLE OFFICIAL: | Colonel John W. Wagner, Commander |
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**Permit Modification History:**

On August 6, 2013, EPA issued NPDES Permit CO-R042003 (the Permit) to the United States Department of the Air Force (Air Force), 460th Space Wing for the Buckley Air Force Base (Buckley) MS4 located in Aurora, Colorado. The permit effective date was to be October 1, 2013, and the expiration date is September 30, 2018. On September 30, 2013, the Air Force filed with the Environmental Appeals Board a petition for review of the Permit. The Air Force appealed the conditions and requirements in Part 2.6 of the Permit relating to Post-Construction Stormwater Management for New Development and Redevelopment, specifically Parts 2.6 through 2.6.3 of the Permit. With the exception of these challenged provisions, which were stayed pursuant to EPA's regulations at 40 C.F.R. § 124.16, the Permit became effective on January 1, 2014.

EPA and the Air Force voluntarily agreed to enter into Alternative Dispute Resolution (ADR) to attempt to settle the permit appeal. As a result of ADR, EPA agreed to propose modifications to the contested provisions in the Permit to settle the appeal. The proposed permit modification would replace Parts 2.6.1 through 2.6.3 with a revised Part 2.6.1; renumber Parts 2.6.4 through 2.6.9, including subparts, as 2.6.2 through 2.6.7; revise the renumbered subpart 2.6.7.1; and revise Part 3.3 of the final permit to clarify annual reporting dates.

EPA public-noticed the agreed-upon language in a proposed permit modification on August 20, 2014. EPA received one set of consolidated comments from the Natural Resources Defense Council, American Rivers, and the Conservation Law Foundation.

**Permit Modification Background:**

This final permit modification clarifies that newly developed and redeveloped sites, at which one or more acres is disturbed, must be designed and constructed using Best Management Practices

(BMPs) that are able to maintain on-site pre-development runoff conditions, except to the extent it is impracticable to do so. The modified permit includes a list of reasons why the permittee may find it impracticable to maintain on-site pre-development runoff conditions using on-site stormwater controls, such as practices that detain, infiltrate or treat-and-release stormwater. The modified permit also requires Buckley to document its determinations that any such reasons exist for particular projects. The final modification makes clear that maintaining pre-development runoff conditions by implementing such BMPs on-site is preferred, but that where the permittee documents that as impracticable, other controls that prevent or minimize water quality impacts to receiving waters from the MS4's discharges due to the site's stormwater runoff are required.

The revisions to Part 2.6.1 and its subparts (2.6.1.1 - 2.6.1.3) provide further clarification as to EPA's expectations for controlling post-construction discharges from the MS4 resulting from new development and redevelopment projects. EPA modified this part of the Permit, in part, to reflect that there may be circumstances (examples listed in Part 2.6.1.3.1) that make it impracticable to use BMPs designed to "maintain pre-development runoff conditions" at a new or redevelopment project site. Therefore, where Buckley is confronted by such circumstances at the project location, the Permit now clarifies the flexibility that is available to the Permittee. This flexibility, while intended in the appealed version of this permit provision, was not clearly specified in the original Permit. The final revised provision now explains that the Permittee first starts by selecting BMPs that are able to maintain pre-development runoff conditions at a new or redevelopment site, and, if reasons exist making it impracticable to design the site with on-site BMPs, then the Permittee shall install or utilize, and maintain, alternative stormwater control measures to prevent or minimize water quality impacts from the runoff from the site, for example by directing unmanaged site stormwater to an offsite stormwater detention pond.

**Reasons for Making Impracticability Determinations:**

EPA focused on site constraints (examples found in Part 2.6.1.3 of the Permit) in recognition that at some sites the Permittee may be unable to utilize BMPs that are designed to maintain the on-site pre-development runoff conditions for physical (e.g., certain natural or anthropogenic) reasons. EPA also recognizes that in certain circumstances there may be legal, safety, or military operational reasons that render impracticable the use of on-site BMPs to the extent necessary to maintain pre-development runoff conditions. As discussed further in the Responses to Comments section, the final permit modification makes it clear that the reasons for impracticability listed in Part 2.6.1.3 are exclusive. However, to ensure that EPA has captured the range of site constraints and circumstances that could make it impracticable to use BMPs that are able to maintain the pre-development runoff conditions as required in Part 2.6.1.1, two additional reasons for impracticability have been added to the list. The examples included in the list were based on a review of available information on typical site constraints, including the constraints discussed in EPA's " Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act," and on the types of on-site constraints that could plausibly occur at Buckley. EPA identified these Buckley-specific site constraints through review of the relevant support documents identified at the end of this fact sheet, past inspections of the Buckley AFB MS4, and conversations between EPA permit writers and Buckley environmental staff.

