

SECTION 4

Best Management Practices

The following narrative section provides a list and description of the potential BMPs to be used on-site during construction activities. The Water Pollution Control Drawings (WPCDs) in Appendix A show typical initial containment BMPs to minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges. The construction contractor will be responsible for the specific details of the BMPs to be used during construction, and for updating the BMP drawings at the start of and during Project construction to reflect modified or new BMPs implemented and maintained on-site in sequence with construction activities.

4.1 Schedule for BMP Implementation

Refer to Attachment I for a Project construction schedule.

BMPs will be implemented to follow the progress of construction activities. As the location of soil disturbances change, erosion controls and sedimentation controls will be adjusted accordingly to control stormwater runoff at the downgrade perimeter. BMPs will be in place throughout the entire construction period.

Sufficient erosion control and sediment control materials will be maintained on-site to allow implementation in conformance with General Permit requirements and as described in this DESCP/SWPPP. This includes implementation requirements for active areas and nonactive areas that require deployment before the onset of rain.

Run-on from off site will be directed away from all disturbed areas or collectively will be in compliance with the effluent limitations in the General Permit.

4.2 Erosion Control and Sediment Control

The site-specific combination of erosion controls and sediment controls to be used during construction will be selected by the construction contractor from those listed below.

Corresponding California Stormwater Quality Association (CASQA) *2009 Construction Handbook* fact sheets are included in Attachment J.

4.2.1 Erosion Control

Erosion control, also referred to as soil stabilization, is a source control measure designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering or binding soil particles. The Project will incorporate erosion control measures required by regulatory agency permits, contract documents, and other measures selected by the Project owner or the construction contractor.

Project activities will incorporate the following practices:

- Existing vegetation will be preserved when feasible. Vegetation will be cut to a height that will not interfere with construction and operation of the heliostat fields, instead of clearing or grading the entire field.
- Clearing and grading activities will be restricted to areas where foundations, drainage facilities, and all-weather roads must be placed.
- Temporary erosion control measures will be implemented on active and non-active disturbed areas prior to and at regular intervals throughout the defined rainy season, and year-round prior to storm events.
- Erosion in concentrated flow paths will be controlled by lining channels with a non-erodible material such as compacted riprap, geosynthetic matting, or engineered vegetation.
- Diversion berms (for example, earth dikes) or drainage swales will be used, as needed, to redirect stormwater run-on or on-site stormwater flow around critical facilities or away from disturbed soil areas and stockpiles.
- Non-active areas will be stabilized with effective soil cover (such as aggregate, paving, or vegetation) as soon as feasible after construction or disturbance is complete and no later than 14 days after construction or disturbance in that portion of the site has temporarily or permanently ceased.
- The use of plastic materials will be limited when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the plastic materials will be resistant to solar degradation.
- Areas compacted during construction activities will be restored, as appropriate, to approximate preconstruction compaction levels to minimize the opportunity for any increase in surface runoff.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook BMP fact sheets*.
- A combination from the following list of erosion control measures will be implemented during Project construction:
 - EC-1 Scheduling
 - EC-2 Preservation of Existing Vegetation
 - EC-3 Hydraulic Mulch
 - EC-5 Soil Binders
 - EC-6 Straw Mulch
 - EC-7 Geotextiles and Mats
 - EC-8 Wood Mulching
 - EC-9 Earth Dikes and Drainage Swales
 - EC-10 Velocity Dissipation Devices
 - EC-11 Slope Drains
 - EC-12 Streambank Stabilization
 - EC-14 Compost Blankets
 - EC-15 Soil Preparation/Roughening
 - EC-16 Non-vegetative Stabilization

4.2.2 Sediment Control

Sediment controls are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. The Project will incorporate sediment control measures required by regulatory agency permits, contract documents, and other measures selected by the Project owner or the construction contractor. .

