Storm Water Pollution Prevention Plan (SWPPP) Completeness Checklist

Permittee: El Dorado Chemical Company
Project Name: El Dorado Chemical Company
Project City: El Dorado

Tracking Number: ARR15 4223
Location of SWPPP on-site: Environmental Department

Yes = Complete
No = Incomplete/Deficient
N/A = Not applicable to project

Yes	No	N/A		Permit Section Citation	Notes
			A. A site description, including:		
x			1. Project description, intended use after NOT	Part II.A.4.A.1	
x			2. Sequence of major activities	Part II.A.4.A.2	
x			3. Total & disturbed acreage	Part II.A.4.A.3	
x			4. Pre- and post-construction runoff coefficient OR soil/discharge data	Part II.A.4.A.4	
x			**B. Responsible Parties: All parties dealing with the SWPPP and the areas they are responsible for on-site.**	Part II.A.4.B	
			C. Receiving Water.	Part II.A.4.C	
		x	-MS4 Name	Part II.A.4.C	
x			-Ultimate Receiving Water	Part II.A.4.C	
			D. Documentation of permit eligibility related to Impaired Water Bodies and Total Maximum Daily Loads (TMDLs).		
x			1. Identify pollutant on 303(d) list or TMDL	Part II.A.4.D.1	
x			2. Is construction activity or the specific site listed as cause?	Part II.A.4.D.2	
x			3. Measures taken to reduce pollutants from the site.	Part II.A.4.D.3	
x			**E. Attainment of Water Quality Standards After Authorization.**	Part II.A.4.E	
x			**F. Site Map --- See End of Evaluation Form**	Part II.A.4.F	
			G. Description of Controls:		
			1. Erosion and sediment controls, including:		
x			a. Initial site stabilization	Part II.A.4.G.1.a	
x			b. Erosion and sediment controls	Part II.A.4.G.1.b	
x			c. Replacement of inadequate controls	Part II.A.4.G.1.c	
x			d. Removal of off-site accumulations	Part II.A.4.G.1.d	
x			e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e	
x			f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f	
		x	g. Off-site storage areas and controls	Part II.A.4.G.1.g	
			2. Stabilization practices:		
x			a. Description and schedule for stabilization	Part II.A.4.G.2.a	
x			b. Description of buffer areas	Part II.A.4.G.2.b	
x			c. Records of stabilization	Part II.A.4.G.2.c	
x			d. Deadlines for stabilization	Part II.A.4.G.2.d	
			3. Structural Practices:		
x			-Describe structural practices to divert flows, store flows, or otherwise limit runoff	Part II.A.4.G.3	
		x	a. Sediment basins	Part II.A.4.G.3.a.1	
		x	-Are more than 10 acres draining to a common point? If so, are sediment basins included?	Part II.A.4.G.3.a.1	
		x	-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1	
		x	-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1	
x			b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b	
			H. Other controls including:		
x			1. Solid waste control measures	Part II.A.4.H.1	
x			2. Vehicle off-site tracking controls	Part II.A.4.H.2	
x			3. Compliance with sanitary waste disposal	Part II.A.4.H.4	
x			4. Does the site have a concrete washout area controls?	Part II.A.4.H.5	
x			5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash areas controls?	Part II.A.4.H.6	

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				Permit Section Citation	Notes
x			**I. Identification of allowable non-storm water discharges**	Part II.A.4.I	
		x	-Appropriate controls for dewatering, if present	Part I.B.12.C	
x			**J. Post construction stormwater management.**	Part II.A.4.J	
x			**K. State or local requirements incorporated into the plan.**	Part II.A.4.K	
			L. Inspections		
x			1. Inspection frequency listed?	Part II.A.4.L.1	
			2. Inspection form	Part II.A.4.L.2	
x			Ours.		
		x	If not ours, does it contain the following items:		
		x	a. Inspector name and title	Part II.A.4.L.2.a	
		x	b. Date of inspection.	Part II.A.4.L.2.b	
		x	c. Amount of rainfall and days since last rain event (14 day only)	Part II.A.4.L.2.c	
		x	d. Approx beginning and duration of storm event	Part II.A.4.L.2.d	
		x	e. Description of any discharges during inspection	Part II.A.4.L.2.e	
		x	f. Locations of discharges of sediment/other pollutants	Part II.A.4.L.2.f	
		x	g. BMPs in need of maintenance	Part II.A.4.L.2.g	
		x	h. BMPs in working order, if maintenance needed (scheduled and completed)	Part II.A.4.L.2.h	
		x	i. Locations that are in need of additional controls	Part II.A.4.L.2.i	
		x	j. Location and dates when major construction activities begin, occur or cease	Part II.A.4.L.2.j	
		x	k. Signature of responsible/cognizant official	Part II.A.4.L.2.k	
x			3. Inspection Records	Part II.A.4.L.3	
x			4. Winter Conditions	Part II.A.4.L.4	
x			5. Adverse Weather Conditions	Part II.A.4.L.5	
x			**M. Maintenance Procedures**	Part II.A.4.M	
x			**N. Employee Training**	Part II.A.4.N	
x			**Signed Plan Certification**	Part II.A.7. and Part II.B.10	
			F. Site Map showing:		
x			1. Pre-construction topographic view	Part II.A.4.F.1	
x			2. Drainage flow	Part II.A.4.F.2	
x			3. Approximate slopes after grading activities	Part II.A.4.F.2	
x			4. Areas of soil disturbance and areas not disturbed	Part II.A.4.F.3	
x			5. Location of major structural and non-structural controls.	Part II.A.4.F.4	
x			6. Location of main construction entrance and exit.	Part II.A.4.F.5	
x			7. Areas where stabilization practices are expected to occur.	Part II.A.4.F.6	
		x	8. Locations of off-site materials, waste, borrow area or storage area.	Part II.A.4.F.7	
x			9. Locations of areas used for concrete wash-out.	Part II.A.4.F.8	
		x	10. Locations of surface waters on site.	Part II.A.4.F.9	
		x	11. Locations where water is discharged to a surface water or MS4.	Part II.A.4.F.10	
x			12. Storm water discharge locations.	Part II.A.4.F.11	
		x	13. Areas where final stabilization has been accomplished.	Part II.A.4.F.12	

EL DORADO CHEMICAL COMPANY

Details

Filing Number:
1900404572
Name Type:
Legal Name
Status:
In Existence
Corp type:
Domestic For Profit Business Corporation
Jurisdiction:
Oklahoma
Formation Date:
3 May 1983

Registered Agent Information

Name:
DAVID M SHEAR
Effective:
N/A
Address:
16 S PENN AVE
City, State , ZipCode:
OKC OK 73107

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For service of process contact the Secretary of State's office.

Corporation Name	EL DORADO CHEMICAL COMPANY
Fictitious Names	
Filing #	100060003
Filing Type	Foreign For Profit Corporation
Filed under Act	For Bus Corp; 958 of 1987
Status	Good Standing
Principal Address	
Reg. Agent	CAPITOL CORPORATE SERVICES, INC.
Agent Address	300 SPRING BUILDING, SUITE 900 300 S. SPRING STREET LITTLE ROCK, AR 72201
Date Filed	07/22/1983
Officers	SEE ATTACHED, Incorporator/Organizer DAVID M. SHEAR , Secretary KRISTY CARVER , Vice-President TONY M. SHELBY / VP , Treasurer
Foreign Name	N/A
Foreign Address	16 SOUTH PENNSYLVANIA AVE OKLAHOMA CITY, 73107
State of Origin	OK

Purchase a Certificate of Good Standing for this Entity

Pay Franchise Tax for this corporation

GBMc

El Dorado Chemical Company
Storm Water Pollution Prevention Plan
For Construction Activities

August 9, 2013

GBMc & Associates
Strategic Environmental Services

Storm Water Pollution Prevention Plan for Construction Activities

Prepared for:

El Dorado Chemical Company
4500 North West Avenue
P.O. Box 231
El Dorado, AR 71731

Prepared by:

GBM^{c} & Associates
219 Brown Lane
Bryant, AR 72022

August 9, 2013

CONTENTS

APPENDICES

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Appendix H	Contractor/Inspector Identification Form
Appendix I	SWPPP Certification

1.0 INTRODUCTION

This document has been prepared as the Storm Water Pollution Prevention Plan (SWPPP) associated with construction activities for El Dorado Chemical Company (EDCC) in El Dorado, Arkansas. The purpose of the SWPPP is to document the management practices and storm water pollution prevention measures that will be implemented during construction to prevent or minimize contamination of storm water discharges by potential pollutant sources at the site. This plan has been prepared in accordance with the requirements and provisions of the Arkansas General Storm Water Permit for Storm Water Discharges Associated with Construction Activity (Permit No. ARR150000).

Permit ARR150000 requires that a Notice of Intent (NOI) be filed with the Arkansas Department of Environmental Quality (ADEQ) and approved prior to beginning construction for construction activities disturbing 5 acres or more. Disturbed areas for the construction activity described in this SWPPP are expected to be up to 11 acres. A copy of the Notice of Intent (NOI) and General Storm Water Permit for Construction Activities (ARR150000) can be found in Appendix B and Appendix A. A copy of this SWPPP will be located on site in the EH&S Manager's office. This SWPPP, a copy of the NOI, and a $200 application fee will be submitted to ADEQ for approval to be covered under the General Storm Water Permit for Construction Activities.

2.0 SITE DESCRIPTION

2.1 Site Location

EDCC is a manufacturer of nitric acid, sulfuric acid, and ammonium nitrate, utilizing ammonia and elemental sulfur as raw materials. Other raw materials used at the Plant include sodium hydroxide, magnesium oxide, anti-caking agents, hardening agents, and other fertilizer additives (e.g., talc, Galoryl), boiler and cooling tower chemicals, gasoline, diesel fuel, oils, and lubricants.

The EDCC facility is located at 4500 North West Avenue in El Dorado, Union County, Arkansas. A location map for the facility is provided in Appendix C. The facility is located on a total area of approximately 1,300 acres and the manufacturing area covers approximately 150 acres.

The facility maintains coverage under NPDES Individual Discharge Permit No. AR0000752. Process water, sanitary wastewater, and storm water are discharged from the facility through Outfalls 001, 002, 003, 006, and 007. There is also four storm water only outfalls (200, 300, 400, and 500) located at the facility. All outfalls flow into various unnamed tributaries of Flat Creek, then to Flat Creek, then to Haynes Creek, then to Smackover Creek, and then to the Ouachita River. The Ouachita River is located approximately 10 miles northeast of the site.

2.2 Project Description and Intended Use

EDCC is expanding manufacturing operations at the facility. The expansion includes deconstruction of old manufacturing units and cooling tower structures; refurbishing of existing railroads; and construction of new manufacturing units, railroads tracks and associated scales and loading/unloading structures, cooling towers, and storage structures. The expansion will take place over several years and in various phases. EDCC will continue to manufacture nitric acid, sulfuric acid, and ammonium nitrate, utilizing ammonia and elemental sulfur as raw materials after the project is completed.

2.3 Sequence of Activities

The expansion of the manufacturing operations at EDCC will take place over several years in various phases. The following shows the expected sequence of major construction events; however, the sequence of events may change due to field conditions during the project.

1) Construction mobilization.
2) Installation of sediment and erosion control best management practices (BMPs) as specified in this SWPPP.
3) Clearing/grading of necessary areas.
4) BMP Inspections and Maintenance as necessary.
5) Removal of existing structures, as needed.
6) Construction of new structures, railroads, etc.
7) Final stabilization including re-vegetation of disturbed areas.
8) Removal of BMPs after final stabilization.
9) Submittal of Notice of Termination (NOT).

2.4 Total Acres Available/Total Disturbed Area

The total project area is approximately 150 acres and the total disturbed area is approximately 11 acres. All areas of disturbance are located within the fenced manufacturing area.

2.5 Existing Site Information

The existing site is currently a manufacturing facility consisting of manufacturing areas, railroads, access roads, water impoundments, gravel, bare soil, and grassy areas.

2.6 Runoff Coefficients

A change in the runoff coefficient for the site is not expected upon completion of the project, as any disturbed areas will be returned to pre-existing conditions. The current and post-construction runoff coefficient is estimated to be 0.7. Runoff coefficients were calculated following the guidelines presented in Attachment C of the ADEQ Storm Water Pollution Plan for Construction Activity template.

2.7 Soil Data

Soil data obtained from the USDA-NRCS Web Soil Survey for the project area are included as Appendix D. The majority of the soils found at the site include Sacul-Sawyer Complex (1 to 8 percent slopes) and Guyton silt loam (0 to 1 three percent slopes). A more detailed analysis of the soil types at the facility is located in Appendix D.

3.0 RESPONSIBLE PARTIES

The following provides a breakdown of responsible parties. All contractors and inspectors must be identified in this plan. If additional contractors or inspectors are added to the project, then the list of contacts should be updated accordingly. Appendix H includes a form for all contractors and inspectors to complete.

Contact	Company	Duties
Greg Withrow	El Dorado Chemical Company	Responsible Official
Environmental Department	El Dorado Chemical Company	Construction Coordination, Invoice Contact, BMP Inspections, SWPPP Updates
Contractor	TBD	BMP Installation/Maintenance

4.0 RECEIVING WATERS

The facility maintains coverage under NPDES Individual Discharge Permit No. AR0000752. Process water, sanitary wastewater, and storm water are discharged from the facility through Outfalls 001, 002, 003, 006, and 007. There is also four storm water only outfalls (200, 300, 400, and 500) located at the facility. All outfalls flow into various unnamed tributaries of Flat Creek, then to Flat Creek, then to Haynes Creek, then to Smackover Creek, and then to the Ouachita River.

Storm water runoff from disturbed portions of the site will flow into either NPDES Outfalls 001 or 006. Storm water discharged through Outfall 001 will go through a neutralization treatment system, aeration pond (Day Pond), and an equalization pond (Lake Kildeer) prior to being discharged through the outfall.