EPA has given Buckley the discretion to make site-specific impracticability determinations for a variety of reasons. First, these determinations are structured, fact-specific, technical determinations concerning individual projects and sites. Buckley is most familiar with its operating environment, and it is most appropriate for Buckley to assess and analyze the factual and technical details pertaining to post-construction stormwater control on its project sites. Moreover, the Clean Water Act, as interpreted by courts, clearly requires EPA to assess the adequacy of a permittee's stormwater control program, but allows EPA to leave the selection of individual control measures up to permittees. Finally, by specifying a finite list of reasons and requiring impracticability determinations to be documented, EPA has retained its review authority while providing Buckley the limited discretion it requires to make site-specific impracticability determinations. If, after Buckley submits its annual report detailing, among other things, the site-specific impracticability determinations it has completed, EPA determines that such determinations are not supported by sufficient factual or analytical justification, the Agency has the option of modifying this provision pursuant to Parts 4.11 and 4.16 of the Permit, and 40 C.F.R. § 122.62.

If any of the reasons for determining impracticability listed in the permit modification are present at the project site, EPA notes that the Permittee is not relieved of the requirement in Part 2.6.1.1 to implement BMPs with the ability to maintain pre-development runoff conditions. Rather, if the Permittee determines that it is impracticable to manage the on-site entire volume of stormwater associated with pre-development runoff conditions due to, for example, one or more of the factors in Part 2.6.1.3.1, the Permittee would still be required to manage as much of this volume as is practicable. In such circumstances, Part 2.6.1.2 of the Permit requires the Permittee to install or utilize, and maintain, alternative stormwater control measures that prevent or minimize water quality impacts from post-construction stormwater runoff. The intent of this provision is to require the Permittee to maximize the volume of stormwater that is managed through post-construction controls.

To help illustrate the intended interplay between Parts 2.6.1.1 and 2.6.1.2, EPA offers the following example:

> Suppose Buckley has plans to build new parking facilities on the Base, which will result in a total land disturbance of two acres. Because the provision in Part 2.6.1.1 of the Permit is triggered for new and redevelopment facility projects disturbing greater than one acre, Buckley must evaluate the stormwater controls that can be implemented at the site to maintain pre-development runoff conditions. As a result of this evaluation, Buckley determines that prior to development the previously undeveloped site naturally detains, infiltrates or treats-and-releases a volume of stormwater equivalent to the 80$^{th}$ percentile storm (approximately 0.6" of stormwater for the Denver Metropolitan Area). Buckley then evaluates the stormwater controls that can be used to manage this volume of stormwater at the site. The evaluation concludes that due to the naturally low soil infiltration capacity of the site and the shallow depth to bedrock it would be impracticable to manage the entire volume of stormwater at the site.
>
> Due to these site constraints, Buckley then implements the stormwater controls to maintain the pre-development runoff conditions that are practicable at the site (e.g. if it is

determined that maintaining half of pre-development runoff volume is practicable, Buckley would then utilize BMPs at the site which infiltrate 0.3" of stormwater). Next Buckley would turn to the requirement of Part 2.6.1.2 to evaluate the alternative ways of controlling the project's post-construction discharges that can be installed, or existing controls that can be utilized, in order to minimize water quality impacts. Buckley finds that water quality impacts from sediment from the new parking facility require installing a new control offsite (e.g., vegetative swale) or utilizing an existing offsite control (e.g., detention basin).

Thus, although Buckley may not be managing the entire volume associated with pre-development runoff conditions on-site, it has implemented BMPs to manage some portion of the developed site's runoff on-site to the extent practicable, and has therefore complied with Part 2.6.1.1. Buckley has also complied with Part 2.6.1.2 because it installed or utilized, and maintained, alternative stormwater control measures to prevent or minimize water quality impacts from the runoff from the new or redevelopment site. Note that Buckley is also required, consistent with Part 2.6.1.3.2 to provide documentation to EPA in its annual report supporting its conclusion that using only on-site controls to manage the site's post-development stormwater under Part 2.6.1.1 was impracticable.