Project activities will incorporate the following practices:

- Effective sediment perimeter controls will be established and maintained at locations where runoff discharges off site.
- All perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits will be maintained and protected from activities that reduce their effectiveness.
- Sediment controls will be implemented at the draining perimeter of disturbed soil areas, at the toe of slopes, and at outfall areas.
- Stone filters and check dams will be strategically placed, as needed, throughout the Project site to provide areas for sediment deposition and to promote the sheet flow of stormwater prior to leaving the Project site boundary. Where available, native materials (rock and gravel) will be used for the construction of the stone filter and check dams. Stone filters and check dams are not intended to alter drainage patterns but to minimize soil erosion and promote sheet flow.
- Downgradient drop inlets and culverts, if any, will be protected with sediment control measures year-round.
- If utilized, sediment basins will be designed, at a minimum, according to the method provided in *CASQA 2009 Construction Handbook*.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook* BMP fact sheets.
- A combination from the following list of sediment control measures will be implemented during Project construction:

SE-1	Silt Fence
SE-2	Sediment Basin
SE-3	Sediment Trap
SE-4	Check Dams
SE-5	Fiber Rolls
SE-6	Gravel Bag Berm
SE-7	Street Sweeping and Vacuuming
SE-8	Sandbag Barrier
SE-9	Straw Bale Barrier
SE-10	Storm Drain Inlet Protection
SE-11	Active Treatment System
SE-12	Temporary Silt Dike

- SE-13 Compost Socks and Berms
- SE-14 Biofilter Bags

4.2.3 Tracking Control

All construction entrances and exits will be stabilized to minimize or eliminate soils from being tracked off site by vehicles or construction equipment.

Project activities will incorporate the following practices:

- All immediate access roads will be inspected daily. At a minimum, any sediment or other construction activity-related materials that are deposited on the roads will be removed (by vacuuming or sweeping) daily and before any rain event.
- Construction activity traffic to and from the Project site will be limited to entrances and exits that employ effective controls to prevent off site tracking of sediment.
- A tire cleaning station will be located in the Common Area.
- All vehicles used to transport solid bulk material on public roadways and that have the potential to cause visible emissions will be provided with a cover, or the materials will be sufficiently wetted and loaded onto the trucks to provide at least 2 feet of freeboard.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook* BMP fact sheets.

The following tracking control measures will be implemented during Project construction:

- TC-1 Stabilized Construction Entrance/Exit
- TC-2 Stabilized Construction Roadway
- TC-3 Tire Wash

4.2.4 Wind Erosion Control

During construction of the Project, dust erosion control measures will be implemented to minimize the loss of wind-blown soil from the site.

Project activities will incorporate the following practices:

- Disturbed soil areas of the Project site will be watered regularly to control dust and to maintain optimum moisture levels for compaction as needed, but to avoid runoff, the areas will not be watered excessively. Sediment controls may be used at the edges of these areas as necessary to minimize sediment discharge.
- Areas of high erosion may require application of an approved palliative to reduce dust and prevent excess moisture on the road.
- No vehicle will exceed posted speed limits within the construction site. The construction site entrances will be posted with visible speed limit signs.

Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook* BMP fact sheets.

The following control method will be implemented for dust suppression:

WE-1 Wind Erosion Control

4.3 Non-stormwater and Materials Management

Stormwater discharges and authorized non-stormwater discharges regulated by the General Permit will not contain a hazardous substance equal to or in excess of reportable quantities established in 40 CFR 117.3 and 40 CFR 302.4, unless a separate NPDES has been issued to regulate those discharges.

The discharger will minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve BAT for toxic and nonconventional pollutants and BCT for conventional pollutants. Non-stormwater management and materials management BMPs are source control BMPs that prevent pollution by limiting or reducing potential pollutants at their source or eliminating off site discharge.

4.3.1 Non-stormwater Management

The Project will comply with good engineering practices, applicable laws, and regulations for the storage and use of these materials to minimize the potential for a release of hazardous materials.