5.0 TMDLS AND IMPAIRED WATERBODIES

EDCC discharges storm water to an unnamed tributary of Flat Creek (ELCC tributary as listed on the 303(d) list) in Segment 2D, Hydrologic Unit Code (HUC) 8040201. The ELCC tributary has an associated TMDL for ammonia, total dissolved solids, sulfates, and chlorides. The ELCC tributary is also on the 303(d) list for copper and zinc from an industrial point source.

The approved TMDL listed a group of point sources and certain non-point sources and an allocation associated with these sources. The specific non-point sources included storm water outfall 006 which is associated with the EDCC's Individual NPDES Discharge Permit AR0000752. Other storm water only outfalls at EDCC or any associated load allocations were not included in the approved TMDL.

BMPs currently implemented at the facility are considered adequate to prevent exposure to storm water for the pollutants for which the waterbody is impaired. During construction, additional BMPs will be installed to sufficiently protect water quality.

6.0 WATER QUALITY STANDARDS

The BMPs and structural controls identified in this SWPPP will be implemented during the construction site to prevent, or minimize to the greatest extent possible, the discharge of potential pollutants in storm water runoff from the property. If necessary, EDCC will install, implement, and maintain BMPs that will minimize pollutants in the storm water discharge to meet applicable water quality standards.

At any time after authorization, if ADEQ determines that storm water discharges from the site may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard the permittee may be required to:

1) Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards, or
2) Cease discharges of pollutants from construction activity and submit an individual permit application.

7.0 SITE MAP

A location map, pre-construction topographic map, and detailed construction storm water site map are included in Appendix C. The following lists of items, where applicable, are depicted on the site map:

- direction of storm water flow,
- areas of soil disturbance and areas not included in the project,
- location of controls,
- entrance and exits,
- locations where stabilization practices are expected to occur,
- locations of material storage,
- locations of surface waters, and
- locations where storm water is discharged off-site.

Maps will be updated as necessary to depict areas where final stabilization has been accomplished and no further construction will take place. It will be the responsibility of the responsible official to evaluate disturbed areas, identify any areas requiring additional BMP measures, and ensure appropriate additional control measures necessary to prevent the transport of sediments by storm water are installed. Site contractor(s) and environmental employees of EDCC will support the responsible official in evaluations and if additional control measures are necessary. In addition, the construction storm water map must be kept current to depict locations where project related storm water is discharged off-site and/or locations of additional BMP measures.

8.0 STORM WATER CONTROLS

8.1 Initial Stabilization, Erosion, and Sediment Controls

Areas disturbed initially will have appropriate controls and stabilization methods implemented for these areas before additional areas are disturbed. Erosion and sediment controls will be implemented at the construction site in an effort to prevent sediment from being discharged off-site in storm water runoff. All controls will be properly selected and installed. If through inspection, controls are found to be inadequate, they will be replaced or modified. If sediments escape the construction site, the permittee will remove these accumulations at a frequency sufficient to minimize off-site impacts. Approximate locations of controls are depicted on the maps located in Appendix C. There are no off-site storage areas. Specific site conditions may alter the locations or type of controls used. A description of the BMPs to be implemented at the site is provided below.

8.2 Stabilization Practices

Stabilization practices will be utilized at the site to prevent erosion and sediment runoff from areas where soil disturbing activities occur. A record of the dates of major grading activities, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated will be maintained in Appendix E of this SWPPP. The following outlines stabilization measures which will be implemented at the site.

Natural Buffers – Preserving existing vegetation to the maximum extent possible will act as a natural buffer in order to reduce or eliminate erosion on the site. Efforts will be made to maintain existing vegetation. In addition, vegetated areas will provide natural filtration of runoff from active construction areas. Natural buffers will include preservation of existing vegetation where possible, but may also include re-seeding areas or other temporary and permanent vegetation, to provide natural filtration and stabilization of areas as needed.

Temporary Stabilization – Disturbed portions of the site where construction activity temporarily ceases will be stabilized no later than 14 days from the last construction activity in that area. In locations where vegetation would be expected to grow, stabilization practices may include temporary seeding, mulching, hydro seeding, geotextiles, and natural buffer strips.

Permanent Stabilization – Disturbed portions of the site where construction activities permanently cease will be stabilized immediately after the last construction activity. Permanent stabilization practices include permanent seed and vegetation, gravel and concrete.

Records of Stabilization – Dates when major grading activities occur, when construction activities permanently or temporarily cease on a portion of the site, and when stabilization measures are initiated are included in Appendix E. Records will be retained by EDCC for 3 years upon issuance of a Notice of Termination.

8.3 Structural/Nonstructural Controls

Various structural controls will be implemented to protect disturbed areas and prevent sediment from entering storm water runoff. The anticipated structural controls for this project include silt fence, check dams, and inlet protection (as needed). Additional structural practices will be implemented as necessary and reflected on the site map. Additional practices will be chosen based on the specific needs of a particular area of concern and installed with good engineering practices. Accumulated sediment will be removed when or before the design capacity is reduced by 50%. Disturbed portions of the site will not drain ten or more acres to a common point. The largest portion of disturbed area is approximately 4 acres. Therefore, a sedimentation basin will not be required. However, storm water runoff from majority of the disturbed areas will flow through a 1.5-acre aeration pond and a 55-acre equalization pond prior to be discharged through NPDES Outfall 001.

Nonstructural controls will include preserving existing vegetation, re-

vegetation/re-graveling disturbed areas, minimizing disturbance to steep slopes, and minimizing the amount of exposed soils during construction.

The following provide explanations of appropriate use of structural practices. Specific locations of structural practices are presented in Figures located in Appendix C.

Sediment Barriers (Silt Fence, Fiber Roll, etc) – Sediment Barriers will be utilized to control sediment and erosion at construction sites with a high risk for sediment runoff. Specifically, sediment barriers should be designed and installed at approaches to Waters of the State in order to minimize sediment transport to said waters.

Sediment barriers will be utilized as appropriate for additional areas requiring erosion/sediment control. Sediment barriers will be installed down gradient of areas where soil disturbing activities occur. Silt fence and fiber roll will be utilized as the sediment barrier and should be trenched, staked, and overlapped when installed. When utilized, silt fence will be reinforced as needed by wire backing or shall contain integral reinforcement as provided by the manufacturer. The BMP maps located in Appendix B show the anticipated locations where sediment barriers will be necessary, while Appendix D contains specifications to be followed for the installation and maintenance. Accumulated sediment will be removed when or before the design capacity is reduced by 50%.

Check Dams –Specific locations are depicted on the map. This BMP may be utilized as needed and applicable during the project. Rock check dams may be utilized to control sediment and erosion by means of a velocity dissipation device. A series of check dams may be installed if the potential for high flow velocities exist. Channels with check dams should be seeded as soon as possible.

Storm Drain Inlet Protection –Storm drain inlet protection will be utilized at storm drain inlets to control the amount of sediment being discharge to facility's storm water collection system (ditches, piping, and ponds). Sand bags and fiber rolls will be installed to detain sediment runoff from entering the storm drain inlets. Appendix D contains specifications to proper installation of storm drain inlet protection.

Additional BMPs – As needed and applicable. Based on facility inspections and construction practices, additional BMPs may include hydro mulch, hydro seed, earthen dikes, and/or sediment traps. Additional practices will be implemented if deemed necessary during routine BMP inspections by EDCC on-site personnel.

9.0 OTHER CONTROLS

Waste Disposal – Waste materials will be collected in appropriate containers (e.g., dumpsters, drums, etc.) or kept inside vehicles and properly disposed of at an authorized waste handling facility. Containers will be covered with the tarps or equipped with removable tops.

Off-site Tracking – Due to the configuration of the facility and the nature of the project, the amount of offsite tracking will be limited. All areas of disturbance are located within the fenced manufacturing area of the facility. One security-controlled

gate serves as the only access to the manufacturing area. Current access roads (asphalt and gravel) within the manufacturing area will serve as construction entrances/exits. Additional BMPs such as sweeping and shoveling at the construction entrance/exit points will be added as necessary. The generation of dust will be minimized during construction activities.

Sanitary/Portable Toilets – During construction activities, existing facilities and portable sanitary toilets (if needed) are provided for use by personnel working at the site. If provided, portable sanitary toilets will be located away from areas that drain directly into ditches or outfalls. Portable toilets will be securely staked to prevent an accidental overturn. Portable toilets must be kept clean, properly ventilated and in good repair. The holding chamber must be pumped and recharged with a disinfectant solution on a regular basis to keep the unit operating as designed. Each portable toilet must have on display the owner's name, phone number and record of the last service date. Persons, firms, corporations, and governmental agencies engaged in the rental, leasing or maintenance of portable toilets must be a licensed septic tank cleaner (Ark. Code Ann. §§ 17-45-101 through 17-45-105). Wastes removed from portable toilets must be disposed of in a manner consistent with State and Federal guidelines and requirements. The discharge of portable toilet waste at an unapproved site or in a manner not approved by the Arkansas Health Department is prohibited.

Concrete Washout – No liquid concrete waste will be discharged to Waters of the State. Concrete trucks will be washed out in appropriate areas designed to prevent the discharge of concrete washout waters. The location on the concrete wash out structure is identified on the site map in Appendix C.

Fuel Storage, Hazardous Materials, and Truck Washing Areas – No contaminants from fuel storage areas, hazardous materials storage areas, or truck wash areas shall be discharged to waters of the State. EDCC does not anticipate a truck washing area or the storing of hazardous materials related to construction activities on-site. Fuel storage and fueling areas should include means of secondary containment (e.g. absorbent materials/pads or berm area). Fueling should be performed on level-grade areas and in areas that will minimize potential to discharge to waters of the State. In addition, contractors may, and typically use portable fueling sources for refueling construction equipment. In the event spills occur, appropriate actions to control the spill will be taken. Heavy equipment will be on-site and can be used to control a significant spill.

In the event of an emergency, the Arkansas Department of Emergency Management should be contacted at (800) 322-4012.

The discharge of hazardous substances or oil in storm water discharges from the facility will be prevented or minimized to the greatest extent possible. Spills and leaks will be cleaned up and disposed of immediately after discovery according to appropriate regulations. Control and cleanup of spills and leaks will be conducted by on-site personnel using available spill control equipment. An outside spill cleanup contractor/agency will be called to assist with cleanup efforts, if necessary. Spilled material and affected media will be properly disposed at an authorized waste handling facility.

The Arkansas General Storm Water Permit for Storm Water Discharges

Associated with Construction Activity does not relieve the owner of the appropriate Federal reporting requirements. In the event a release containing a hazardous substance or oil in an amount equal to or in excess of a reporting quantity established under either 40 CFR 110, 40 CFR 117, or 40 CFR 302 occurs, the actions described in Part I Section B.21 of the Arkansas General Storm Water Permit for Storm Water Discharges Associated with Construction Activity will be followed.

10.0 NON-STORMWATER DISCHARGES

Sources of allowable non-storm water must be identified in the SWPPP to be authorized under the storm water permit. Pollution prevention measures are required for allowable non-storm water discharges and may include a combination of the structural and non-structural controls discussed previously in the SWPPP. Authorized non-storm water discharges are listed below. However, these are not expected to occur at the site. If conditions change and one or more of these discharges occur the site map will be updated accordingly.

1) Fire fighting activities;
2) Fire hydrant flushings;
3) Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2 of the Permit in Appendix A;
4) Potable water sources including uncontaminated waterline flushings;
5) Landscape Irrigation;
6) Routine external building wash down which does not use detergents or other chemicals;
7) Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;
8) Uncontaminated air conditioning, compressor condensate (See Part I.B.12.C of the Permit in Appendix A);
9) Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.12.C of the Permit in Appendix A);
10) Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.12.C of the Permit in Appendix A).

11.0 POST-CONSTRUCTION STORMWATER MANAGEMENT

Post-construction storm water management measures will include re-vegetation and/or re-stabilization of disturbed areas and restoration of disturbed areas to pre-construction contours where applicable. Structural practices (i.e. silt fence) will remain intact until final inspection or all disturbed areas are stabilized and vegetation is re-established.

12.0 APPROVED STATE OR LOCAL PLANS

This SWPPP meets the requirements of the Arkansas general permit for construction activities. Additional requirements of state or local sediment and erosion plans that may be applicable to the site will be addressed as needed.

13.0 INSPECTIONS AND MAINTENANCE

The General Permit requires that qualified personnel inspect disturbed areas of the construction site, storage areas exposed to storm water, entrance/exit locations, and structural controls measures:

a) at least once every 7 calendar days, or
b) once every 14 calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater.

In association with inspections conducted at the frequency of once every 14 days and within 24 hours of the end of a storm that is 0.5 inches or greater, a rain gauge must be maintained on-site.

Inspections for this site will be conducted at least **once every 7 calendar days**. An inspection report form is included in Appendix E and includes the requirements for signature of the qualified person performing the inspection and the operator.

A qualified inspector is defined as a person knowledgeable in the principals of erosion and sediment control, who possesses the skills to evaluate conditions at a construction site that could impact storm water quality. The person must be knowledgeable in the correct installation of erosion and sediment controls and have the ability to assess the effectiveness of sediment and erosion control measures selected in the SWPPP. The person must review the Arkansas Storm Water Construction General Permit ARR150000 and the SWPPP for the specific construction site.

Maintenance of the controls will be the responsibility of the owner of the site. Maintenance must be implemented on check dams and silt fences upon 50 percent capacity. Inspections will be utilized to determine maintenance needs and in an effort to maintain applicable specifications. If repairs are necessary, maintenance will be

initiated before the next storm event, but no later than 3 business days of discovery. Based on the repair needed and/or the severity of the damage to the control structure, construction activity in the area may be limited or halted to prevent sediment or pollutants from entering storm water runoff.

At a minimum the following inspection, maintenance, and reporting practices will be conducted to maintain erosion and sediment controls at the construction site:

1. An inspection form will be filled out and maintained with the SWPPP on site for each routine inspection (Appendix E).
2. All controls will be inspected to ensure that they meet the manufacturer's specifications.
3. All site entrances and exits will be checked to ensure no off-site tracking is occurring.
4. All inspection reports will be maintained for a minimum of three years after permit termination.
5. In addition to inspection, records will be kept of the following:
    a. Dates when major grading activities occur
    b. Dates when construction activities cease in an area, temporarily or permanently.
    c. Dates when an area is stabilized, temporarily or permanently.