**Basis for Establishing Impracticability Reasons:**

The following section provides further explanation on how the impracticability reasons established in Part 2.6.1.3.1 are meant to be applied. Where it is available, EPA includes information specific to conditions on Buckley Air Force Base that may influence any impracticability determinations that Buckley may make. This Base-specific information is drawn from support document number 7 cited at the end of the fact sheet, from knowledge gained during site inspections that EPA staff have previously conducted at Buckley, and from discussions between EPA permit writers and Buckley environmental staff.

*Low soil infiltration capacity*
The major soil-mapping units present on Buckley include the Fondis-Weld, Alluvial Land-Nunn, and Renohill-Buick-Litle associations. Other areas on the installation have been identified as gravel pits, rock outcrop complexes, sandy alluvial land, and terrace escarpments. The Alluvial Land-Nunn association consists of soils that have moderate permeability (0.63 inch per hour) and high water-holding capacity (0.20 inch per inch of soil), and are typically found along floodplains and terraces. On installation, these soils are found along Tollgate Creek and Sand Creek. These soils are deep, nearly level, loamy, and sandy soils. These soils support vegetation well, but flood protection may be needed to prevent erosion and gully formation. The most common soil types in this association are the Nunn-Bresser Ascalon and the Nunn Loam series, both of which have moderate permeability (0.63 to 6.3 inches per hour) and high water-holding capacity (0.20 inch per inch of soil). Both are typically well-drained, gently sloping soils (0 to 3 percent slope).

Sites with poorly infiltrating soils (e.g. high clay content, compacted soils) may limit the type and number of post-construction practices that maintain the on-site pre-development runoff

conditions. Stormwater management limitations in areas with tight soils generally preclude large-scale infiltration and groundwater recharge (infiltration that passes into the groundwater system). However, this does not mean that these tight soils do not have any infiltration and groundwater recharge capabilities.

*Shallow depth to bedrock*
EPA recognizes that some sites may be able to achieve only limited infiltration due to the presence of bedrock. Design features can mitigate some physical constraints (e.g., deep ripping and addition of soil amendments can increase rates in cases where near surface soil compaction and/or shallow and thin low permeability layers limit infiltration); however physical constraints may be beyond the spatial scale that can be modified by a typical development/redevelopment project (e.g., regional groundwater table, thick layer of low permeability material).

*Downgradient erosion*
While it is important to consider site slopes with any stormwater controls, it is particularly important in the selection of control measures for sites with steep slopes. Soil erosion and landslides are concerns whenever construction occurs on or near slopes, but become even more of a concern when slopes are saturated with water. Since many stormwater practices that maintain the pre-development runoff conditions may enhance infiltration of water into the soil, consideration should be taken when utilizing stormwater controls at sites with steep slopes. Buckley tends to be relatively flat in topography; however, there may be instances where consideration of steep slopes may be necessary to prevent downgradient erosion.

*High groundwater table*
Buckley is within the Denver Basin groundwater basin. There are four major bedrock aquifers that underlie Buckley within the Denver Basin: the Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills aquifers. These aquifers are separated by a bed of shale with low permeability and are located in zones of sandstones and siltstones. Surficial aquifers at Buckley are associated with present and ancestral surficial stream and river valleys. The aquifer systems are the result of alluvial deposition from erosion of upland bedrock areas. The alluvial aquifer identified on Buckley is associated with Tollgate and Sand Creeks and consists of primarily coarse-grained materials. Groundwater is recharged to this aquifer through direct infiltration of precipitation and irrigation water and by lateral and upward seepage of groundwater. Groundwater is discharged from the alluvial aquifer through seepage to streams, evapotranspiration, and downward seepage into underlying bedrock aquifers. Groundwater flow in these surficial aquifers is generally toward the north-northwest along creekbeds, toward the South Platte River.

Shallow groundwater below an infiltration stormwater control measure can reduce infiltration rates or, if high enough, can result in groundwater discharge to the stormwater drainage system. Over the majority of the installation, the depth to groundwater is greater than 20 feet (6.1 meters) below ground surface and therefore, groundwater does not typically daylight on the surface. Only in a few locations, such as within the East Tollgate Creek channel might there be instances of the groundwater table daylighting for brief, seasonal, periods of time. Therefore, while EPA does not anticipate that site constraints associated with high groundwater tables will be present at Buckley, it cannot rule out the possibility that the Permittee may find isolated locations where this site constraint exists.