Project activities will incorporate the following practices:

- A dedicated fueling, maintenance, and vehicle storage area will be protected with berms and/or dikes to prevent run-on and runoff and to contain spills. Secondary containment around fuel/oil tanks (stationary or mobile) will meet the minimum requirements of EPA 40 CFR Part 112 with regard to secondary containment or more stringent state requirements, if applicable. Any spills will be contained and cleaned up immediately. Any soil impacted by fuel or oil spills will be removed and disposed of by a licensed hauler at an approved disposal site.
- Self-propelled vehicles will be fueled off site or at the temporary fueling area.
- Fuel trucks will also be used for on-site fueling, whether at the temporary fueling area or for mobile fueling elsewhere on the site. Drip pans will be used for mobile fueling. Each fuel truck will be equipped with absorbent spill cleanup materials and a spill containment boom at all times.
- Drip pans or absorbent pads will be used for vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids.
- Vehicles and construction equipment will not be washed on-site.
- Vehicles and equipment will be inspected daily and before coming on-site for signs of leaks and will be on a regular maintenance schedule.
- Drip pans or absorbent materials will be placed under paving equipment when not in use; paving equipment will be parked over plastic to prevent soil contamination.

- During dewatering activities, if any contamination is detected via odors or visible sheens, the collected stormwater will be handled and properly disposed of in a manner consistent with federal, state, and local regulations.
- Batch plants will be located away from watercourses or drainage courses. Continuous interior AC or PCC berms will be constructed around batch plant equipment (mixing equipment, silos, concrete drop points, conveyor belts, admixture tanks, etc.) to facilitate proper containment and cleanup of releases. Runoff from the paved or unpaved portion of the batch plant will be directed into a sump and pipe to a lined washout area or dewatering tank.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook BMP* fact sheets.
- A combination of the following list of non-stormwater management measures will be implemented during Project construction:
 - NS-1 Water Conservation Practices
 - NS-2 Dewatering Operations
 - NS-3 Paving and Grinding Operations
 - NS-4 Temporary Stream Crossing
 - NS-5 Clear Water Diversion
 - NS-6 Illicit Connection/Discharge
 - NS-7 Potable Water/Irrigation
 - NS-8 Vehicle and Equipment Cleaning
 - NS-9 Vehicle and Equipment Fueling
 - NS-10 Vehicle and Equipment Maintenance
 - NS-12 Concrete Curing
 - NS-13 Concrete Finishing
 - NS-16 Temporary Batch Plants

4.3.2 Waste Management and Materials Pollution Control

Waste management and materials pollution control BMPs are source control BMPs that prevent pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. These BMPs also involve day-to-day operations of the construction site, are under the control of the construction contractor, and are additional “good housekeeping practices,” which involve keeping a clean, orderly construction site.

- Good housekeeping practices will be followed to reduce the risk of pollutants entering stormwater discharges. All construction personnel will be responsible for monitoring and maintaining housekeeping tasks and reporting potential problems to the construction contractor’s site manager.
- Only enough products required for doing the job will be stored.
- All materials will be stored in a neat and orderly manner in the appropriate containers. Materials that may adversely impact stormwater, such as paint, oils, greases, and sealers, will be stored in covered areas such as temporary/permanent buildings or trailers. Secondary containment will be provided for the storage of hazardous materials.

- Temporary containment facilities for hazardous materials will provide for a spill containment volume able to contain precipitation from a 25-year storm event, plus 10 percent of the aggregate volume of all containers or 100 percent of the capacity of the largest container within its boundary, whichever is greater. The containment facility will be impervious to the materials stored therein for a minimum contact time of 72 hours.
- All hazardous materials will be handled and stored in accordance with applicable codes and regulations.
- Products will be kept in the original container with the original manufacturer's label.
- Products will not be mixed unless recommended by the manufacturer.
- Containers will be emptied prior to their disposal.
- Products will be used and disposed of according to the manufacturer's recommendations.
- Rinse or wash waters or materials will be collected and disposed of off site in accordance with applicable regulations.
- When and where appropriate, posters, bulletin boards, or meetings will be used to remind and inform construction personnel of required good housekeeping, maintenance, and cleanup procedures.