Inspections will not be required at construction sites where snow cover exists over the entire site for an extended period, and melting conditions do not exist. If there is any runoff from the site at any time during snow cover, melting conditions would be considered to be existent at the site and this inspection waiver would not apply. Regular inspections, as required by this permit, are required at all other times. If winter conditions prevent compliance with the permit, documentation of the beginning and the ending date of winter conditions should be included in the SWPPP.

Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make inspections impractical, such as extended frozen conditions. When adverse weather conditions prevent the inspection of the site, an inspection should be completed as soon as is safe and feasible. If adverse weather conditions prevent compliance with the permit, documentation of the beginning and ending date of adverse weather conditions should be included in the SWPPP.

14.0 EMPLOYEE TRAINING

Any personnel having any part in implementing activities identified in the SWPPP will be trained on the components and goals of the SWPPP by a person designated by the operator. The designated person will be knowledgeable on all aspects of the SWPPP and general permit requirements. Training will be performed prior to personnel working on-site. The training may be informal one-on-one or in a group situation depending on the extent of knowledge needed to be known by the person(s) being trained. A form that may be used for documenting training records is included in Appendix G. SWPPP training records will be maintained with this Plan or kept on file at the facility.

15.0 REVIEW AND UPDATE

The owner shall make the SWPPP available, upon request, to the EPA, ADEQ, or other authorized state or local agency. ADEQ may notify the owner at any time that the SWPPP does not meet one or more of the minimum requirements of the permit. Within 7 days of such notification from ADEQ, the owner must make the required changes to the SWPPP and submit to ADEQ a written certification that the requested changes have been made.

The owner must amend the SWPPP whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to the water of the State. The SWPPP must also be updated if the plan proves to be ineffective in eliminating or minimizing pollutants from sources of construction activity at the site.

16.0 RETENTION OF RECORDS

The owner must retain records of the SWPPP, associated reports, and NOI documentation for a period of three years from the date the site is finally stabilized. A copy of the SWPPP must be maintained from the date of project initiation to the date of final stabilization. A copy of the SWPPP will be located at the construction site. NOI will be posted in a prominent place at the construction site for public viewing once the permit has be issued by ADEQ and the construction site notice has been received.

17.0 PLAN CERTIFICATION

The plan certification required by the general storm water permit for construction activity is included in Appendix I. Management practices, control devices, and permit conditions will be implemented by the permittee, El Dorado Chemical Company, which has been identified as the owner and responsible party for construction oversight.

18.0 NOTICE OF TERMINATION

After all construction activities that disturb soil are complete and the site has reached final stabilization (100% stabilization with 80% density), the owner must submit a Notice of Termination (NOT) along with pictures showing the stabilized site in order to terminate coverage under the Permit. If a NOT is not submitted when the project is completed, the owner will be responsible for annual fees due to ADEQ.

Appendix A
Storm Water Permit for Construction Activities
ARR150000

AUTHORIZATION TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. 1251 et seq.),

Operator of Facilities with Stormwater Discharges Associated With Construction Activity

is authorized to discharge to all receiving waters except as stated in Part I.B.11 (Exclusions).

For facilities that are eligible for coverage under this General Permit (GP), the Department sends a cover letter (Notice of Coverage with tracking permit number which starts with ARR15) and a copy of the permit to the facility. The cover letter includes the Department's determination that a facility is covered under the GP and may specify alternate requirements outlined in the permit.

Effective Date: November 1, 2011

Expiration Date: October 31, 2016

Steven L. Drown

Steven L. Drown
Chief, Water Division
Arkansas Department of Environmental Quality

31 Oct 11
Issue Date

PART I
PERMIT REQUIREMENTS

Information in **Part I** is organized as follows:

Section A: Definitions
Section B: Coverage Under this Permit:

1. Permitted Area
2. Eligibility
3. Responsibilities of the Operator
4. Where to Submit
5. Requirements for Qualifying Local Program (QLP)
6. Requirements for Coverage
7. Notice of Intent (NOI) Requirements
8. Posting Notice of Coverage (NOC)
9. Applicable Federal, State or Local Requirements
10. Allowable Non-Stormwater Discharges
11. Limitations on Coverage (Exclusions)
12. Effluent Limitation Guidelines (ELG)
13. Natural Buffer Zones
14. Waivers from Permit Coverage
15. Notice of Termination (NOT)
16. Responsibilities of the Operator of a Larger Common Plan of Development for a Subdivision
17. Change in Operator
18. Late Notifications
19. Failure to Notify
20. Maintenance
21. Releases in Excess of Reportable Quantities
22. Attainment of Water Quality Standards

SECTION A: DEFINITIONS

1. **"ADEQ"** or **"Department"** is referencing the Arkansas Department of Environmental Quality. The Department is the governing authority for the National Pollutant Discharge Elimination System program in the state of Arkansas.

2. **"Arkansas Pollution Control and Ecology Commission"** shall be referred to as APCEC throughout this permit.

3. **"Automatic Coverage"** indicates those sites that are defined as a small construction site or a site that is less than five (5) acres but part of a larger common plan.

4. **"Best Management Practices (BMPs)"** schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to Waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. According to the EPA BMP manual the use of hay-bales in concentrated flow areas is not recommended as a best management practice.

5. **"Cognizant Official"** a duly authorized representative, as defined in Part II.B.9.B.

6. **"Commencement of Construction"** the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities.

7. **"Contaminated"** means a substance the entry of which into the MS4, Waters of the State, or Waters of the United States may cause or contribute to a violation of Arkansas water quality standards.

8. **"Control Measure"** as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to Waters of the State.

9. **"Construction Site"** an area upon which one or more land disturbing construction activities occur that in total will disturb one acre or more of land, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land disturbing construction activities may be taking place at different times on different schedules but under one plan such that the total disturbed area is one acre or more.

10. **"CWA"** the Clean Water Act or the Federal Water Pollution Control Act.

11. **"Dedicated Portable Asphalt Plant"** a portable asphalt plant that is located on or contiguous to a construction site that provides asphalt only to the construction site on which the plant is located or adjacent to. The term does not include facilities that are subject to the asphalt emulsion effluent guideline limitations at 40 CFR Part 443.

12. **"Dedicated Portable Concrete Plant"** a portable concrete plant that is located on or contiguous to a construction site and that provides concrete only to the construction site on which the plant is located on or adjacent to.

13. **"Detention Basin"** a detention basin is an area where excess stormwater is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel.

14. **"Director"** the Director, Arkansas Department of Environmental Quality, or a designated representative.

15. "Discharge" when used without qualification means the "discharge of a pollutant".

16. "Discharge of Stormwater Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in stormwater runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

17. "Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in stormwater point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; management of solid waste and debris; and measures to control stormwater including the construction and operation of BMPs to control, reduce or prevent stormwater pollution.

18. "Disturbed area" the total area of the site where any construction activity is expected to disturb the ground surface. This includes any activity that could increase the rate of erosion, including, but not limited to, clearing, grubbing, grading, excavation, demolition activities, haul roads, and areas used for staging. Also included, are stockpiles of topsoil, fill material and any other stockpiles with a potential to create additional runoff.

19. "Eligible" qualified for authorization to discharge stormwater under this general permit.

20. "Erosion" the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

21. "Facility" or "Activity" any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

22. "Final Stabilization":

A. All soil disturbing activities at the site have been completed and either of the two following criteria are met:

   1) A uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 80% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
   2) Equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

B. When background native vegetation will cover less than 100% of the ground (e.g., arid areas, beaches), the 80% coverage criteria is adjusted as follows: if the native vegetation covers 50% of the ground, 80% of 50% (0.80 x 0.50 = 0.40) would require 40% total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.

C. For individual lots in residential construction, final stabilization means that either:

   1) The homebuilder has completed final stabilization as specified above, or
   2) The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.

D. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its pre-

construction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to "Water of the United States", and areas which are not being returned to their pre-construction agricultural use must meet the final stabilization criteria in A, B, or C above.

23. "Grading Activities" as used in this permit are those actions that disturb the surface layer of the ground to change the contouring, surface drainage pattern, and/or any other slope characteristics of the land without significantly adding or removing on-site rock, soil, and other materials. This can include demolition, excavation, and filling.

24. "Infrastructure" streets, drainage, curbs, utilities, etc.

25. "Impaired Water" a water body listed in the current, approved Arkansas 303(d) list.

26. "Landscaping" improving the natural beauty of a piece of land (i.e. entrance of subdivision) through plantings or altering the contours of the ground.

27. "Large and Medium Municipal Separate Storm Sewer System" all municipal separate storm sewer systems that are either:

A. Located in an incorporated place with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census: or
B. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal, separate storm sewers that are located in the incorporated places, townships or towns within such counties; or
C. Owned or operated by a municipality other than those described in paragraphs (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

28. "Large Construction Site" construction activity including clearing, grading and excavation, **except** operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres. (Please see Part I.B.14 for partial waivers.)

29. "Larger Common Plan of Development" a contiguous (sharing a boundary or edge; adjacent; touching) area where multiple and distinct construction activities may be taking place at different times on different schedules under one plan. Such a plan might consist of many small projects (e.g. a common plan of development for a residential subdivision might lay out the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for development.) All these areas would remain part of the common plan of development or sale. The following items can be used as guidance for deciding what might or might not be considered a "Common Plan of Development or Sale." The "plan" in a common plan of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur on a specific plot. The applicant must still meet the definition of operator in order to be required to get permit coverage, regardless of the acreage that is personally disturbed.

If a smaller project (i.e., less than 1 acre) is part of a large common plan of development or sale (e.g., you are building a residential home on a ½ acre lot in a 40 acre subdivision or are putting in a fast food restaurant on a ¾ acre pad that is part of a 20 acre retail center) permit coverage is required. Under 40 CFR 122.26(b)(2)(vi), smaller parts of a larger common plan of development are automatically authorized under this general permit and should follow the conditions of a site with automatic coverage set forth in this permit (see Part I.B.6.A).

30. "NOC" Notice of Coverage

31. "NOI" Notice of Intent to be covered by this permit.

32. "NOT" Notice of Termination.

33. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity, means any person (an individual, association, partnership, corporation, municipality, state or federal agency) who has the primary management and ultimate decision-making responsibility over the operation of a facility or activity. The operator is responsible for ensuring compliance with all applicable environmental regulations and conditions.

In addition, for purposes of this permit and determining who is an operator, ''owner'' refers to the party that owns the structure being built. Ownership of the land where construction is occurring does not necessarily imply the property owner is an operator (e.g., a landowner whose property is being disturbed by construction of a gas pipeline or a landowner who allows a mining company to remove dirt, shale, clay, sand, gravel, etc. from a portion of his property). Likewise, if the erection of a structure has been contracted for, but possession of the title or lease to the land or structure is not to occur until after construction, the would-be owner may not be considered an operator (e.g., having a house built by a residential homebuilder).

34. "Outfall" a point source where stormwater leaves the construction site.

35. "Owner" the owner or operator of any "facility or activity" subject to regulation under the NPDES program. In addition, for purposes of this permit and determining who is an operator, ''owner'' refers to the party that owns the structure being built. Ownership of the land where construction is occurring does not necessarily imply the property owner is an operator (e.g., a landowner whose property is being disturbed by construction of a gas pipeline). Likewise, if the erection of a structure has been contracted for, but possession of the title or lease to the land or structure is not to occur until after construction, the would-be owner may not be considered an operator (e.g. having a house built by a residential homebuilder).

36. "Physically Interconnected" that one municipal separate storm sewer system is connected to a second municipal separate storm sewer system in such a way that it allows for direct discharges into the second system.

37. "Point Source" any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

38. "Qualified Local Program" is a municipal program for stormwater discharges associated with construction sites that has been formally approved by the Department.

39. "Qualified personnel" a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

40. "Regulated Small Municipal Separate Storm Sewer System" all municipal separate storm sewer systems that are either:

A. Located within the boundaries of an "urbanized area" with a population of 50,000 or more as determined by the latest Decennial Census by the Bureau of Census; or
B. Owned or operated by a municipality other than those described in paragraph A and that serve a jurisdiction with a

population of at least 10,000 and a population density of at least 1,000 people per square mile; or

C. Owned or operated by a municipality other than those described in paragraphs A and B and that contributes substantially to the pollutant loadings of a "physically interconnected" municipal separate storm sewer system.

41. "Retention Basin" a basin that is designed to hold the stormwater from a rain event and allow the water to infiltrate through the bottom of the basin. A retention basin also stores stormwater, but the storage of the stormwater would be on a more permanent basis. In fact, water often remains in a retention basin indefinitely, with the exception of the volume lost to evaporation and the volume absorbed into the soils. This differs greatly from a detention basin, which typically drains after the peak of the storm flow has passed, sometimes while it is still raining.

42. "Runoff Coefficient" the fraction of total rainfall that will appear at the conveyance as runoff.

43. "Sediment" material that settles to the bottom of a liquid.

44. "Sediment Basin" a basin that is designed to maintain a 10 year-24 hour storm event for a minimum of 24-hours in order to allow sediment to **settle** out of the water.

45. "Small Construction Site" construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance.

46. "Stormwater" stormwater runoff from rainfall, snow melt runoff, and surface runoff and drainage.

47. "Stormwater Associated with Construction Activity" the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to construction activity.

48. "Stormwater Pollution Prevention Plan (SWPPP or SWP3)" a plan that includes site map(s), an identification of construction/contractor, activities that could cause pollutants in the stormwater, and a description of measures or practices to control these pollutants (BMPs).

49. "Temporary Sediment Controls" controls that are installed to control sediment runoff from the site. These could be silt fencing, rock check dams, etc.

50. "Total Maximum Daily Load" or "TMDL" the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for non-point sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any non-point sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

51. "Uncontaminated" cannot exceed the water quality standards as set forth in APCEC Regulation 2.

52. "Urbanized Area" the areas of urban population density delineated by the Bureau of the Census for statistical purposes and generally consisting of the land area comprising one or more central place(s) and the adjacent densely settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile as determined by the latest Decennial Census by the Bureau of Census.