*High potential for groundwater contamination*
Practices that involve infiltration of stormwater may not be appropriate when such practices have a high risk of compromising groundwater quality. This site constraint includes three general categories where stormwater infiltration may not be appropriate. The first category addresses sites in which the soil or subsoil is already highly contaminated (e.g., brownfields). Infiltration of stormwater on these sites could mobilize or spread the contaminants from the soil or subsoil to the groundwater itself. The second category addresses sites at which concentrated pollutants are used or stored. Sites are generally designed to direct stormwater flow from impervious areas to stormwater controls. A concentrated pollutant that spills on the impervious area of such a site (e.g., a parking lot) would likely follow the same path as the stormwater and flow through the stormwater control (e.g., a vegetated swale), infiltrate the surface, and possible contaminate the groundwater. The third category addresses sites in which salts or other dissolved pollutants are used (e.g., road salting). As a result of the presence of these contaminants, elevated levels of dissolved salts are commonly present in meltwater and road runoff in these areas. Salts (and dissolved solids in general) pose a unique risk to groundwater in that they are not degraded in soils and can build up in aquifers over time, particularly where the system does not experience periodic flushing.

Buckley has a few locations on the installation with historic soil/groundwater contamination including a landfill; however, these sites are currently managed under installation remediation programs. Therefore, consideration may be needed for these sites because BMPs which maintain the on-site pre-development runoff conditions may be impracticable.

*Flooding*
During periods of extended or large-scale flooding, EPA recognizes that the Permittee may be unable to utilize BMPs that attempt to maintain the on-site pre-development runoff conditions. Flooding may also create a safety hazard for human life. The geographic location of Buckley is on the eastern plains of the Denver Metropolitan Area, which is generally flat in topography. The flat landscape can make the area more prone to flooding since the water tends to pool and settle rather than runoff downgradient. However, currently, the only 100-year floodplain area on the installation is located along East Tollgate Creek and, Buckley has not had a major flooding event in the past several years.

*Existing underground facilities or utilities*
The presence of existing underground facilities or utilities may prevent the Permittee from attempting to maintain the on-site pre-development runoff conditions. This site constraint includes the presence of structures remaining on-site after demolition or the presence of underground facilities or utilities. EPA is including these as site constraints because redevelopment projects are often built on lots with existing structures or utilities and, in some cases, the presence of these structures or utilities may limit the ability of the Permittee to effectively maintain the pre-development runoff conditions.

*Insufficient space onsite*
The requirements of Part 2.6.1 of the permit apply to new or redevelopment projects that disturb equal to or greater than one acre. While EPA believes that project sites that are too small to allow

for both the new or redevelopment construction project *and* post-construction stormwater control measures will be uncommon on Buckley, EPA also recognizes that situations may arise in which the new or redeveloped project will consume most or all of the available space. For example, Buckley has a number of large hangars and operational buildings, some of which themselves are larger than an acre, that are bounded on all sides by other buildings, parking lots, runways, etc. Were Buckley to find it necessary to redevelop or rebuild such structures *in situ*, there could be insufficient space to construct post-construction stormwater BMPs on-site.

*Conflicts with State or local requirements*
Buckley may encounter State or local requirements that conflict with the requirement that it implement certain stormwater controls onsite at new or redevelopment projects. In instances where such conflicts are not resolvable through the selection of a different BMP or suite of BMPs, the State or local requirement could make it impracticable to implement sufficient post-construction stormwater BMPs on-site to manage the site's stormwater.

*Safety considerations*
The area along East Tollgate Creek just to the west of the southern portion of the active runway at the Buckley airfield has posed an ongoing Bird Aircraft Strike Hazard (BASH) concern. This area is also within a 100-year floodplain. The presence of the birds adjacent to the Buckley flightline is incompatible with the flying mission, because birds and other wildlife on runways, taxiways, or infields create potential safety hazards for Buckley personnel and the surrounding community. Any open water on or near the runway of the Buckley airfield could increase open water habitat that would be present an attractant for waterfowl and other wildlife. Consideration regarding the use of certain post-construction stormwater controls will be necessary to ensure the safety of aircraft and personnel.

