SECTION 8 | Stormwater Management

8.1 General

Stormwater can become contaminated from contact with spilled or stored materials, from contact with E&P waste, or from the erosion of soils. E&P waste management practices that have a potential of contaminating stormwater include land application, landfarming and roadspreading. States usually have statutory authority for stormwater management programs through general pollution prevention or water pollution control legislation. States should implement programs to minimize the potential for contamination of surface water from sediment and other E&P contaminants contained in stormwater.

Stormwater management requirements should be adapted to regional characteristics. These characteristics include variations in topography, rainfall (annual average, episodic and seasonal), major soil types, proximity to surface waters, floodplains, seasonal and permanent swamps, wetlands and marshes, and vegetative cover.

States should adopt a stormwater management program based on the potential effects on human health and the environment. States may choose not to adopt such a program if they find, based on field monitoring data and other scientific information, that stormwater runoff does not pose a significant risk to human health or the environment. States that make such a finding should periodically reevaluate the basis for the determination. The state program need not duplicate applicable federal regulations for stormwater management.

Stormwater management regulatory activities should be coordinated with activities of other interested parties including landowners, soil conservation agencies, land management agencies, agencies with NPDES jurisdiction, and agencies with spill response authority.

8.2 State Regulatory Elements

The state agency with stormwater management or erosion control_authority should require an operator to minimize environmental impacts caused by stormwater. These requirements should include a description of the action the operator will take to meet state program goals for the geographic location in which the activity will take place. These requirements may be spelled out in specific regulations or they may be required to be included in operator- or site-specific plans developed by operators. State program requirements should specify time frames when stormwater control measurements are to be in place and when any state notifications are to occur.

In regions where stormwater has a high potential for causing environmental degradation, states should consider the use of permits or other authorizations to assure that adequate measures will be put in place. Such permits or authorizations should conform to Section 4.1.1. (Permitting).

State stormwater management programs should contain compliance evaluation capabilities as outlined in Section 4.1.2. (Compliance Evaluation), contain enforcement capabilities as outlined in Section 4.1.3. (Enforcement), be applicable to responses to spills and releases as outlined in Section 4.2.1. (Contingency Planning and Spill Risk Management), and contain data management capabilities as described in Section 4.2.8. (Data Management).

States programs should provide for outreach and training on stormwater management requirements and practices for operators, landowners and the public. These activities should conform to Section 4.2.2.2. (Public Participation). Similarly, training should be provided for state agency personnel as outlined in Section 4.3.1.5. (Training Requirements). Where stormwater management and E&P regulatory authority reside in different agencies, oil and gas agency staff should be trained so that they can, as time and staffing patterns allow, provide information and referrals to operators.

State stormwater management programs should be evaluated periodically in accordance with Section 4.2.3 (Program Planning and Evaluation). Such evaluations should include an analysis of all aspects of the program, and procedures for making any necessary program changes identified during the evaluation.

8.3 State Agency Regulatory Program Criteria

8.3.1 Planning

Within the context of an E&P program, selection of the location for a well site, roadway, pipeline or other E&P facility is a critical component of a stormwater management program. Factors to be considered during the development of site requirements with respect to stormwater management include: minimization of the area to be disturbed, current land uses, site gradient, the type of facility to be constructed, springs and seeps, floodways, stream crossings, and the management of E&P wastes.

Other factors that should be considered in the development of stormwater management requirements include well density, distance between wells, existing roads, necessary temporary and permanent roads to be constructed, road alignment, slope, grade and length, the availability of vegetative filter strips, and

the management or disposal of trees and stumps to be removed during construction.

8.3.2 Construction

The construction of well sites, access roads, pipelines, stream crossings and crossings of wetlands, swamps and marshes can result in the contamination of stormwater and/or adjacent surface waters. Consequently, state agencies should develop standards or management practices appropriate for these activities. Similar practices may be necessary when responding to spills and releases when soils are disturbed or contaminants are mobilized by stormwater.

Standards or management practices should be appropriate for the region in which the construction activity will occur. Examples of such requirements include the construction of upgrade diversion channels and the collection of construction site runoff; the use of brush and other barriers and the stockpiling of topsoil and subsoil during clearing and grubbing; and the grading of cut and fill slopes, road embankments, road surfaces (crowned, insloping or outsloping) and roadside ditches to control water.

Similarly, requirements should be developed for bridges, causeways, cofferdams, fords and bank stabilization when surface waters are encountered. Requirements for temporary road or stream crossings and use of rock at construction entrances may be necessary.

Practices to be considered for stormwater controls during construction include drainage ditches, basins, sediment traps, berms, vegetative filter strips, sediment barriers, turnouts, culverts and cross-drains, broad-based dips and swales, waterbars, rock filters, straw bale barriers and fabric filter fence. Outlet protection should be provided for devices with outlets to surface waters.

Additional practices to be considered for pipeline construction include the use of ditchline barriers, timing of backfilling, materials used for trench backfill, location of staging areas, and the use of trench plugs. In fragile soil, wetland and marshy areas, and at stream crossings, construction mats, board roads or geo-textiles should be considered.

Criteria should be developed for temporary stabilization if permanent stabilization will be delayed. Temporary stabilization practices such as seeding with annual grasses and mulching, or seed/filter fabric combinations should be considered. Permanent stabilization can occur through the application of rock to well sites and roads, and achieving adequate growth of (or sodding with) permanent vegetation. Factors to be considered during revegetation include calculation of acreage, soil types and distribution, seed bed preparation, seed mixtures (temporary, permanent), soil amendments, and mulching and anchoring.

8.3.3 Operation and Maintenance

States should require that stormwater control measures be operated and maintained in a manner that will assure their effectiveness during site preparation, well drilling and production, and until the site is restored. These measures should be operated and maintained to control sediment as well as E&P waste and spills. Requirements regarding the frequency and type of inspection, preventative maintenance and repairs are appropriate.

8.3.4 Restoration and Reclamation

Where appropriate, states should incorporate stormwater management during the development of standards for site restoration and reclamation. These requirements should apply to the restoration of recently active sites, orphan sites, remediation sites, and sites where prior restoration efforts failed.

Where appropriate, stormwater management criteria should be developed for the removal of equipment, restoration of pits, disconnection and abandonment of pipelines, backfilling and grading, and access road reclamation.