SECTION B: COVERAGE UNDER THIS PERMIT

Introduction

This Construction General Permit (CGP) authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface Waters of the State or a Municipal Separate Storm Sewer System (MS4) leading to surface Waters of the State subject to the conditions set forth in this permit. This permit also authorizes stormwater discharges from any other construction activity designated by ADEQ where ADEQ makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to Waters of the State. This permit replaces the permit issued in 2008. The goal of this permit is to minimize the discharge of stormwater pollutants from construction activity. The Operator should make sure to read and understand the conditions of the permit. A copy of the General Stormwater Construction Permit is available on the ADEQ web site at http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/construction.htm . You may also obtain a hard copy by contacting the ADEQ's General Permits Section at (501) 682-0623.

1. **Permitted Area.** If a large or small construction activity is located within the State of Arkansas, the operator may be eligible to obtain coverage under this permit.

2. **Eligibility.** Permit eligibility is limited to discharges from "large" and "small" construction activity, or as otherwise designated by ADEQ. This general permit contains eligibility restrictions, as well as permit conditions and requirements. Operators may have to take certain actions to be eligible for coverage under this permit. In such cases, operators must continue to satisfy those eligibility provisions to maintain permit authorization. If operators do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if operators are eligible for coverage under this permit and do not comply with the requirements of the general permit, they may be in violation of the general permit for otherwise eligible discharges.

   A. This general permit authorizes discharges from construction activities as defined in 40 CFR 122.26(a), 40 CFR 122.26(b)(14)(x), 40 CFR 122.26(b)(15)(i) and 40 CFR Part 450.

   B. This permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, borrow areas) provided:

      1) The support activity is directly related to a specific construction site that is required to have NPDES permit coverage for discharges of stormwater associated with the construction activity;
      2) The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports;
      3) Pollutant discharges from support activity areas are minimized in compliance with conditions of this permit; and
      4) discharges from the support activity areas must be identified in a Stormwater Pollution Prevention Plan (SWPPP) stating appropriate controls and measures for the area.

   C. Other activities may be considered for this permit at the discretion of the Director as defined in 40 CFR 122.26(b)(15)(ii).

3. **Responsibilities of the Operator.** Permittees with operational control are responsible for compliance with all applicable terms and conditions of this permit as it relates to their activities on the construction site, including protection of endangered species and implementation of BMPs and other controls required by the SWPPP. Receipt of this general permit does not

relieve any operator of the responsibility to comply with any other applicable federal, state or local statute, ordinance or regulation.

4. **Where to Submit.** The operator shall submit a complete and signed Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and application fee to the Department at the following address:

   Arkansas Department of Environmental Quality
   Discharge Permits Section
   5301 Northshore Drive
   North Little Rock, AR 72118-5317

   Or by electronic mail (Complete documents (NOI and SWPPP) must be submitted in PDF format) to:

   Water-permit-application@adeq.state.ar.us ;

   NOTE: Notice of Coverage (NOC) will **NOT** be issued until payment has been received by ADEQ.

5. **Requirements for Qualifying Local Program (QLP).** The Department reviews and approves the QLPs to ensure that they meet or supersede both state and federal requirements outlined in this permit and 40 CFR 122.44(s). ADEQ will review the QLP at least every 5 years for recertification. If the Department approves a QLP, then the QLP requirements must at the minimum meet the Department's requirements. This would include all templates and forms. This permit may be modified to add new QLPs or modify existing QLPs at the Department's discretion. All public notice and other applicable costs incurred by the modification of the permit for the addition or modification of a QLP will be paid by the QLP.

   If the small construction site is within the jurisdiction of a QLP, the operator of the small construction site is authorized to discharge stormwater associated with construction activity under QLP permit requirements only.

   At this time only the City of Hot Springs is meeting the ADEQ minimum requirements.

6. **Requirements for Coverage.**

   A. *Automatic Coverage.* An operator of each site with automatic coverage may discharge under this general permit without submitting to the Department a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP) and fee. All the permit conditions set forth must be followed. However, a completed NOC must be posted at the site for automatic permit coverage prior to commencing construction. Operators must have a copy of the SWPPP at the construction to have permit coverage and authorization to discharge.
   The Operator is responsible for ensuring that the site is in compliance with any changes or updates of this general permit, by either contacting ADEQ or reviewing the ADEQ website
   http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/construction.htm .

   B. *Large Construction Sites.* An operator of a large construction site discharging under this general permit must submit the following items at least two weeks prior to commencement of construction:

      1) An NOI in accordance with the requirements of Part I.B.7 of this permit.
      2) A complete SWPPP in accordance with the requirements of Part II.A of this permit.
      3) An initial permit fee must accompany the NOI under the provisions of APCEC Regulation No. 9. Subsequent annual fees will be billed by the Department until the operator has requested a termination of coverage by

submitting a Notice of Termination (NOT). Failure to remit the required permit fee may be grounds for the Director to deny coverage under this general permit.

C. *Coverage within a QLP*. An operator of a site with automatic coverage, as defined in this permit, shall comply with the requirements of the QLP which has jurisdiction over the site.

7. Notice of Intent (NOI) Requirements.

A. *NOI Form*. Large Construction site operators who intend to seek coverage for stormwater discharge under this general permit must submit a complete and accurate ADEQ NOI form to the Department at least two weeks prior to coverage under this permit. The NOI form **must** be the current version obtained from the stormwater webpage indicated above in Part I.B.

If the NOI is deemed incomplete, the Department will notify the applicant with regard to the deficiencies by a letter, email, or phone within ten (10) business days of receipt of NOI. If the operator does not receive a notification of deficiencies from ADEQ's receipt of the NOI, the NOI is deemed complete. If the applicant does not provide the Department with the requested deficiencies within the deadline set by the Department, then the Department will return the NOI, fee and SWPPP back to the applicant.

B. *Contents of the NOI*. The NOI form contains, at a minimum, the following information:

1) Operator (Permittee) information (name, address, telephone and fax numbers, E-mail address)
2) Whether the operator is a federal, state, private, public, corporation, or other entity
3) Application Type: New or renewal
4) Invoice mailing information (name, address, and telephone and fax numbers)
5) Project Construction site information (name, county, address, contact person, direction to site, latitude and longitude for the entrance of the site or the endpoints for linear project (in degrees, minutes, and seconds), estimated construction start date and completion date through site final stabilization, estimate of the total project acreage and the acreage to be disturbed by the operator submitting the NOI, type of the project (subdivision, school, etc), whether the project is part of a larger common plan of development.)
6) Discharge information (name of the receiving stream, ultimate receiving stream, name of municipal storm sewer system)
7) Previous/Current permit information
8) The Certification statement and signature of a qualified signatory person in accordance with 40 CFR 122.22, as adopted by reference in APCEC Regulation No. 6
9) The certification of the facility corporation
10) Other information (location of the SWPPP).

C. *Notice of Coverage (NOC)*. Unless notified by the Director to the contrary, dischargers who submit a NOI in accordance with the requirements of this permit are authorized to discharge stormwater from construction sites under the terms and conditions of this permit two weeks after the date the NOI is deemed complete by ADEQ. If the NOC has not been received by the permittee two weeks after the date the NOI is deemed complete by ADEQ, the NOI should be posted until the NOC is received. Upon review of the NOI and other available information, the Director may deny coverage under this permit and require submittal of an application for an individual NPDES permit.

8. Posting Notice of Coverage (NOC).

A. *Large Sites: NOC Posting for Large Construction Sites*. The posting for large construction sites shall be obtained from

the Department only after the permittee has met the NOI, permit fee and complete SWPPP submittal to the Department for the coverage.

B. *Automatic Coverage Sites*. The Automatic Coverage (NOC) for small sites and a single site less than five (5) acres but part of a larger common plan, as defined in Part I.A, can be obtained from the Water Division's Construction Stormwater webpage at:
http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/construction.htm.
The NOC must be posted at the site prior to commencing construction. In addition, a copy of the SWPPP must be available at the construction site in accordance with Part II.A.2. B and D prior to commencing construction.

C. *Linear Projects*. If the construction project is a linear construction project (e.g., pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary.

Please note, this permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that the permittee allow members of the public access to a construction site.

9. **Applicable Federal, State or Local Requirements.** The operator must ensure that the stormwater controls implemented at the site are consistent with all applicable federal, state, or local requirements. Additionally, an operator who is operating under approved local erosion and sediment plans, grading plans, local stormwater permits, or stormwater management plans shall submit signed copies of the Notice of Intent (NOI) to the local agency (or authority) upon the local agency's request.

10. **Allowable Non-Stormwater Discharges.**

A. The following non-stormwater discharges that are combined with stormwater during construction may be authorized by this permit. Non-stormwater discharges must be addressed in the stormwater pollution prevention plan and measures to minimize or eliminate non-stormwater discharge should be taken if reasonably possible.
1) Fire fighting activities;
2) Fire hydrant flushings;
3) Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2;
4) Potable water sources including uncontaminated waterline flushings;
5) Landscape Irrigation ;
6) Routine external building wash down which does not use detergents or other chemicals;
7) Pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;
8) Uncontaminated air conditioning, compressor condensate (See Part I.B.12.C of this permit);,
9) Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.12.C of this permit);
10) Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.12.C of this permit);

11. **Limitations on Coverage (Exclusions).** The following stormwater discharges associated with construction activity are not covered by this permit:

A. *Post Construction Discharge*. Stormwater discharges associated with construction activities that originate from the site after construction activities have been completed, the site has undergone final stabilization, and the permit has been terminated.

B. *Discharges Mixed with Non-Stormwater*. Stormwater discharges that are mixed with sources of non-stormwater other than those identified in Part I.B.10.

C. *Discharges Covered by another Permit.* Stormwater discharges associated with construction activity that are covered under an individual or an alternative general permit may be authorized by this permit after an existing permit expires provided the expired permit did not establish numeric effluent limitations for such discharges.

D. *Discharges into Receiving Waters with an Approved TMDL.* Discharges from a site into receiving waters for which there is an established total maximum daily load (TMDL) allocation (www.adeq.state.ar.us/water/branch_planning/default.htm) for Turbidity, Oil & Grease, and/or other pollutants at the discretion of the Director are not eligible for coverage under this permit unless the permittee develops and certifies a stormwater pollution prevention plan (SWPPP) that is consistent with the assumptions and requirements in the approved TMDL. To be eligible for coverage under this general permit, operators must incorporate into their SWPPP any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. If a specific numeric allocation has been established that would apply to the project's discharges, the operator must incorporate that allocation into its SWPPP and implement necessary steps to meet that allocation. Please note that the Department will be reviewing this information. If it is determined that the project will discharge into a receiving stream with a TMDL, then the Department may require additional BMPs.

E. *Discharges into Impaired Receiving Waters (303(d) List).* Discharges from a site into a receiving waters listed as impaired under Section 303(d) of the Clean Water Act (www.adeq.state.ar.us/water/branch_planning/default.htm) for Turbidity, Oil & Grease and/or other pollutants at the discretion of the Director, must incorporate into the SWPPP any additional BMPs needed to sufficiently protect water quality. The SWPPP must include a proposal for monitoring to determine if the BMPs and controls are effective. Please note that the Department will be reviewing this information. If it is determined that the project will discharge to an impaired water body, then the Department may require additional BMPs.

12. *Effluent Limitation Guidelines (ELG).* All permittees must comply with the following effluent limits:

A. *Erosion and Sediment Controls.* Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:

1) Control stormwater volume and velocity within the site to minimize soil erosion;
2) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
3) Minimize the amount of soil exposed during construction activity;
4) Minimize the disturbance of steep slopes;
5) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
6) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and
7) Minimize soil compaction and, unless infeasible, preserve topsoil.

B. *Soil Stabilization.* Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the permitting authority. In arid, semiarid, and drought-

stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority.

C. *Dewatering*. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls. There shall be no turbid discharges to surface waters of the state resulting from dewatering activities. If trench or ground waters contain sediment, it must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag, or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

D. *Pollution Prevention Measures*. Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or BMP control that provides equivalent or better treatment prior to discharge;
2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
3) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

E. *Prohibited discharges*. The following discharges are prohibited:

1) Wastewater from washout of concrete, unless managed by an appropriate control;
2) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
4) Soaps or solvents used in vehicle and equipment washing.

F. *Surface Outlets*. When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

13. Natural Buffer Zones. A natural buffer zone as stated below shall be maintained at all times. Exceptions from this requirement for areas, such as water crossings, limited water access, and restoration of the buffer are allowed if the permittee fully documents in the SWPPP the circumstances and reasons for the buffer zone encroachment. Additionally, this requirement is not intended to interfere with any other ordinance, rule or regulation, statute or other provision of law.

A. For construction projects where clearing and grading activities will occur, the SWPPP must provide at least twenty-five (25) feet of natural buffer zone, as measured horizontally from the top of the bank to the disturbed area, from any named or unnamed streams, creeks, rivers, lakes or other water bodies.

B. The Department may also require up to fifty (50) feet of natural buffer zone, as measured from the top of the bank to the disturbed area, from established TMDL water bodies, streams listed on the 303 (d)-list, an Extraordinary Resource Water (ERW), Ecologically Sensitive Waterbody (ESW), Natural and Scenic Waterway (NSW), and/or any other uses

at the discretion of the Director.

C. Linear projects will be evaluated individually by the Department to determine natural buffer zone setbacks.

14. Waivers from Permit Coverage. The Director may waive the otherwise applicable requirements of this general permit for stormwater discharges from construction activities under the terms and conditions described in this section.

A. *Waiver Applicability and Coverage*. Based upon 40 CFR Part 122.26.b.15.i.A, operators of small construction activities may apply for and receive a waiver from the requirements to obtain this permit.

B. *No Stormwater Leaving the Site*. If all of the stormwater from the construction activity is captured on-site under any size storm event and allowed to evaporate, soak into the ground on-site, or is used for irrigation, a permit is not needed.

C. *TMDL Waivers*. This waiver is available for sites with automatic coverage if the ADEQ has established or approved a TMDL that addresses the pollutant(s) of concern and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by ADEQ is available from ADEQ online at http://www.adeq.state.ar.us/water/branch_planning/default.htm.