*Operational or design considerations specific to military function*
EPA recognizes that military bases such as Buckley Air Force Base have a variety of operational concerns that are driven by the military nature of their activities and may be thus unique among the universe of small MS4s. Buckley, for example, maintains space-based missile warning capabilities, space surveillance operations, and space communications operations. In doing so, Buckley provides missile defense, technical intelligence, and satellite command and control services to the United States, in addition to serving as a functioning airfield for a variety of military aircraft. EPA does not intend for the implementation of on-site post-construction stormwater controls to interfere with these specific military functions. If, for example, Buckley found that the requirements regarding perimeter security around a newly developed or redeveloped facility would consume the land space that would be used for BMPs to maintain the pre-development runoff conditions on-site, it may be able to determine that it would be impracticable to meet the requirement of Part 2.6.1.1 based on the operational considerations outlined in Part 2.6.1.3.1. These types of considerations, however, are not boundless. If the operational and design considerations would be shared by other small, non-military MS4s, then it is unlikely that these considerations are unique to the military function of Buckley and therefore would likely not serve as a basis for an impracticability determination.

**Role of Cost in Impracticability Determinations:**

EPA notes that the Part 2.6.1.3.1 examples provided above are illustrative of the types of site constraints that, where present, could render the use of certain types of stormwater control measures technically impracticable to use. EPA recognizes that there could also be a cost component to the Permittee's practicability determination when these site constraints are present in a particular location. EPA would expect, for instance, that where a site has lower soil permeability, designing a stormwater control that relies on infiltration (e.g., rain gardens, bioswales, downspout disconnection, porous pavement) will cost significantly more than for a site with highly permeable soils, because the size of the control would need to increase to compensate for the lack of permeability. However, EPA also notes that the choice of BMPs rests with the permittee, and lower cost options should be considered before determining that it is impracticable to maintain pre-development runoff conditions onsite. The permittee would need to document the rationale for this conclusion in accordance with Part 2.6.1.3.2.

**Maximum Extent Practicable (MEP):**

The Phase II stormwater rule established the framework for small MS4 permits in 40 C.F.R. § 122.34. Phase II MS4 permits "require *at a minimum* that [the permittee] develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from [the] MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act." 40 C.F.R. § 122.34(a) (emphasis added). As explained in the preamble, there are three distinct legal bases for this requirement: (1) reduce pollutants to the maximum extent practicable, pursuant to CWA section 402(p)(3)(B)(iii), (2) protect water quality, pursuant to CWA section 402(p)(6), and (3) satisfy the appropriate water quality requirements of the CWA, pursuant to CWA section 402(p)(3)(B)(iii)("and such other provisions as the Administrator . . . determines appropriate for the control of such pollutants.") See 64 Fed. Reg. 68722, 68753 (Dec. 8, 1999). The storm water management plan (SWMP) for an MS4 "must include the minimum control measures described in paragraph (b) of this section." Among the minimum measures is "Post-construction storm water management in new development and redevelopment." 40 C.F.R. § 122.34(b)(5). This minimum measure includes a requirement to develop and implement a program "to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre . . ." and requires "strategies which include a combination of structural and/or non-structural best management practices (BMPs) as appropriate for your community."

EPA explained in the preamble to the Phase II rule that the implementation of MEP in permits is a flexible, iterative process involving both the permitting authority and the permittee. 64 Fed. Reg. at 68753-68754. In the case of individual permits, EPA explained that the MEP standard is to be applied based on the best professional judgment of the permit writer. *Id.* EPA also explained that "MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards." *Id.* The Region has concluded that the three-step process outlined in Parts 2.6.1.1 and 2.6.1.2 will ensure that MEP is being met for discharges from Buckley AFB's MS4. This permit condition will provide Buckley AFB MS4 flexibility to determine post-construction BMPs appropriate for its local environment, and will provide an

evaluative process to ensure that its post-construction stormwater controls will minimize water quality impacts.

