



Storm Water Permit and Monitoring

GENERAL

It is the Contractor's responsibility to obtain a National Pollutant Discharge Elimination System (NPDES) permit coverage under ADEM Administrative Code Chapter 335-6-12 (Storm Water Permit) from the Alabama Department of Environmental Management (ADEM) for Storm Water Discharge.

The Contractor shall utilize erosion control techniques on all areas of the project to prevent sedimentation from leaving the project area. He shall install and maintain silt fencing, hay bales, check dams, or whatever means necessary to prevent sedimentation and other pollutants from leaving the project area or entering "Waters of the State". Erosion control measures shall be in strict accordance with Alabama Handbook for Erosion Control, Sediment Control, and Storm Water Management on Construction Sites and Urban Areas.

A licensed professional civil engineer must prepare a storm water control plan and specifications for any area of one acre or more disturbed.

The Civil Engineer of Record will provide all NPDES inspections and reports for the project as outlined in ADEM Administrative Code Chapter 335-6-12. The Engineer shall review, sign, and return inspection reports to the Alabama Department of Environmental Management with copies to the UA project Manager.

The Contractor is responsible for his operations that may require monitoring oil & grease, etc. as outlined in ADEM Administrative Code Chapter 335-6-12.

The Contractor will furnish a Storm Water Permit registration package to the Owner before construction. The Storm Water Permit registration package will include the following:

- Typical transmittal letter to the Alabama Department of Environmental Management.
- "Notice of Registration" filled out with project information.
- Project area map.
- An amount of retainage of final payment shall be withheld from the contractor until the storm water termination registration request form is final, accepted and approved by ADEM and the University of Alabama. The amount to be determined by Owner.

MATERIALS

Erosion Control Materials:

- Materials used for erosion control measures shall be in accordance with Section 665.02 of Alabama Highway Department Specifications and shall include hay bales, sandbags, silt fencing, rip rap, crushed stone, mulch or other materials necessary in order to accomplish erosion control. Hay bales are accepted but sediment logs are preferred.



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- Silt fence is not accepted around yard inlets or any concentrated area inlet, manufactured inlet protection devices must be used, submittal data must be submitted to the University of Alabama and approved before installation.

Erosion Control Measures:

- Erosion control measures shall be performed on all disturbed area in accordance with the Alabama Handbook for Erosion Control, Sediment Control, and Storm Water Management on Construction Sites and Urban Areas and with Section 665, Alabama Highway Department Specifications.
- In accordance with Section 665 of Alabama Highway Department Specifications, temporary erosion control work shall involve the construction of temporary berms, dikes, drains, fences, dams, etc. with the use of temporary seeding, mulching, erosion control netting, hay bales, sandbags, check dams, etc. as necessary in order to prevent silt and soil from leaving rights-of-way and entering private property or from washing into drainage structures located on State or County rights-of-way.
- **Erosion control measures shall be maintained by the Contractor through the warranty period of the contract. If additional measures are required to correct problems which might occur, these shall be performed by the Contractor at no additional cost to the Owner. It is the responsibility of the holder of the storm water permit to maintain the erosion control structures until the storm water termination registration request form is final, accepted and approved by ADEM and the University of Alabama.**

Construction Exit Pad:

- Minimum 6" deep, 50 feet long and 20 feet wide
- Aggregate should be Alabama Highway Department coarse aggregate gradation No. 1.
- All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMP's.
- Check for damage and repair periodically.
- Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.
- Replace gravel material when surface voids are filled with sediment.



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- Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.
- If traveling over the rock stabilized pad does not remove the mud from the construction vehicles, a wash area should be provided for that purpose. Whenever washing is used, the wash water shall be collected in a sediment basin and allowed to settle before leaving the site.

Temporary and Permanent Seeding:

On areas that will have no additional disturbance, permanent vegetation should be applied immediately to the site. On areas where work is to be interrupted or delayed for 14 working days or longer, such as topsoil stockpiles, the area should be stabilized using mulch or temporary seeding. Other stabilization measures such as erosion control blankets should be used in extreme conditions, such as steep slopes and channels.