15. Notice of Termination (NOT). All construction activities that disturbed soil are complete, the site has reached final effective stabilization (100% stabilization with 80% density), all stormwater discharges from construction activities authorized by this permit are eliminated and all temporary sediment controls are removed and properly disposed, the operator of the facility may submit a complete Notice of Termination (NOT) to the Director. Along with the NOT, pictures that represent the entire site should be submitted for review. Final stabilization is not required if the land is returned to its pre-construction agriculture use. Operators of small construction sites are not required to submit NOTs for their construction sites. However, final stabilization is required on all sites. If a Notice of Termination is not submitted when the project is completed, the operator will be responsible for annual fees.

16. Responsibilities of the Operator of a Larger Common Plan of Development for a Subdivision.

A. The operator is ultimately responsible for the runoff from the perimeter of the entire development. Regardless for the reason of the runoff, the operator is responsible for ensuring sufficient overall controls of the development.

B. The operator shall not terminate the permit coverage until the following conditions have been met:

1) After all construction including landscaping and lot development has been completed; and
2) All lots are sold and developed.

The following exceptions to this requirement can apply:

a. less than 100% sold and developed at the discretion of the Director, or
b. Separation of the larger common plan if twenty-four (24) months have passed with no construction activity, or
c. All lots are developed and there are no temporary common controls for subdivision outfalls, i.e. sediment basins, large sediment traps, check dams, etc.

3) If lots are sold then re-sold to a third party then permit coverage needs to be obtained by each of the operators while they have ownership of the lots. The second owner is responsible to obtain the same certification from the third owner, i.e. the certification must pass from owner to owner.

C. The operator shall not terminate permit coverage until the operators of all the individual lots within the larger common plan are notified of their permitting requirements under this general permit. In this case, the signed certification statements from each operator of individual lots must be maintained in the stormwater pollution prevention plan for the large common plan. A copy of the signed certifications must be submitted to ADEQ with the NOT. The certification shall be as follows:

"I, _____, operator of an individual lot #_____, block #_____ of _____ subdivision, certify under penalty of law that I was notified by the operator of the larger common plan of the stormwater permitting requirements for my construction site(s). I understand prior to commencement of any construction activity I have to prepare and comply with a SWPPP and post the Construction Site Notice. I understand that prior to the sale of this lot to another party; I must notify the new owner of ADEQ requirements and obtain this certification from the new owner."

Signature _____

D. The following examples are provided as clarification:

1) If a small portion of the original common plan of development remains undeveloped and there has been a period of time (i.e., more than 24 months) where there are no ongoing construction activities (i.e., all areas are either undisturbed or have been finally stabilized), operators may re-evaluate the original project based on the acreage remaining from the original "common plan." If less than five but more than one acre remains to build out the original "common plan", coverage under the large permit may not be required. However, operators will need to comply with the terms and conditions for Small Construction Sites in the Construction General Permit. If less than one acre remains of the original common plan, the individual project may be treated as a part of a less than one acre development and no permit would be required.
2) If operators have a long-range master plan of development where some portions of the master plan are conceptual rather than a specific plan of future development and the future construction activities would, if they occur at all, happen over an extended period of time (i.e., more than 24 months), operators may consider the "conceptual" phases of development to be separate "common plans" provided the periods of construction for the physically interconnected phases will not overlap.
3) Where discrete construction projects within a larger common plan of development or sale are located ¼ mile or more apart and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed. For example, an interconnecting access road or pipeline were under construction at the same time, they would generally be considered as a part of a single "common plan" for permitting purposes.
4) If the operator sells all the lots in the subdivision to one or more multi-lot homebuilder(s), provisions must be made to obtain stormwater permit coverage by one of the following options:
   a. The permit may be transferred from the first "operator" to the new/second "operator".
   b. A new, separate permit may be obtained by the second "operator".
   NOTE: If a new permit is to be obtained, then it must be obtained before the first/original permit is terminated.
5) If the operator retains ownership of any lots in the subdivision, the operator shall maintain permit coverage for those lots under the original permit. The operator shall modify the Stormwater Pollution Prevention Plan (SWPPP) by stating which lots are owned and marking the lots on the site map. If there are one (1) or two (2) lots remaining and the total acreage is less than five (5) acres, the original permit could be terminated and those lots could be

covered as a small site.

17. **Change in Operator.** For stormwater discharges from large construction sites where the operator changes, including instances where an operator is added after the initial NOI has been submitted, the new operator must ensure that a permit transfer form is received by the Department at least two (2) weeks prior to the operator beginning work at the site.

18. **Late Notifications.** A discharger is not precluded from submitting an NOI in accordance with the requirements of this part after the dates provided in Part I.B.6 of this permit. In such instances, the Director may bring an enforcement action for failure to submit an NOI in a timely manner or for any unauthorized discharges of stormwater associated with construction activity that have occurred on or after the dates specified in this permit.

19. **Failure to Notify.** The operator of a construction site who fails to notify the Director of their intent to be covered under this permit, and who potentially discharges pollutants (sediment, debris, etc.) to Waters of the State without an NPDES permit, is in violation of the Arkansas Water and Air Pollution Control Act.

20. **Maintenance.** Determination of the acreage of disturbance does not typically include disturbance for routine maintenance activities on existing roads where the line and grade of the road is not being altered, nor does it include the paving of existing roads. Maintenance activities (returning to original conditions) are not regulated under this permit unless one or more acres of underlying and/or surrounding soil are cleared, graded, or excavated as part of the operation.

21. **Releases in Excess of Reportable Quantities.**

A. The discharge of hazardous substances or oil in the stormwater discharge(s) from a facility shall be prevented or minimized in accordance with the applicable stormwater pollution prevention plan for the facility. This permit does not relieve the operator of the reporting requirements of 40 CFR Parts 110, 117 and 302. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reporting quantity established under either 40 CFR 110, 40 CFR 117, or 40 CFR 302, occurs during a 24-hour period, the following action shall be taken:

1) Any person in charge of the facility is required to notify the National Response Center (NRC) (800-424-8802) in accordance with the requirements of 40 CFR 110, 40 CFR 117, or 40 CFR 302 as soon as he/she has knowledge of the discharge;
2) The operator shall submit within five (5) calendar days of knowledge of the release a written description of the release (including the type and estimate of the amount of material released), the date that such release occurred, and the circumstances leading to the release, and steps to be taken in accordance with Part II.B.13 of this permit to the ADEQ.
3) The Stormwater Pollution Prevention Plan (SWPPP) described in Part II.A of this permit must be modified within fourteen (14) calendar days of knowledge of the release to:

   a. Provide a description of the release and the circumstances leading to the release; and
   b. The date of the release;

4) Additionally, the SWPPP must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

B. *Spills*. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

22. Attainment of Water Quality Standards.

The operator must select, install, implement and maintain control measures at the construction site that minimize the discharge of turbidity and/or oil and grease and/or other pollutants at the discretion of the Director as necessary to protect water quality. In general, except in situations explained in below, the stormwater controls developed, implemented, and updated to be considered stringent enough to ensure that discharges do not cause or contribute to an excursion above any applicable water quality standard.

At any time after authorization, the ADEQ may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, ADEQ will require the permittee to:

A. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

B. Cease discharges of pollutants from construction activity and submit an individual permit application.

All written responses required under this part must include a signed certification consistent with Part II.B.9.

PART II
STANDARD CONDITIONS

Information in **Part II** is organized as follows:

Section A: Stormwater Pollution Prevention Plans (SWPPP):

1. Deadlines for Plan Preparation and Compliance
2. Signature, SWPPP, Inspection Reports, and Notice of Coverage (NOC)
3. Keeping SWPPP Current
4. Contents of the Stormwater Pollution Prevention Plan
5. Plan Certification

Section B: Standard Permit Conditions:

1. Retention of Records
2. Duty to Comply
3. Penalties for Violations of Permit Conditions
4. Continuance of Expired General Permit
5. Need to Halt or Reduce Activity Not a Defense
6. Duty to Mitigate
7. Duty to Provide Information
8. Other Information
9. Signatory Requirements
10. Certification
11. Penalties for Falsification of Reports
12. Penalties for Tampering
13. Oil and Hazardous Substance Liability
14. Property Rights
15. Severability
16. Transfers
17. Proper Operation and Maintenance
18. Inspection and Entry
19. Permit Actions
20. Re-Opener Clause
21. Local Requirements
22. Applicable Federal, State Requirements

SECTION A: STORMWATER POLLUTION PREVENTION PLANS (SWPPP)

The operator must prepare a Stormwater Pollution Prevention Plan (the plan/SWPPP) before permit coverage. At least one SWPPP must be developed for each construction project or site covered by this permit. The SWPPP must follow the order outlined in Part II.A.4 & 5 below. This basic ADEQ format is available through the Department's website http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/construction.htm . Other formats may be used at the discretion of the Director **if** the format has been approved by the Department prior to use. The operator must implement the SWPPP as written from initial commencement of construction activity until final stabilization is complete, with changes being made as deemed necessary by the permittee, local, state or federal officials. The plan shall be prepared in accordance with good engineering practices, by qualified personnel and must:

- Identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction;
- Identify, describe and ensure the implementation of Best Management Practices (BMPs), with emphasis on initial site stabilization, which are to be used to reduce pollutants in stormwater discharges from the construction site;
- Be site specific to what is taking place on a particular construction site;
- Ensure compliance with the terms and conditions of this permit; and
- Identify the responsible party for on-site SWPPP implementation.

1. Deadlines for Plan Preparation and Compliance.

A. *Large Construction Sites.*

The plan shall be completed and submitted for review, along with a NOI and initial permit fee 2 weeks prior to commencement of construction activities. Submittals of updates to the plan during the construction process are required only if requested by the Director.

B. *Automatic Coverage Sites.*

The plan shall be completed prior to the commencement of construction activities and updated as appropriate. Submittal of NOI, permit fee and SWPPP is not required. All conditions set forth in Part II.A must be followed and the NOC must be posted at the site prior to commencing construction. In addition, a copy of the SWPPP must be available at the construction site in accordance with Part II.2. B and D prior to commencing construction.

C. *Existing Permittees.*

Existing permittees, that were permitted prior to the issuance of this renewal permit, are required to update their plan as appropriate to come into compliance with the requirements contained in Part II.A.4 within **ninety (90) days** from the effective date of this permit.

2. Signature, Stormwater Pollution Prevention Plan (SWPPP), Inspection Reports and Notice of Coverage (NOC).

A. The SWPPP and inspection reports shall be signed by the operator (or cognizant official) in accordance with Part II.B.9 and be retained at the construction site during normal business hours (8:00 A.M. – 5:00 P.M.).

B. The operator shall make SWPPP and inspection reports available, upon request, to the Director, the EPA, or a State or local agency reviewing sediment and erosion plans, grading plans, or stormwater management plans, or, in the case of a stormwater discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the municipal operator of the system.

C. The Director, or authorized representative, may notify the operator at any time that the plan does not meet one or more of the minimum requirements of this Part. Within seven (7) business days of such notification from the Director, (or as

otherwise provided by the Director), or authorized representative, the operator shall make the required changes to the plan and submit to the Director a written certification that the requested changes have been made. The Department may request re-submittal of the SWPPP to confirm that all deficiencies have been adequately addressed. The Department may also take appropriate enforcement action for the period of time the operator was operating under SWPPP that did not meet the minimum requirements of this permit.

D. The operator must post the NOC near the main entrance of the construction site and visible to the public. The NOC will indicate the location of the SWPPP. If the SWPPP location is changed from the initial location, the NOC shall be updated to reflect the correct location of the SWPPP

3. **Keeping SWPPP Current.** The operator shall amend the SWPPP within seven (7) business days or whenever there is a change in design, construction, operation, or maintenance at the construction site which has or could have a significant effect on the potential for the discharge of pollutants to the Waters of the State that has not been previously addressed in the SWPPP. The SWPPP should also be modified if a determination has been made through inspections, monitoring (if required), ***or*** investigation by the operator, local, state, or federal officials that the discharges are causing or contributing to water quality violation or the plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified in stormwater discharges from the construction site.

4. **Contents of the Stormwater Pollution Prevention Plan (SWPPP).** The SWPPP shall include the following items:

A. *Site Description*. SWPPP shall provide a description of the following:

1) A description of the nature of the construction activity and its intended use after the Notice of Intent (NOI) is filed (i.e., residential subdivision, shopping mall, etc.);
2) A description of the intended sequence of major activities which disturb soils for major portions of the site (e.g. grubbing, excavation, grading, infrastructure installation, etc.);
3) Estimates of the total area of the site (including off-site borrow and fill areas) and the total area of the site that is expected to be disturbed by excavation, grading or other activities; and
4) An estimate of the runoff coefficient of the site for pre- and post-construction activities and existing data describing the soil or the quality of any discharge from the site.

B. *Responsible Parties*. The SWPPP must identify (as soon as this information is known) all parties (i.e., General Contractors, Landscapers, Project Designers, and Inspectors) responsible for particular services they provide to the operator to comply with the requirements of the SWPPP for the project site, and areas over which each party has control. If these parties change over the life of the permit, or new parties are added, then the SWPPP should be updated to reflect these changes.

C. *Receiving Waters*. The SWPPP must include a clear description of the nearest receiving water(s), or if the discharge is to a municipal separate storm sewer, the name of the operator of the municipal system, and the ultimate receiving water(s).

D. *Documentation of Permit Eligibility Related to the 303 (d) list and Total Maximum Daily Loads (TMDL)*. The SWPPP should include information on whether or not the stormwater discharges from the site enter a water body that is on the most recent 303 (d) list or with an approved TMDL. If the stormwater discharge does enter a water body that is on the most recent 303(d) list or with an approved TMDL, then the SWPPP should address the following items:

1) Identification of the pollutants that the 303 (d) list or TMDL addresses, specifically whether the 303 (d) list or TMDL addresses sediment or a parameter that addresses sediment (such as total suspended solids, turbidity, or siltation);
2) Identification of whether the operator's discharge is identified, either specifically or generally, on the 303 (d) list or any associated assumptions and allocations identified in the TMDL for the discharge; and
3) Measures taken by the operator to ensure that its discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL.