The annual reporting requirements relating to post-construction stormwater controls in Part 2.6.7 also ensure that EPA will have sufficient information to conduct the broader evaluative process required to ensure that Buckley reduces pollutants in its discharge to the MEP. As EPA explained in the Phase II Rule, the MEP standard results from an "iterative" process that optimizes the reduction of stormwater pollutants, rather than a static pollution reduction requirement. Consistent with the iterative process described in the Phase II preamble, permit terms establishing MEP for a particular MS4 permit may evolve from one permit term to the next to reflect updated water quality data, the scientific literature, advancements in stormwater technology and current industry best practices.

In developing the permit conditions for the post-construction minimum measure for this permit term, Region 8 reviewed a variety of scientific research indicating that post-construction controls designed to maintain the on-site pre-development runoff conditions are an extremely effective way of reducing pollutants in stormwater discharges. Region 8 has relied on existing practices at Buckley, on best practices employed in the regulated community, and upon the most recent science and engineering relating to the control of pollutants in stormwater. This research indicated that such controls could include a variety of BMPs including infiltration and treatment-oriented approaches including, but not limited to:

- Rain Gardens
- Extended Detention Basins
- Vegetative Swales
- Infiltration Basins
- Infiltration Trenches
- Permeable Pavement
- Pervious Concrete
- Porous Asphalt Pavement
- Vegetated Filter Strip
- Stormwater Wetland
- Green Roofs

**Support Documents used in the Permit Modification:**

1. "Post Equals Pre Is the Key", D. Apt, RBF Consulting; 11th International Conference on Urban Drainage, Edinburgh, Scotland, UK

2. 40 C.F.R. Part 122 – EPA Administered Permit Programs: The National Pollutant Discharge Elimination System

3. NPDES Regulations for Revision of the Water Pollution Control Program Addressing Storm water Discharges – Final Rule 64 Fed. Reg. 68722 (Dec. 8, 1999)
33 U.S.C. § 1342 – Clean Water Act Section 402 National Pollutant Discharge Elimination System

4. MS4 Permit Improvement Guide, US Environmental Protection Agency, Office of Water, Office of Wastewater Management, Water Permits Division

5. National Research Council report titled "Urban Stormwater Management in the United States."

6. Urban Drainage and Flood Control Districts, Denver, CO, manual titled "Urban Storm Drainage: Criteria Manual – Volume 3 – Best Management Practices"

7. Draft Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) Environmental Assessment for the Reduce BASH Hazards Along East Tollgate Creek – December 2010

**Response to Comments:**

EPA received one set of combined comments on the proposed permit modification from the Natural Resources Defense Council, American Rivers, and the Conservation Law Foundation (the "commenters").

1. The commenters state that the permit delegates too much discretion to the permittee to determine what controls are practicable. Commenters also assert that it is EPA's job to ensure that there is some standard that the Permittee must ultimately achieve, and that the permit as proposed undermines the EPA-established MEP standard.

*Response: Prior to issuing the public notice of the proposed modification to the Buckley MS4 permit, EPA determined that in order to reduce pollutants in post-construction stormwater discharges to the maximum extent practicable, Buckley must implement a post-construction stormwater program based on the maintenance of pre-development runoff conditions. To meet the MEP standard, Buckley would need to implement the elements of the program described in Parts 2.6.1 through 2.6.7 of the permit. EPA has concluded, however, that the proposed language in Parts 2.6.1.1 and 2.6.1.2 may have been unclear or confusing. As a result, EPA has re-written Parts 2.6.1.1 and 2.6.1.2 to remove confusing language and to explicitly describe the three-part process that constitutes MEP for this permit.*

*To summarize this three-part process, when designing a new or redevelopment project, Buckley must first select BMPs based on their ability to maintain on-site pre-development runoff conditions. This means that Buckley must first determine what runoff conditions existed prior to development, and calculate the BMPs that will be capable of maintaining those conditions once construction is complete. One common way of doing this is to calculate the volume of stormwater that the undeveloped site is or would have been able to retain, detain, infiltrate, or treat before generating runoff. Next, Buckley must select and install these BMPs at the location of the new or redevelopment site. In some instances, Buckley may determine that the implementation of such BMPs onsite to fully maintain pre-development runoff conditions is impracticable, due to the existence of one or more of the enumerated conditions in Part 2.6.1.3.1. EPA expects that the most useful time in the development process for Buckley to complete this step is in the design phase of the project. In these limited circumstances, Buckley must complete the third step and install new, or use existing, alternative stormwater measures that will prevent or minimize water quality impacts from the runoff from the new or redevelopment site to the extent onsite management is impracticable. EPA has provided one example in the Fact Sheet (under "Reasons for Making Impracticability Determinations") of how Buckley may be able to satisfy this third step if necessary. By completing these three steps, and complying with the other requirements of Part 2.6, EPA has concluded that, for the purposes of this permit, Buckley's post-construction stormwater program will reduce pollutants in discharges from new and redevelopment sites to the MEP. In those cases where Buckley determines there are no site-specific impracticability concerns, selecting and implementing BMPs that are capable of maintaining on-site pre-development runoff conditions will meet the MEP standard.*