Project activities will incorporate the following practices:

- Stockpiles will be managed according to the type of material being stockpiled and the season, as follows:
 - Soil stockpiles will be covered or protected with soil stabilization measures and perimeter sediment barriers during the rainy season, periods of heavy winds greater than 25 miles per hour, and/or when inactive for longer than 10 days; and protected with perimeter sediment barriers during the non-rainy season.
 - Concrete/asphalt rubble, rock, and aggregate base and subbase stockpiles will be covered and protected with perimeter sediment barriers year-round unless actively being used.
 - Cold mix asphalt stockpiles will be protected with perimeter sediment barriers and covered year-round unless actively being used.
 - Stockpiled waste material will be protected with perimeter sediment barriers and covered year-round unless actively being used.
- Exposure of construction materials (not including materials designed to be outside, such as equipment pads) to precipitation will be minimized.
- Curbs and dikes will be provided around all chemical storage areas, hazardous waste products, areas with possibility of oil spill, and washout areas to prevent stormwater run-on and runoff.

- No erodible landscape material (such as pesticides) will be applied within 2 days before a forecasted rain event or during periods of precipitation. Erodible landscape material will be stored on pallets and covering when not being used or applied.
- A licensed sanitary waste management contractor will collect all sanitary wastes from the portable units. The units will be serviced weekly, at a minimum. Portable units will be placed on a flat area at least 25 feet from drain inlets. Portable units will be anchored to prevent blowing or tipping over, and all leaks or spills will be reported immediately. Portable units will be provided with secondary containment.
- Waste disposal containers will be covered at the end of every business day and during a rain event. Drainage from the waste disposal containers, if any, will be captured and will not be allowed to drain off site. Waste containers will be emptied a minimum of once per week, or more often if necessary, and the trash will be hauled to the local waste disposal facility. No construction waste will be buried on-site. All site personnel will be instructed regarding the correct procedure for waste disposal.
- Concrete washout areas and other washout areas that may contain additional pollutants will be provided with an impermeable containment so there is no discharge into the underlying soil and onto the surrounding areas. Excess concrete and concrete washout slurries will be discharged to a temporary concrete washout facility. The washout facility will be maintained to provide adequate holding capacity with a minimum freeboard of 4 inches for abovegrade facilities and 12 inches for belowgrade facilities. The washout facility will be cleaned, or a new facility will be constructed, once the washout is 75 percent full. Dried concrete will then be removed and disposed of at an approved off site location. No surplus concrete or drum washwater will be disposed of onto the ground surface.
- Regular inspections of the material storage areas will be conducted. Preventive maintenance will include regular inspection and maintenance of structural stormwater controls (for example, catch basins and oil/water separators), as well as other facility equipment and systems.
- Operators and construction personnel will be asked to report unusual conditions to the appropriate personnel. If contaminated soil is encountered during construction, the area and/or material will be properly contained during investigative actions. If soils require temporary stockpiling, piles will be placed on and covered with plastic sheeting or tarps that are secured safely and bermed to prevent runoff from leaving the area. Samples will be collected and sent to a certified analytical laboratory for characterization. If contamination is detected, the waste will be handled and properly disposed of in an authorized waste management facility. In addition, the appropriate local, state, and federal agencies will be notified. The construction contractor will establish contingencies for the proper disposal of contaminated soils (for example, use of licensed hauler, approved landfill) early in the construction period.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable *CASQA 2009 Construction Handbook* BMP fact sheets.

Spill prevention and cleanup practices will be as follows:

- Spill cleanup materials, material safety data sheets (MSDSs), a material inventory, and emergency contact numbers will be maintained at the material storage area. A material inventory will be prepared by the construction contractor and inserted in Attachment K.
- Site personnel will be instructed on spill cleanup procedures and location of cleanup supplies, and the construction contractor will be responsible for implementing these practices.
- Materials and equipment for the cleanup of a relatively small spill will be kept in the material storage area. Cleanup equipment may include brooms, rags, gloves, shovels, goggles, sand, sawdust, absorbent, plastic or metal trash containers, and protective clothing.