If the Department determines during the review process that the proposed project will be discharging to a receiving water that is on the most recent 303 (d) list or with an approved TMDL, then the Department will notify the applicant to include additional Best Management Practices in the SWPPP.

E. *Attainment of Water Quality Standards After Authorization*.

1) The permittee must select, install, implement, and maintain BMPs at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained below, the SWPPP developed, implemented, and updated to be considered as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any applicable water quality standard.

2) At any time after authorization, the Department may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:

   a. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

   b. Cease discharges of pollutants from construction activity and submit an individual permit application.

3) All written responses required under this part must include a signed certification (Part II.B.9)

F. *Site Map*. The SWPPP must contain a legible site map (or multiple maps, if necessary) complete to scale, showing the entire site, that identifies, at a minimum, the following:

1) Pre-construction topographic view;
2) Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
3) Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
4) Location of major structural and nonstructural controls identified in the plan;
5) Location of main construction entrance and exit;
6) Location where stabilization practices are expected to occur;
7) Locations of off-site materials, waste, borrow area, or equipment storage area;
8) Location of areas used for concrete wash-out;
9) Location of all surface water bodies (including wetlands);
10) Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
11) Locations where stormwater is discharged off-site (should be continuously updated);
12) Areas where final stabilization has been accomplished and no further construction phase permit requirements apply.

G. *Stormwater Controls*. Each plan shall include a description of appropriate controls and measures that will be implemented at the construction site. The plan will clearly describe for each activity identified in the project description control measures associated with the activity and the schedule during the construction process that the measures will be implemented. Perimeter controls for the site must be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls must be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls must be removed after final stabilization and properly disposed. The description and implementation of controls shall address the following minimum components:

1) Initial Site Stabilization, Erosion, and Sediment Controls and Best Management Practices. Design, install, implement and maintain effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum the following controls and Best Management Practices (BMPs) must be designed, installed, implemented and maintained. Therefore, the SWPPP must address, at a minimum, the following:

   a. For larger common plans, only streets, drainage, utility areas, areas needed for initial construction of streets (e.g., borrow pits, parking areas, etc.) and areas needed for stormwater structures may be disturbed initially. Upon stabilization of the initial areas, additional areas may be disturbed.
   b. The construction-phase erosion (such as site stabilization) and sediment controls (such as check dams) should be designed to retain sediment on-site to the extent practicable.
   c. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications, good engineering, and construction practices. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee must replace or modify the control for site situations.
   d. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in street could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets). This permit does not give the authority to trespass onto other property; therefore this condition should be carried out along with the permission of neighboring land owners to remove sediment.
   e. Sediment must be removed from sediment traps (if used please specify what type) or sedimentation ponds when design capacity has been reduced by 50%.
   f. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls picked up daily).
   g. Off-site material storage areas (also including overburden and stockpiles of dirt, borrow areas, etc.) used solely by the permitted project are considered a part of the project and shall be addressed in the SWPPP.

2) Stabilization practices. The SWPPP must include, at a minimum, the following information:

   a. Description and Schedule: A description of initial, interim, and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed areas are stabilized. Stabilization practices may include: mulching, temporary seeding, permanent seeding, geotextiles, sod stabilization, natural buffer strips, protection of trees, and preservation of mature vegetation and other appropriate measures.

   b. Description of natural buffer areas: The Department requires that a natural buffer zone be established between the top of stream bank and the disturbed area. The SWPPP must contain a description of how the site will maintain natural buffer zones. For construction projects where clearing and grading activities will occur, SWPPP must provide at least twenty-five (25) feet of natural buffer zone from any named or unnamed streams, creeks, rivers, lakes or other water bodies. The plan must also provide at least fifty (50) feet of natural buffer zone from established TMDL water bodies, streams listed on the 303 (d)-list, an Extraordinary Resource Water (ERW), Ecologically Sensitive Waterbody (ESW), Natural and Scenic Waterway (NSW), and/or other uses at the discretion of the Director. If the site will be disturbed within the recommended buffer zone, then the buffer zone area must be stabilized as soon as possible. Exceptions from this requirement for areas, such as water crossings, limited water access, and restoration of the buffer are allowed if the permittee fully documents in the SWPPP the circumstances and reasons for the buffer zone encroachment. Additionally, this requirement is not intended to interfere with any other ordinance, rule or regulation, statute or other provision of law. Please note that above-grade clearing that does not disturb the soil in the buffer zone area does not have to comply with buffer zone requirements.

   c. Records of Stabilization: A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the plan.

d. Deadlines for Stabilization: Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily ceased, but in no case more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased, except:

(1) Where the initiation of stabilization measures by the fourteenth (14^{th}) day after construction activity temporarily ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

(2) In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority.

3) Structural Practices. A description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the Clean Water Act. Such practices may include but are not limited to:

- silt fences (installed and maintained)
- earthen dikes to prevent run-on
- drainage swales to prevent run-on
- check dams
- subsurface drains
- pipe slope drains
- storm drain inlet protection
- rock outlet protection
- sediment traps
- reinforced soil retaining systems
- gabions
- temporary or permanent sediment basins.

A combination of erosion and sediment control measures is encouraged to achieve maximum pollutant removal. Adequate spillway cross-sectional area and re-enforcement must be provided for check dams, sediment traps, and sediment basins.

a. Sediment Basins:

(1) For common drainage locations that serve an area with ten (10) or more acres (including run-on from other areas) draining to a common point, a temporary or permanent sediment basin that provides storage based on either the smaller of 3600 cubic feet per acre, or a size based on the runoff volume of a 10 year, 24 hour storm, shall be provided where attainable (so as not to adversely impact water quality) until final stabilization of the site. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils, slope, available area on site, etc. Proper hydraulic design of the outlet is critical to achieving the desired performance of the basin. The outlet should be designed to drain the basin within twenty-four (24) to seventy-two (72) hours. (A rule of thumb is one square foot per acre for a spillway design.) The 24-hour limit is specified to provide adequate settling time; the seventy-two (72)-hour limit is specified to mitigate vector control concerns. If a pipe outlet design is chosen for the outfall, then an emergency spillway is required. If "non-attainability" is claimed, then an explanation of non-attainability shall be included in the SWPPP**.** Where a sediment basin is not attainable, smaller sediment basins and/or sediment traps shall be used. Where a sediment basin is un-attainable, natural buffer strips or other suitable controls which are effective are required for all side slopes and down slope boundaries of the construction area. The plans for removal of the sediment basin should also be included with the description of the basin in the SWPPP.

(2) For drainage locations serving an area less than ten (10) acres, sediment traps, silt fences, or equivalent

sediment controls are required for all side slope and down slope boundaries of the construction area unless a sediment basin providing storage based on either the smaller of 3600 cubic feet per acre, or a size based on the run off volume of a 10 year, 24 hour storm is provided. (A rule of thumb is one square foot per acre for a spillway.) However, in order to protect the Waters of the State, the Director, at their discretion, may require a sediment basin for any drainage areas draining to a common point.

b. Velocity Dissipation Devices:

Velocity dissipation devices must be placed at discharge locations, within concentrated flow areas serving two or more acres, and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (i.e., no significant changes in the hydrological regime of the receiving water). Please note that the use of hay-bales is not recommended in areas of concentrated flow.

H. *Other Controls*.

1) No solid materials, including building materials, shall be discharged to Waters of the State.
2) Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of a stabilized construction entrance and exit and/or vehicle tire washing.
3) For lots that are less than one (1) acre in size an alternative method may be used in addition to a stabilized construction entrance. An example of an alternative method could be daily street sweeping. This could allow for the shortening of the construction entrance.
4) The plan shall ensure and demonstrate compliance with applicable State or local waste disposal, temporary and permanent sanitary sewer or septic system regulations.
5) No liquid concrete waste shall be discharged to Waters of the State. Appropriate controls to prevent the discharge of concrete washout waters must be implemented if concrete washout will occur on-site.
6) No contaminants from fuel storage areas, hazardous waste storage and truck wash areas shall be discharged to waters of the State. Methods for protecting these areas shall be identified and implemented. These areas should not be located near a water body, if there is a water body on or near the project.

I. *Non-stormwater discharges*. Sources of non-stormwater listed in Part I.B.10 of this permit that are combined with stormwater discharges associated with construction activity must be identified in the plan. This list should be site specific non-stormwater discharges.

J. *Post-Construction Stormwater Management*. The operator is required to provide a description of measures that will be installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed. Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 (Corps of Engineers) of the Clean Water Act. This permit only addresses the installation of stormwater management measures, and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. However, post-construction stormwater BMPs that discharge pollutants from a point source once construction is completed may need authorization under a separate ADEQ NPDES permit. Such practices may include but are not limited to:

- infiltration of runoff onsite
- flow attenuation by use of open vegetated swales and natural depressions
- stormwater retention structures
- stormwater detention structures (including wet ponds)
- sequential systems, which combine several practices

A goal of at least 80 % removal of total suspended solids from these flows which exceed predevelopment levels should be used in designing and installing stormwater management controls (where practicable). Where this goal is not met, the operator shall provide justification for rejecting each practice listed above based on site conditions.

K. *Applicable State or Local Programs*. The SWPPP must be updated as necessary to reflect any revisions to applicable federal, state, or local requirements that affect the stormwater controls implemented at the site.

L. *Inspections*.

Inspections should conducted by qualified personnel (provided by the operator). Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Erosion and sedimentation control measures must be observed to ensure proper operation. Discharge locations must be inspected to determine whether erosion control measures are effective in preventing significant impacts to Waters of the State, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections may not be required if the lot(s) within a larger common plan is/are sufficiently stabilized. In addition, inspections may not be required on a completed section of a linear project if that section has been sufficiently stabilized. Stabilized areas of the project should be indicated in the SWPPP and site map and show what date they were stabilized. The operator must ensure that no sediment will leave the lot(s) that are stabilized. These lots must be identified within the SWPPP and show what date they were stabilized. If the operator is unable to ensure this, then inspections must continue.

1) Inspection Frequency. Inspections must be conduct in accordance with one of the following schedules listed below. The schedule **must be specified** in the Stormwater Pollution Prevention Plan (SWPPP).

   a. At least once every 7 calendar days, or
   b. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (a rain gauge must be maintained on-site).

2) Inspection Form. The ADEQ inspection form should be used for all inspections. The inspection form should include any erosion/sediment controls that are being used on the site. The form is available on the Departments website www.adeq.state.ar.us. If a different form is used it must at a minimum contain the following information:

   a. Inspector Name and Title
   b. Date of Inspection
   c. Amount of Rainfall and Days Since Last Rain Event (only applicable to Part II.A.4.L.1.b)
   d. Approximate beginning and duration of the storm event
   e. Description of any discharges during inspection
   f. Locations of discharges of sediment/other pollutants
   g. Locations of BMPs in need of maintenance or where maintenance was performed
   h. If the BMPs are in working order and if Maintenance is required (including when scheduled and completed)
   i. Locations that are in need of additional controls
   j. Location and Dates When Major Construction Activities Begin, Occur or Cease
   k. Signature of qualified signatory official, in accordance with Part II.B.9

   Additional information may be added to the inspection report at the permittees discretion.

3) Inspection Records. The report shall be retained as part of the SWPPP for at least three (3) years from the date the site is finally stabilized. The report shall be signed and have a certification statement in accordance with the requirements of this permit.

4) Winter Conditions. Inspections will not be required at construction sites where snow cover exists over the entire site for an extended period, and melting conditions do not exist. If there is any runoff from the site at any time during snow cover, melting conditions would be considered to be existent at the site and this inspection waiver would not apply. Regular inspections, as required by this permit, are required at all other times as specified in this

permit. If winter conditions prevent compliance with the permit, documentation of the beginning and ending date of winter conditions should be included in the SWPPP.

5) Adverse Weather Conditions. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make inspections impractical, such as extended frozen conditions. When adverse weather conditions prevent the inspection of the site, an inspection should be completed as soon as is safe and feasible. If adverse weather conditions prevent compliance with the permit, documentation of the beginning and ending date of adverse weather conditions should be included in the SWPPP.

M. *Maintenance*. A description of procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition shall be outlined in the plan. Any repairs that are needed based on an inspection shall be completed, when practicable, before the next storm event, but not to exceed a period of three (3) business days of discovery, or as otherwise directed by state or local officials. However, if conditions do not permit large equipment to be used, a longer time frame is allowed if the condition is thoroughly documented on the inspection form. Maintenance for manufactured controls must be done at a minimum of the manufacture's specifications. Maintenance for non-manufactured controls, i.e. check dams, sediment traps, must be done upon 50% capacity.

N. *Employee Training*. The permittee is responsible for training personnel who are responsible for implementing activities identified in the SWPPP on the components and goals of the SWPPP and the requirements of the general permit. This includes contractors and subcontractors. Training should be given by a knowledgeable and qualified trainer. The SWPPP shall identify periodic dates for such training and records of training must be maintained with the SWPPP. Training records that are maintained electronically (i.e. database, etc) do not need to be maintained with the SWPPP, but must be accessible upon request. Formal training classes given by Universities or other third-party organizations are not required but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.

5. Plan Certification. The SWPPP Certification must be signed by either the operator or the cognizant official identified on the Notice of Intent. All documents required by the permit and other information requested by the Director shall be signed by operator or by a duly authorized representative of the operator (Please see Part II.B.10 below for certification).

SECTION B: STANDARD PERMIT CONDITIONS

1. **Retention of Records.**

   A. The operator shall retain records of all Stormwater Pollution Prevention Plans, all inspection reports required by this permit, and records of all data used to complete the Notice of Intent (NOI) to be covered by this permit for a period of at least three years from the date the Notice of Termination letter is signed by the Department. This period may be extended by request of the Director at any time.

   B. The operator shall retain a signed copy of the Stormwater Pollution Prevention Plan (SWPPP) and inspection reports required by this permit at the construction site from the date of project initiation to the date of final stabilization.

2. **Duty to Comply.** The operator must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for: enforcement action; permit termination, revocation and re-issuance, or modification; or denial of a permit renewal application.