*EPA notes that it has removed the phrase "as defined in the SWMP" from Part 2.6.1.1 of the final permit modification. EPA has concluded that its use of this phrase was confusing. EPA is*

*clarifying that Part 2.6.1.1 requires Buckley to identify the on-site pre-development runoff conditions for each new or redevelopment project.*

*The Fact Sheet and Permit have been modified to reflect these clarifying changes.*

2. The commenters state that as proposed, the permittee is left in charge of determining when full compliance with the performance standard is required. Commenters state that the use of a non-inclusive list of impracticability factors gives Buckley too much discretion by allowing Buckley to determine whether it's practicable to implement BMPs at the site level, which results in an "impermissible self-regulatory system."

*Response: EPA agrees that the proposed list of reasons why it may be impracticable to meet Part 2.6.1.3 was non-exhaustive, and that this may have given Buckley a greater degree of latitude than is necessary to determine what made site-specific post-construction stormwater control measures impracticable. Because EPA is confident it has captured the circumstances in which meeting the requirements of Part 2.6.1.1 could be impracticable, it has changed Part 2.6.1.3 to indicate that the list of reasons for impracticability is exhaustive. EPA does not believe this should impact Buckley's ability to make site-specific operational and design decisions.*

*In making the list of impracticability reasons finite, EPA has been careful not to foreclose reasons that may arise on Buckley. For this reason, EPA considered whether it should include additional reasons for impracticability. At the suggestion of the Air Force, EPA reviewed the EISA 438 Technical Guidance (the "Guidance") that the Agency issued in December 2009. Pages 17 and 19 of the Guidance address a variety of site constraints that were identified by EPA and participating federal agencies as potentially limiting the use of on-site post-construction stormwater controls. Many of the site constraints listed in the guidance were already included as potential reasons for impracticability in the proposed permit modification. A few of the site constraints listed included some degree of water collection, use or harvesting, all of which are prohibited under Colorado water law unless an individual has an assigned water right or approval from the Colorado State Engineer. Thus EPA did not add these to the list of reasons for impracticability. EPA concluded that two of the site constraints listed in the Guidance were not captured in the draft permit modification and could arise on Buckley AFB. These two conditions relate to project site size and conflicts with State and local law. These have been added to the permit modification with additional discussion in the fact sheet.*

*The Fact Sheet and Permit have been modified to reflect this change.*

3. The commenters state that the proposed 9th (and now 11th) impracticability factor, which includes "other operational or design considerations specific to the military function of Buckley Air Force Base" is a vague catch-all that could be interpreted broadly enough to be rendered meaningless.

*Response: EPA disagrees. EPA believes that the words "military function" provide a meaningful textual limitation on this reason for determining impracticability. In relying upon this reason for such a determination, Buckley would need to demonstrate that the requirement to install on-site post-construction stormwater controls able to maintain pre-development runoff conditions*

*conflicts with operational and design concerns relating directly to Buckley's mission as a military base. In such a circumstance, the permit allows Buckley to document that meeting Part 2.6.1.1 on-site would be impracticable. A hypothetical example where providing BMPs on-site that meet Part 2.6.1.1 would be impracticable due to operational or design considerations specific to Buckley's military function is provided in the Fact Sheet (see Section entitled "Basis for Selecting Impracticability Reasons"). Operational and design considerations that would be shared by other small, non-military MS4s would likely not be specific to the military function of Buckley AFB and thus could likely not serve as the basis for an impracticability determination.*

*EPA has modified the Fact Sheet to provide an additional example of the use of this factor, but is making no changes to the Permit in response to this comment.*

4. Commenters state that EPA must determine what level of stormwater management is practicable. Commenters state that if EPA does not do this, it must review and approve determinations made by the permittee, and that after the fact review frustrates enforcement. As a result, commenters assert that if Buckley is allowed to make its own impracticability determinations, EPA must pre-approve them before the development project is constructed.