Spill response procedures will be as follows:

- Step 1: Upon discovery of a spill, stop the source of the spill.
- Step 2: Cease all spill material transfer until the release is stopped and waste is removed from the spill site.
- Step 3: Initiate containment to prevent spill from reaching surface waters.
- Step 4: Notify construction contractor supervisor of the spill.
- Step 5 (*by construction contractor supervisor*): Notify the construction contractor emergency coordinator immediately and coordinate further cleanup activities.
- Step 6 (*by construction contractor personnel or qualified contractors*): Report any significant spill of hazardous material to the appropriate state and/or local agencies by construction contractor personnel or qualified contractors. Table 2 lists the Project's environmental emergency contacts.
- Step 7: Record a description of the spill, cause, and cleanup measures taken.
- Step 8: Review and amend the DESCP/SWPPP to address the violation if the general objective of reducing or eliminating pollutants in stormwater discharges has not been achieved.

TABLE 2
Environmental Emergency Telephone List

Company/Organization	Telephone Numbers
Primary Facility Emergency Coordinator:	TBD
24-hour Telephone Number:	TBD
Alternate Facility Emergency Coordinator:	TBD
Other Resources	
3E Company (MSDS by FAX):	(800) 451-8346
Chemtrec (emergency chemical information):	(800) 424-9300
Poison Control Center:	(800) 662-9886
Federal Agency	
U.S. Coast Guard/National Response Center:	(800) 424-8802
State Agencies	
California Office of Emergency Services (OES):	(800) 852-7550
California Department of Toxic Substances Control (DTSC)*:	(800) 852-7550
California Department of Fish and Game*:	(800) 852-7550
California State Lands Commission:	(562) 590-5201
Regional Water Quality Control Board (RWQCB)*:	(760) 340-4521
Local Contacts	
Riverside County Department of Environmental Health:	(760) 863-8976
Fire:	911
Police:	911

*DTSC, RWQCB and CDFW have requested that emergency notifications to these offices be made through the OES 800 number.

The following list of waste management and materials pollution control measures will be implemented during Project construction:

- WM-1 Material Delivery and Storage
- WM-2 Material Use
- WM-3 Stockpile Management
- WM-4 Spill Prevention and Control
- WM-5 Solid Waste Management
- WM-6 Hazardous Waste Management
- WM-7 Contaminated Soil Management
- WM-8 Concrete Waste Management
- WM-9 Sanitary and Septic Waste Management
- WM-10 Liquid Waste Management

4.4 Post-construction Stormwater Management

4.4.1 Post-construction Control Practices

The majority of the Project site will maintain the original grades and natural drainage features and, therefore, will require no added storm drainage control. In limited areas, such as the power blocks, substation, heliostat assembly buildings, and administrative areas, the

stormwater management system will include diversion channels, bypass channels, or swales to direct run-on flow from upslope areas and runoff flow through and around each facility. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent will be provided to allow positive, puddle-free drainage. To reduce erosion, storm drainage channels may be lined with a nonerodible material such as compacted riprap, geosynthetic matting, or engineered vegetation. The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event.

Solar field development will maintain unobstructed sheet flow, with water exiting the site in existing natural contours and flowpaths. Relatively small rock filters and local diversion berms through the heliostat fields may be installed as needed to discourage water from concentrating and maintain sheet flow.

Grading and mowing during construction may directly result in a permanent loss of a large portion of the ephemeral drainages that are present because of their shallow depths; however, affected drainages would be expected to reform naturally in this landscape where flow patterns are highly variable, both temporally and spatially.

Paved access roads will be designed to allow stormwater to flow unimpeded across the roadways in order to maintain the existing sheet flow pattern.

Post-construction stormwater management features will be maintained by the Project owner.