3. **Penalties for Violations of Permit Conditions.** The Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.) provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a criminal penalty of not more than twenty five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

4. **Continuance of the Expired General Permit.** An expired general permit continues in force and effect until a new general permit is issued. If this permit is not re-issued or replaced prior to the expiration date, it will be administratively continued in accordance with Arkansas Act 731 of 2011 and remain in force and effect. If the permittee were granted permit coverage prior to the expiration date, the permittee will automatically remain covered by the continued permit until the earliest of:

   A. Re-issuance or replacement of this permit, at which time operators must comply with the conditions of the new permit, within 180 days prior to expiration date and no later than 30 days prior to expiration date; or

   B. The operator's submittal of a Notice of Termination (NOT); or

   C. Issuance of an individual permit for the project's discharges; or

   D. A formal permit decision by the ADEQ to not re-issue this general permit, at which time operators must seek coverage under an individual permit.

   Small site operators are responsible for ensuring that the site is in compliance with any changes or updates of this general permit, by reviewing the ADEQ website at:
   http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/construction/construction.htm .

5. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. **Duty to Mitigate.** The operator shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has reasonable likelihood of adversely affecting human health or the environment.

7. **Duty to Provide Information.** The operator shall furnish to the Director, an authorized representative of the Director, the

EPA, a State or local agency reviewing sediment and erosion plans, grading plans, or stormwater management plans, or in the case of a stormwater discharge associated with industrial activity which discharges through a Municipal Separate Storm Sewer System (MS4) with an NPDES permit, to the municipal operator of the system, within a reasonable time, any information which is requested to determine compliance with this permit.

8. **Other Information.** When the operator becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Director, he or she shall promptly submit such facts or information.

9. **Signatory Requirements.** All Notices of Intent (NOIs), reports, or information submitted to the Director or the operator of a regulated small, medium, or large municipal separate storm sewer system shall be signed and certified.

   A. All Notices of Intent shall be signed as follows:

      1) For a corporation: by a responsible corporate officer. For purposes of this section, a responsible corporate officer means:

         a. A president, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

         b. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to ensure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

      2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;

      3) For a municipality, State, Federal or other public agency: By either a principal executive or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

         a. The chief executive officer of the agency; or

         b. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

   B. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

      1) The authorization is made in writing by a person described above and submitted to the Director;

      2) The authorization specifies either an individual or a person having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility, or position of equivalent responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

      3) Changes to authorization. If an authorization under this Part is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the above requirements must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

10. **Certification.** Any person signing a document under this section shall make the following certification:

    "I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

    Note: For this permit only, "this document" refers to the Stormwater Pollution Prevention Plan, "attachments" refers to the site map and inspection forms, and "system" is referencing the project site.

11. **Penalties for Falsification of Reports.** The Arkansas Water and Air Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part II.B.3 of this permit and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.).

12. **Penalties for Tampering.** The Arkansas Water and Air Pollution Control act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than twenty five thousand dollars ($25,000) or by both such fine and imprisonment.

13. **Oil and Hazardous Substance Liability.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under Section 311 of the Clean Water Act or Section 106 of CERCLA.

14. **Property Rights.** The issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property, any invasion of personal rights, or any infringement of Federal, State, or local laws or regulations.

15. **Severability.** The provisions of this permit are severable. If any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provisions to other circumstances and the remainder of this permit shall not be affected thereby.

16. **Transfers.** This permit is not transferable to any person except after notice to the Director. A transfer form must be submitted to the ADEQ as required by this permit.

17. **Proper Operation and Maintenance.** The operator shall at all times:

    A. Properly operate and maintain all systems of treatment and control (and related appurtenances) which are installed or used by the operator to achieve compliance with the conditions of this permit. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by an operator only when the operation is necessary to achieve compliance with the conditions of the permit.
    B. Provide an adequate operating staff which is duly qualified to carry out operation, inspection, maintenance, and testing functions required to ensure compliance with the conditions of this permit.

18. **Inspection and Entry.** The operator shall allow the Director, the EPA, or an authorized representative, or, in the case of a construction site which discharges to a municipal separate storm sewer, an authorized representative of the municipal operator of the separate sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

A. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
C. Inspect at reasonable times any facilities or equipment, including monitoring and control equipment and practices or operations regulated or required by the permit;
D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location on the permitted property.

19. Permit Actions. This permit may be modified, revoked and reissued, or terminated for any cause including, but not limited to, the following;

A. Violation of any terms or conditions of this permit;
B. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge;
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
E. Failure of the operator to comply with the provisions of ADEQ Regulation No. 9 (Fee Regulation). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR 122.64 and 124.5(d), as adopted by reference in ADEQ Regulation No. 6, and the provisions of ADEQ Regulation No. 8.

20. Re-Opener Clause.

A. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with industrial activity covered by this permit, the operator of such discharge may be required to obtain an individual permit or an alternative general permit in accordance with Part I.B.22 of this permit, or the permit may be modified to include different limitations and/or requirements.

B. Permit modification or revocation will be conducted in accordance with the provisions of 40 CFR 122.62, 122.63, 122.64 and 124.5, as adopted by reference in ADEQ Regulation No. 6.

21. Local Requirements. All dischargers must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding any discharges of stormwater to storm drain systems or other water sources under their jurisdiction, including applicable requirements in municipal stormwater management programs developed to comply with the ADEQ permits. Dischargers must comply with local stormwater management requirements, policies, or guidelines including erosion and sediment control.

22. Applicable Federal, State Requirements. Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal, state or local statute, ordinance policy, or regulation.

Appendix B
Notice of Intent

ADEQ

A R K A N S A S
Department of Environmental Quality

NOTICE OF INTENT
FOR DISCHARGES OF STORMWATER
ASSOCIATED WITH LARGE CONSTRUCTION ACTIVITY
AUTHORIZED UNDER NPDES GENERAL PERMIT ARR150000

The enclosed form may be used to obtain coverage under NPDES general permit ARR150000 for discharges of stormwater associated with large construction activity at any site or common plan of development or sale that will result in the disturbance of five (5) or more acres of total land area.

Return the completed form to:

Arkansas Department of Environmental Quality
Permit Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118

Unless notified by the Director to the contrary, dischargers who submit a complete Notice of Intent in accordance with the requirements of this permit are authorized to discharge stormwater from construction sites under the terms and conditions of this permit two weeks after the date the NOI is postmarked.

As required by ADEQ Regulation No. 9, an initial permit fee of $200.00 must be submitted with this NOI. Subsequent annual fees of $200.00 per year will be billed by the Department. Failure to remit the required permit fee may be grounds for the Director to deny coverage under this general permit, and to require the owner or operator to apply for an individual NPDES permit.

NOTE: A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED PRIOR TO SUBMITTAL OF THIS NOI PER PART II.A OF THE GENERAL PERMIT. THE SWPPP MUST BE SUBMITTED FOR REVIEW ALONG WITH THIS NOI FOR LARGE CONSTRUCTION SITES PER PART I.B.6.B OF THE GENERAL PERMIT.

For additional information please contact:

Stormwater Runoff Engineer
Ph.: (501) 682-0623
Fax: (501) 682-0880
website: www.adeq.state.ar.us

INSTRUCTIONS

I. How to Determine Latitude and Longitude:

1. If a physical address is known go to www.terraserver-usa.com.
2. Select Advanced Find
3. Select Address
4. Input address
5. Click on Aerial Photo
6. Click on the Info link at the top of the page
7. Note the Latitude and Longitude are in Decimal Coordinates.
8. Go to www.geology.enr.state.nc.us/gis/latlon.html to convert coordinates to Degrees, Minutes, and Seconds.

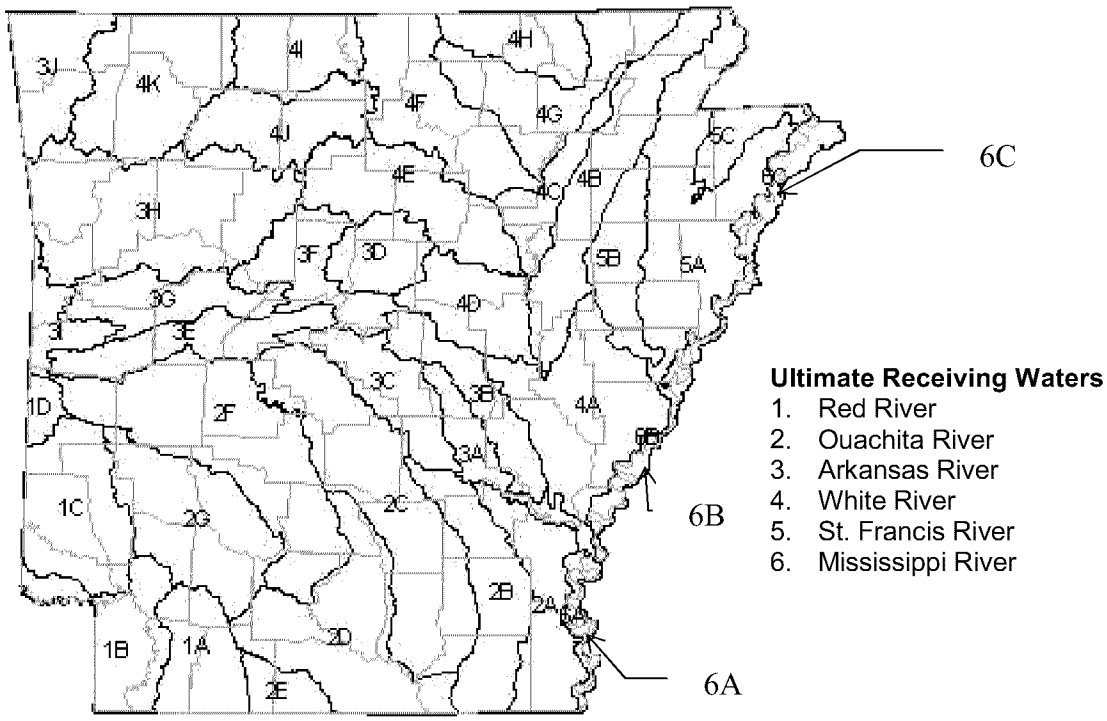
NOTE: If a physical address does not exist you may find the coordinates in the Legal Description of the property.

ADEQ

A R K A N S A S
Department of Environmental Quality

II. How to Determine your Ultimate Receiving Waters:

1. Locate the county of your project.
2. Find the numbered segment overlaying the county. For example 2C overlays most of Saline County.
3. Match the number from the segment to the one of the numbered Ultimate Receiving Waters. For example: A project located in Western Saline County is in segment 2C. The "2" determines that the Ultimate Receiving Water for the project is the Ouachita River.



Ultimate Receiving Waters

1. Red River
2. Ouachita River
3. Arkansas River
4. White River
5. St. Francis River
6. Mississippi River

III. How to determine if the receiving stream is on the approved Arkansas 303(d) List:

1. Go to www.epa.gov/owow/tmdl
2. Using the map of the United States, click on Arkansas.
3. Using the "Waters Listed by Waterbody Type" links search for your receiving stream.
4. If your receiving stream is not listed, than your receiving stream is not on the approved Arkansas 303(d) List.
5. If your receiving stream is listed, than click on the links for that receiving stream to determine the pollutants causing the impairment.
6. Once a determination is made that your receiving stream is on the approved Arkansas 303(d) List, than you must determine if the receiving stream has an approved TMDL by using the "Approved TMDLs by Pollutant since January 1, 1996" links toward the bottom of the webpage.

IV. How to obtain information in regard to Endangered Species:

Contact the U.S. Fish and Wildlife Service at (501) 513-4470 or www.fws.gov/arkansas-es .

Arkansas Department of Environmental Quality
Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118
(501) 682-0623

NOTICE OF INTENT
FOR DISCHARGERS OF STORMWATER RUNOFF
ASSOCIATED WITH LARGE CONSTRUCTION ACTIVITY
AUTHORIZED UNDER NPDES GENERAL PERMIT ARR150000

Application Type: **New** ☒ **Renewal** ☐ **(Permit Tracking Number ARR(_____)**

I. PERMITTEE/OPERATOR INFORMATION

Permittee (Legal Name): El Dorado Chemical Company

Permittee Mailing Address: P.O. Box 231

Permittee City: El Dorado

Permittee State: AR Zip: 71730

Permittee Telephone Number: 870-863-1400

Permittee Fax Number 870-863-8183

Permittee E-mail Address gwithrow@edc-ark.com

Operator Type:

☐ STATE ☐ PARTNERSHIP

☐ FEDERAL ☒ CORPORATION*

☐ SOLE PROPRIETORSHIP

☐ PUBLIC ☐ OTHER

*State of Incorporation: OK

* The legal name of the Permittee must be identical to the name listed with the Arkansas Secretary of State.

II. INVOICE MAILING INFORMATION

Invoice Contact Person: Kyle Wimsett

Invoice Mailing Company: El Dorado Chemical Company

Invoice Mailing Address: P.O. Box 231

City: El Dorado

State: AR Zip: 71730

Telephone: 870-863-1400

III. FACILITY/PROJECT CONSTRUCTION SITE INFORMATION

1 acre = 43,560 square feet

Project Name: El Dorado Chemical Company

Project County: Union

Directions to the Project: Approximately one mile West of Hwy 7 on North West Avenue

Project Estimated Start Date: August 2013

Project Estimated End Date: August 2016

Contact Person: Kyle Wimsett

Project Physical Address: 4500 North West Avenue

Project City: El Dorado Zip: 71730

Telephone Number: 870-863-1484

Total amount of soil to be disturbed (estimate to nearest 1/2 acre): 11

Total Project Acreage (Estimate to nearest ½ acre): 11

Project Latitude: 33 degrees 15 minutes 49.91 seconds

Project Longitude: -92 degrees 41 minutes 5.29 seconds

Type of Project: Subdivision ☐ School ☒ Other: Facility Improvements

Is the Project part of a larger common plan of development or sale? Yes ☐ No ☒

Linear Project Starting Coordinates (if applicable):

Latitude: ____° ____' ____" Longitude: ____° ____' ____"

Linear Project Ending Coordinates (if applicable):

Latitude: ____° ____' ____" Longitude: ____° ____' ____"

Arkansas Department of Environmental Quality
Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118
(501) 682-0623

IV. DISCHARGE INFORMATION

Name of Receiving Stream (i.e. an unnamed tributary of Mill Creek, thence into Mill Creek; thence into Arkansas River):

Unnamed tributaries of Flat Creek, then to Flat Creek, then to Haynes Creek, then to Smackover Creek, and then to the Ouachita River.