Inlet Protection:

- The barrier of blocks should be at least 12" high and no greater than 24" high.
- If needed, lateral support may be given to subsequent rows by placing 2"x4" wood studs through block openings.
- Place a minimum of 1 block on the bottom row (more as needed) on its side to allow for dewatering the pool.
- The design storm for the inlet should be able to enter the inlet without bypass flow.
- Stone should be piled against the wire to top the block barrier, as shown in the typical details in Figure BIP-1 (see Section IV). Alabama Highway Department No. 1 coarse aggregate should be used.
- If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.
- The height of the fabric should be 1.5 feet maximum and 1 foot minimum. The base of the fabric should be buried at least 12" below the ground surface.
- The approach to the fabric structure should be less than 1% slope.

Fabric Fence Specifications:

- Type A Slit Fence Type is to be used in all applications.



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- The silt fence should be installed as shown in Figure SB-1 (see Section IV).
- Materials for posts and fasteners are shown in Tables SB-3 and SB-4 (see Section IV).
- Details for overlap of the silt fence and fastener placement are shown in Figure SB-4 (see Section IV).
- Have an expected life and should be replaced every six months.

| Land Slope (Percent) | Maximum Slope Length Above Fence (Feet) |
|----------------------|---|
| <2 | 100 |
| 2 to 5 | 75 |
| 5 to 10 | 50 |
| 10 to 20* | 25 |
| >20 | 15 |

* In areas where the slope is greater than 10%, a flat area length of 10 feet between the toe of the slope to the fence should be provided.

Straw/Hay Bale Protection:

- The slope length behind the barrier should be restricted according to Table SST-1.
- Bales should be 14" x 18" x 36".
- Two 36" long (minimum) 2" x 2" hardwood stakes should be driven through each bale. Alternate anchors can be 2 pieces of No. 4 steel rebar, 36" long (minimum). See Figure SST-1 and SST-2 (see Section IV) for details on proper installation of straw bales.
- Straw and hay bales have a relatively short period of usefulness and should not be used if the project duration is expected to exceed 3 months. Bale placement should result in the twine or cord being on the side and not the bottom of the bale.

| Land Slope (Percent) | Maximum Slope Length Above Bale (Feet) |
|----------------------|--|
| <2 | 75 |
| 2 to 5 | 50 |
| 5 to 10 | 35 |
| 10 to 20 | 20 |
| >20 | 10 |

Groundskeeping:

The following inspection and maintenance procedures need to be followed to maintain adequate sediment and erosion controls:



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- The contractor shall inspect BMP's daily and correct any deficiencies.
- A complete and comprehensive inspection shall be performed a minimum of once a month, by a QCI, QCP, or a qualified person under the direct supervision of a QCP.
- A complete and comprehensive inspection shall be performed a minimum of once every six months by a QCP or a qualified person under the direct supervision of a QCP.
- A complete and comprehensive inspection shall be promptly performed by a QCI, QCP, or a qualified person under the direct supervision of a QCP, after any accumulation of rainfall greater than $\frac{3}{4}$ " within a 24-hour period.
- Following all above inspections, a report shall be issued to the University as well as the contractor including findings and suggestion to repair of any issues. The BMP inspection report shall be in standard form found in page 9 of section 02239.
- All measures need to be maintained in good working order. If a repair is necessary, it should be initiated within 24 hours of report.
- Silt fence and straw bales need to be inspected weekly for proper anchorage and leakage underneath. Silt fencing should also be inspected for tears.
- Built-up sediment needs to be removed from silt barriers when it has reached $\frac{1}{2}$ of the height of the barrier. Sediment needs to be placed in a stabilized site to prevent re-entry into the same site or another entrapment area.
- Sediment basins need to be inspected for depth of sediment on a monthly basis and built up sediment needs to be removed when $\frac{1}{2}$ of the basin volume is filled.
- Temporary and permanent seeding and plantings need to be inspected for bare spots, washouts and healthy growth. A person should be designated to be responsible for maintaining planted areas until growth has reached 1" in height and the area planted has 70% ground cover.

Petroleum Products:

All vehicles kept on the site need to be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. A Spill Prevention Control and Countermeasures (SPCC) plan should be developed for the facility to address the safe storage, handling and clean up of petroleum products and other chemicals. Petroleum products should be stored in tightly sealed containers, which are clearly labeled. If petroleum products are stored on site, a secondary containment facility will be required if the cumulative



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storage capacity of all tanks, greater than 55 gallons, at the site exceeds 1,320 gallons. Any asphalt substances used on-site should be applied according to the manufacturer's recommendations.

Fueling and Servicing:

No fueling, servicing, maintenance, or repair of equipment or machinery should be done within 50 feet of a stream, or within 100 feet of a stream classified for public water supply (PWS) or Outstanding Alabama Water (OAW), or designated as an Outstanding National Resource Water (ONRW), or a sinkhole.

