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A Partnership for Safe Chemical Weapons Destruction

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Stormwater Pollution Prevention During Plant Construction

Stormwater Pollution Prevention

As stormwater flows over a construction site, it picks up pollutants like sediment, debris and chemicals, which can impact the environment. Therefore, control of stormwater runoff is a common practice in all large-scale commercial construction projects, including the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP). The PCAPP team is actively addressing several potential sources of stormwater pollution through a variety of means during construction activities. Some of these sources include:

- Sediment from grading and excavation
- Petroleum and coolant leaks or spills from heavy equipment
- Detergents or solvents from cleaning
- Green waste from vegetation removal
- Trash from packing material and employee meal breaks
- Slurries from sawing and grinding
- Paints, cleaning agents and thinners from construction
- Slurries from concrete truck washouts
- Hazardous/sanitary waste

Regulatory Requirements

As PCAPP is being built, stormwater runoff will be managed to the requirements of the National Pollutant Discharge Elimination System (NPDES), which is part of the Clean Water Act. The NPDES stormwater program requires operators of construction sites, one acre or larger, to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. To address the potential pollution sources listed above and to ensure regulatory compliance, the PCAPP team has developed a Stormwater Pollution Prevention Plan (SWPPP), which identifies potential sources of pollution and describes practices to be used to reduce and prevent pollutants in stormwater discharges.

The goal of the SWPPP is to protect surface and groundwater resources by reducing or eliminating potential sources of pollution from coming into contact with stormwater runoff. Elements of the plan will:

- Identify and evaluate potential sources of stormwater pollution and their impact
- Manage sources of potential stormwater pollution through the use of interim and permanent industry best practices
- Outline procedures to ensure pollution prevention and control procedures are effective and current
- Provide pollution prevention training to employees
- Provide guidance for proper storage of these construction materials along with spill prevention and spill response practices

Stormwater Pollution Prevention During Plant Construction (continued)

Erosion and Sediment Control

The SWPPP provides an assortment of structural and non-structural best management practices to minimize erosion, reduce sediment and provide materials handling and spill prevention practices. By diverting natural stormwater flows around the project area, detaining stormwater runoff from site activities, and managing construction materials used at the site, contamination is reduced or prevented.

Examples of non-structural and structural best practices used at PCAPP include:

Non-structural

- Minimize on-site vehicle usage
- Implement general pollution control measures
- Manage material waste
- Spill prevention and control measures
- Concrete washouts/manage concrete waste

Structural

- Check dams, berms and swales
- Silt fences, erosion logs and straw bale barriers
- Detention basin (4.5 million gallon water capacity)
- Slope stabilization
- Concrete washouts/manage concrete waste



Colorado Department of Public Health and Environment employees inspect erosion logs and silt fencing which helps prevent sedimentation during PCAPP activities.

Stormwater Detention Basin

As construction activities continue, runoff will likely increase as more and more structures are built. One of the structural best practices that has already been implemented is a stormwater detention basin that has been constructed within the PCAPP boundaries. It is designed to reduce high levels of runoff from rain or snow storms and capture some of the sediment from the stormwater. A secondary function is to prevent downstream contamination in the event of petroleum or materials spill. During most rainstorms, the basin will not completely fill up. However, an emergency spillway is designed to safely release flows from a 100-year rainfall event.

For more information on NPDES and environmental regulations regarding stormwater visit the U.S. Environmental Protection Agency Web site at <http://cfpub.epa.gov/npdes/>. You can also visit the Colorado Department of Public Health and Environment Web site at <http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html>.