*Response: EPA agrees that federal courts have interpreted the Clean Water Act to require that stormwater management programs must be subject to meaningful review. EPA disagrees that this requires EPA to become involved in day-to-day decision making at the site level within MS4s. EPA has not ceded review of Buckley's stormwater program by giving Buckley the flexibility to make site-specific impracticability determinations during the course of new and redevelopment project design and implementation. Rather, EPA has concluded that site-specific impracticability determinations are integral to Buckley's stormwater program and do not impact Buckley's ability to reduce pollutants in post-construction stormwater discharges to the maximum extent practicable so long as it follows the procedures established in Parts 2.6.1.1 and 2.6.1.2.*

*Additionally, EPA has ensured an ongoing oversight role for itself in the Buckley permit by requiring Buckley to submit documentation for each impracticability determination it makes in its annual report. EPA and the public will have the opportunity to review Buckley's impracticability determinations each year and, in doing so, may assess whether these determinations have been made properly, and whether the scope and frequency of those determinations are adversely impacting Buckley's post-construction stormwater program. Were that to be the case, EPA would be able to modify this permit, after public notice and comment, to change this aspect of Buckley's post-construction stormwater program to ensure that post-construction stormwater discharges are being reduced to the MEP. This approach is fully consistent with the approach outlined in the preamble to the Phase II Stormwater rules of an iterative, adaptable process of determining MEP.*

*EPA is making no changes to the Fact Sheet or Permit in response to this comment.*

5. Commenters state that the permit's "alternative compliance mechanism," contained at Part 2.6.1.2 falls short of the MEP standard. Commenters provide two bases for this comment. First commenters assert that the requirements of Part 2.6.1.2 are too vague because "prevent or

minimize water quality impacts" is undefined and unclear. Second, commenters assert that other jurisdictions have shown that a higher standard is practicable, and EPA should require Buckley to retain the full volume of pre-development stormwater runoff on-site and, if not feasible, then off-site.

*Response: EPA disagrees that Part 2.6.1.2 falls short of the MEP standard. As described in response #1, the "alternative compliance mechanism" is an element of Buckley's post-construction stormwater program that, in concert, with Buckley's on-site stormwater control efforts, ensures that Buckley reduces discharges of pollutants in post-construction stormwater runoff to the MEP.*

*EPA also disagrees that the "prevent or minimize water quality impacts from the runoff from the new or redevelopment" requirement is too vague. The term is the basic regulatory requirement that EPA has employed as the standard for post-construction stormwater runoff since promulgating 40 C.F.R. § 122.34(b)(5)(i) in 1994. Moreover, the meaning of these terms, while undefined in the permit and the regulations, is easily understood. "Prevent" is commonly understood to mean to keep from happening. See e.g., Webster's 9th New Collegiate Dictionary. Likewise, "minimize" means to reduce to a minimum. Id. While this term does allow for a degree of discretion on the part of the permittee, see e.g., Entergy Corp. v. Riverkeeper, Inc., 556 U.S. 208 (2009), it clearly implies a reduction to a very small amount of pollutants. EPA has concluded that if Buckley implements additional stormwater control measures that prevent or minimize the discharge of post-construction stormwater, Buckley will meet the MEP standard.*

*EPA agrees that other jurisdictions have implemented a variety of different standards for post-construction stormwater programs in MS4 permits. EPA disagrees that those differing permit requirements are determinative of what constitutes MEP for this permit. EPA has considered other MS4 permits, the current state of stormwater control technology, and current practice at Buckley AFB to determine what level of control to require in this permit. The permittee has demonstrated it is capable of implementing post-construction stormwater controls for purposes of maintaining pre-development runoff conditions on the site when doing so is technically feasible. EPA has concluded that in this permit cycle, it is not practicable for the permittee to detain, treat, and/or infiltrate 100% of the pre-development runoff volume, as suggested by the commenters. As noted in the Phase II preamble, this assessment is not static and in future iterations of this permit, EPA will again review what measures the permittee must implement to control post-construction stormwater runoff to the MEP.*

*EPA is making no changes to the Fact Sheet or Permit in response to this comment.*