Mud Tracking:

A stabilized construction entrance needs to be designated on the plan. The practice construction exit pad provided design details for planning such an entrance. Only designated entrances should be used for construction access to the site. The General Contractor should be responsible for keeping mud cleaned from adjoining streets on a daily basis if needed.

Concrete Trucks:

Concrete trucks should be allowed to wash only in locations where discharge is directed into a sediment basin. It is not permissible to discharge concrete wash directly to streams or storm drains. Alkalinity and chemical additives could be harmful to fish, stream bottom macro invertebrates and wildlife.

Disposal of Oil:

No fuels, oils, lubricants, solvents, or other hazardous materials can be disposed of on the site. All hazardous material must be properly disposed of in accordance with State law.

Trash/Solid Waste:

The General Contractor is responsible for disposing of all solid waste from the site in accordance with State law. Dumpsters or other collection facilities must be provided as needed. Solid waste may not be buried on the site.

Sanitary Waste:

The General Contractor is responsible for providing sanitary facilities on the site. Sanitary waste may be disposed only in locations having a State permit.

Other Discharges:



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Water for pressure testing sanitary sewers, flushing water lines, sand blasting, concrete cleansing, etc., may be discharged only in approved areas. Discharge of hydrostatic test water may require additional permitting, particularly if chlorinated public water is used.

Spill Controls:

In addition to the good housekeeping practices and material management practices listed previously, the following procedures need to be followed for spill prevention and clean-up:

- Manufacturer's recommended methods for spill cleanup needs to be clearly posted and site personnel need to be made aware of the procedures and the location of the information and clean up supplies. Refer to material safety data sheets.
- Material and equipment necessary for spill clean up needs to be kept in the material storage area on-site. Equipment and materials include, but are not limited to; brooms, dust pans, mops, rags, gloves, goggles, absorbent clay (kitty litter), sand, sawdust, absorbent mats, and plastic and metal trash containers specifically for this purpose.
- All spills need to be cleaned up immediately after discovery and properly containerized for proper disposal. Burial is not acceptable.
- The spill area must be kept well ventilated and personnel need to wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material must be reported immediately to the appropriate state or local government agency, regardless of the size.
- The spill prevention plan needs to be adjusted to include measures to prevent this type of spill from being repeated, and the plan needs to show how to clean up the spill if another one does occur.

Contaminated Soils:

Removal of contaminated soils and underground storage tanks should be based on information provided by the Alabama Department of Environmental Management following a proper site assessment.

Hazardous Products:

- Products must be kept in original containers unless they are not resealable. If a product is transferred to a new container, it must be properly marked and labeled.
- Original labels and material safety data sheets should be retained.



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- If surplus product must be disposed, disposal must be done in accordance with Alabama Department of Environmental Management regulations.

Air Emissions:

Burning

Burning on the site may require a permit from the Alabama Forestry Commission. County or city ordinances may also apply. Starting disposal fires with diesel fuel or old tires is not a recommended practice. The use of burn pits with fans to generate hot disposal fires decreases the fire disposal time and minimizes smoke.

Dust Control:

Apply measures that minimize dust. Stabilizing areas with mulch as soon as possible can minimize dust. Watering should be provided in unstabilized areas.

Other Good Groundskeeping Practices:

In addition to the forgoing, the following good housekeeping practices need to be followed during the construction of the project.

- All materials stored on-site should be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products should be kept in their original containers with the original manufacturer's label.
- Manufacturer's recommendations for proper use and disposal must be followed (see Material Safety Data Sheet).
- The site superintendent should inspect daily to ensure proper usage, storage and disposal of materials.
- Fertilizers need to be applied only in the minimum amounts recommended by the manufacturer.
- All paint containers need to be tightly sealed and stored when not required for use. Excess paint shall not be dumped into the storm sewer system but should be properly disposed of according to manufacturer's instructions (see Material Safety Data Sheets) and State regulations.



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- The site should be kept clean and well groomed (trash picked up regularly, weeds mowed and signs maintained).

ADEM Permitting

The contractor holding the ADEM permit is responsible for maintaining all BMP's until ADEM has accepted the termination request. It is the responsibility of the contractor (ADEM Permit Holder) to acquire the termination of the permit and supply termination acceptance form from ADEM to the Owner before final payment will be approved.