Choose Your Ultimate Receiving Stream: Red River ☐ Ouachita River ☒ Arkansas River ☐
White River ☐ St. Francis River ☐ Mississippi River ☐

Name of Receiving Municipal Storm Sewer System (If applicable): N/A

V. FACILITY/SITE PERMIT INFORMATION

NPDES Individual Permit Number (If Applicable): AR0000752
NPDES General Permit Number (If Applicable): ARG
NPDES General Industrial Stormwater Permit Number (If Applicable): ARR00
NPDES General Construction Stormwater Permit Number (If Applicable): ARR15

VI. OTHER INFORMATION:

Location of SWPPP on the Construction Site: Environmental Department
Consultant Company: GBMc & Associates
Consultant Contact Name: Amanda Gallagher
Consultant Email Address: agallagher@gbmcassoc.com
Consultant Address: 219 Brown Lane City: Bryant State: AR Zip: 72022
Consultant Phone Number: 501-847-7077 Consultant Fax Number: 501-847-7943

Arkansas Department of Environmental Quality
Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118
(501) 682-0623

VII. CERTIFICATION OF OPERATOR

GJW (Initial) "I certify that, if this facility is a corporation, it is registered with the Secretary of State of Arkansas. Please provide the full name of corporation if different than that listed in Section I above. "

GJW (Initial) "I certify that as a whole the stormwater discharge(s), and the construction and implementation of Best Management Practices (BMP's) to control stormwater runoff, are not likely to adversely affect species of critical habitat for a listed species."

GJW (Initial) "I certify that a stormwater pollution prevention plan has been prepared for this facility in accordance with Part II.A of this permit, which provides for, or will provide for, compliance with local sediment and erosion plans, local stormwater permits or stormwater management plans, in accordance with Part II.A.4.c of this permit."

GJW (Initial) "I certify that the cognizant official designated in Part VIII of this Notice of Intent is qualified to act as a duly authorized representative under the provisions of 40 CFR 122.22(b). If no cognizant official has been designated, I understand that the Department will accept reports signed by the applicant"

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Responsible Official Printed Name: Greg Withrow Title: General Manager

Responsible Official Signature: Greg Withrow Date: 8/12/13

VIII. COGNIZANT OFFICIAL

Cognizant Official Printed Name: Kyle Wimsett Title: Environmental, Health, and Safety Manager

Cognizant Official Signature: Kyle Wimsett Telephone: 870-310-8185
870-863-1484

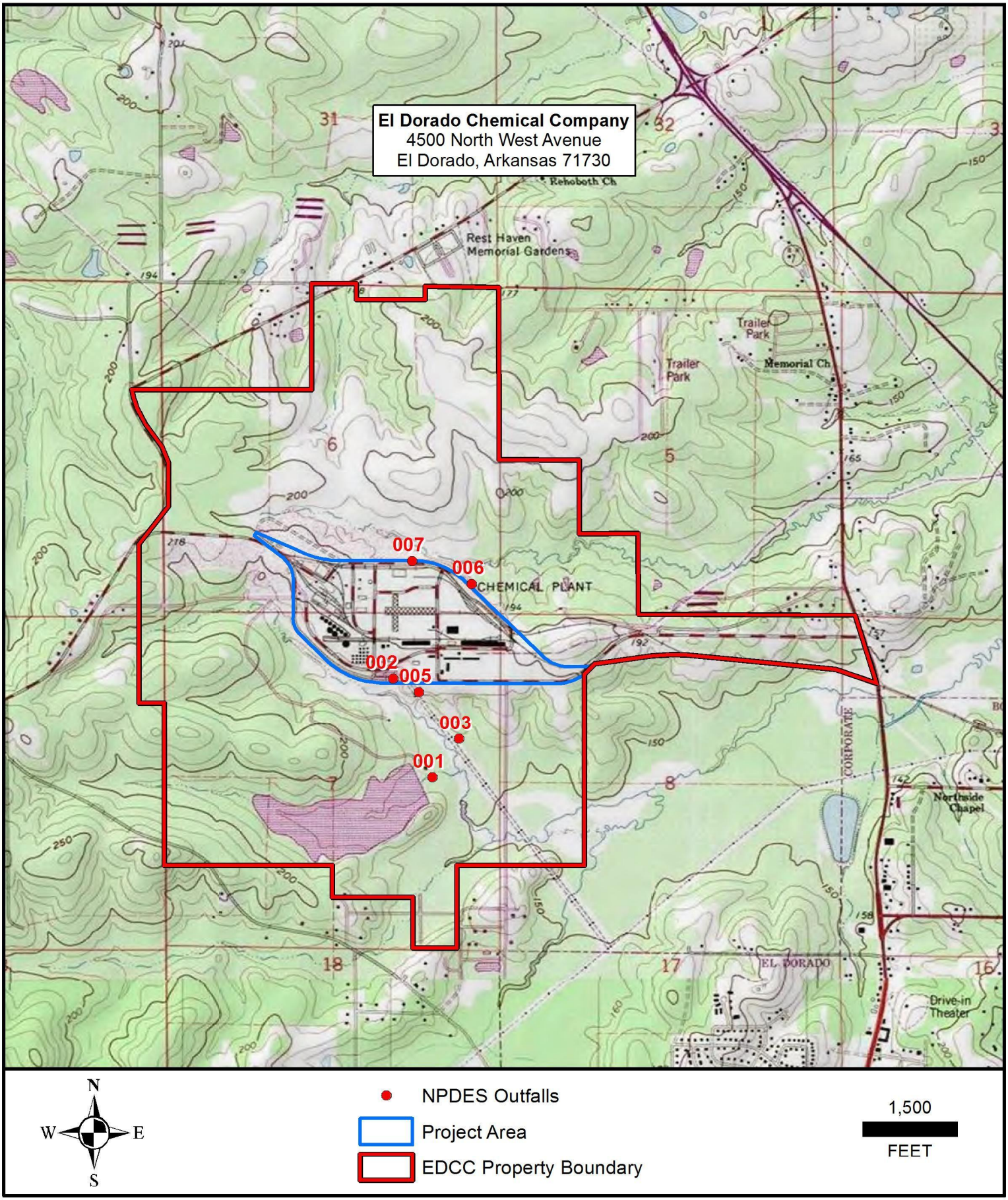
IX. PERMIT REQUIREMENT VERIFICATION

Please check the following to verify completion of permit requirements.

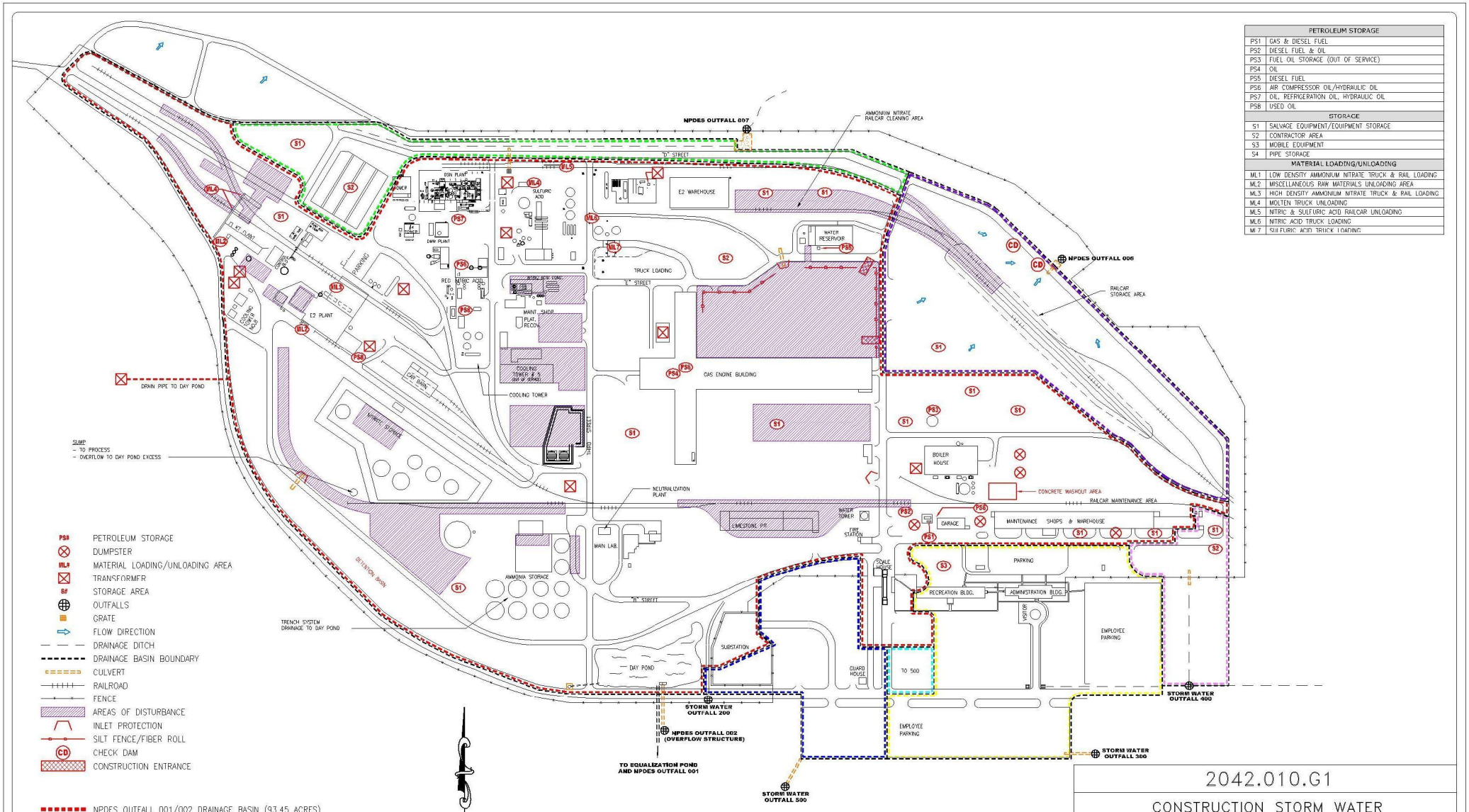
	Yes	No*
Submittal of Complete NOI?	☒	☐
Submittal of Required Permit Fee?	☒	☐
Check Number: _____		
Complete SWPPP?	☒	☐

*** If you answer No to any of the above questions, then a permit can not be issued!**

Appendix C
Site Maps



El Dorado Chemical Company property boundary and outfall locations.



PETROLEUM STORAGE	
PS1	GAS & DIESEL FUEL
PS2	DIESEL FUEL & OIL
PS3	FUEL OIL STORAGE (OUT OF SERVICE)
PS4	OIL
PS5	DIESEL FUEL
PS6	AIR COMPRESSOR OIL/HYDRAULIC OIL
PS7	OIL, REFRIGERATION OIL, HYDRAULIC OIL
PS8	USED OIL
STORAGE	
S1	SALVAGE EQUIPMENT/EQUIPMENT STORAGE
S2	CONTRACTOR AREA
S3	MOBILE EQUIPMENT
S4	PIPE STORAGE
MATERIAL LOADING/UNLOADING	
ML1	LOW DENSITY AMMONIUM NITRATE TRUCK & RAIL LOADING
ML2	MISCELLANEOUS RAW MATERIALS UNLOADING AREA
ML3	HIGH DENSITY AMMONIUM NITRATE TRUCK & RAIL LOADING
ML4	MOLTEN TRUCK UNLOADING
ML5	NITRIC & SULFURIC ACID RAILCAR UNLOADING
ML6	NITRIC ACID TRUCK LOADING
ML7	SULFURIC ACID TRUCK LOADING

PS# PETROLEUM STORAGE
DUMPSTER
ML# MATERIAL LOADING/UNLOADING AREA
TRANSFORMER
S# STORAGE AREA
OUTFALLS
GRATE
FLOW DIRECTION
DRAINAGE DITCH
DRAINAGE BASIN BOUNDARY
CULVERT
RAILROAD
FENCE
AREAS OF DISTURBANCE
INLET PROTECTION
SILT FENCE/FIBER ROLL
CD CHECK DAM
CONSTRUCTION ENTRANCE

NPDES OUTFALL 001/002 DRAINAGE BASIN (93.45 ACRES)
NPDES OUTFALL 006 DRAINAGE BASIN (11.80 ACRES)
NPDES OUTFALL 007 DRAINAGE BASIN (4.96 ACRES)
STORM WATER OUTFALL 200 DRAINAGE BASIN (5.40 ACRES)
STORM WATER OUTFALL 300 DRAINAGE BASIN (11.80 ACRES)
STORM WATER OUTFALL 400 DRAINAGE BASIN (2.89 ACRES)
STORM WATER OUTFALL 500 DRAINAGE BASIN (0.50 ACRES)

200 0 200
SCALE IN FEET

NOTES:

1. IN THE OUTFALL 001 DRAINAGE BASIN A SERIES OF DITCHES, CULVERTS, AND DROP INLETS WITH ASSOCIATED PIPING COLLECT STORM WATER FROM AROUND THE SITE AND DIRECT IT TOWARD THE DAY POND. INLET PROTECTION SHOULD BE INSTALLED AROUND DROP INLETS THAT COLLECT STORM WATER FROM DISTURBED AREAS.
2. ADDITIONAL BMPS WILL BE ADDED AS NECESSARY AS CONSTRUCTION PROGRESSES.

2042.010.G1

CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN

EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Approved by:	AAG	Project No.:	2042-99-010
Checked by:	AAG	Date:	08/08/2013
Drawn by:	IT	Scale:	SHOWN

GBMc
STRATEGIC ENVIRONMENTAL SERVICES
219 Brown Lane
Bryant, AR 72022

Appendix D

Soil Survey Data

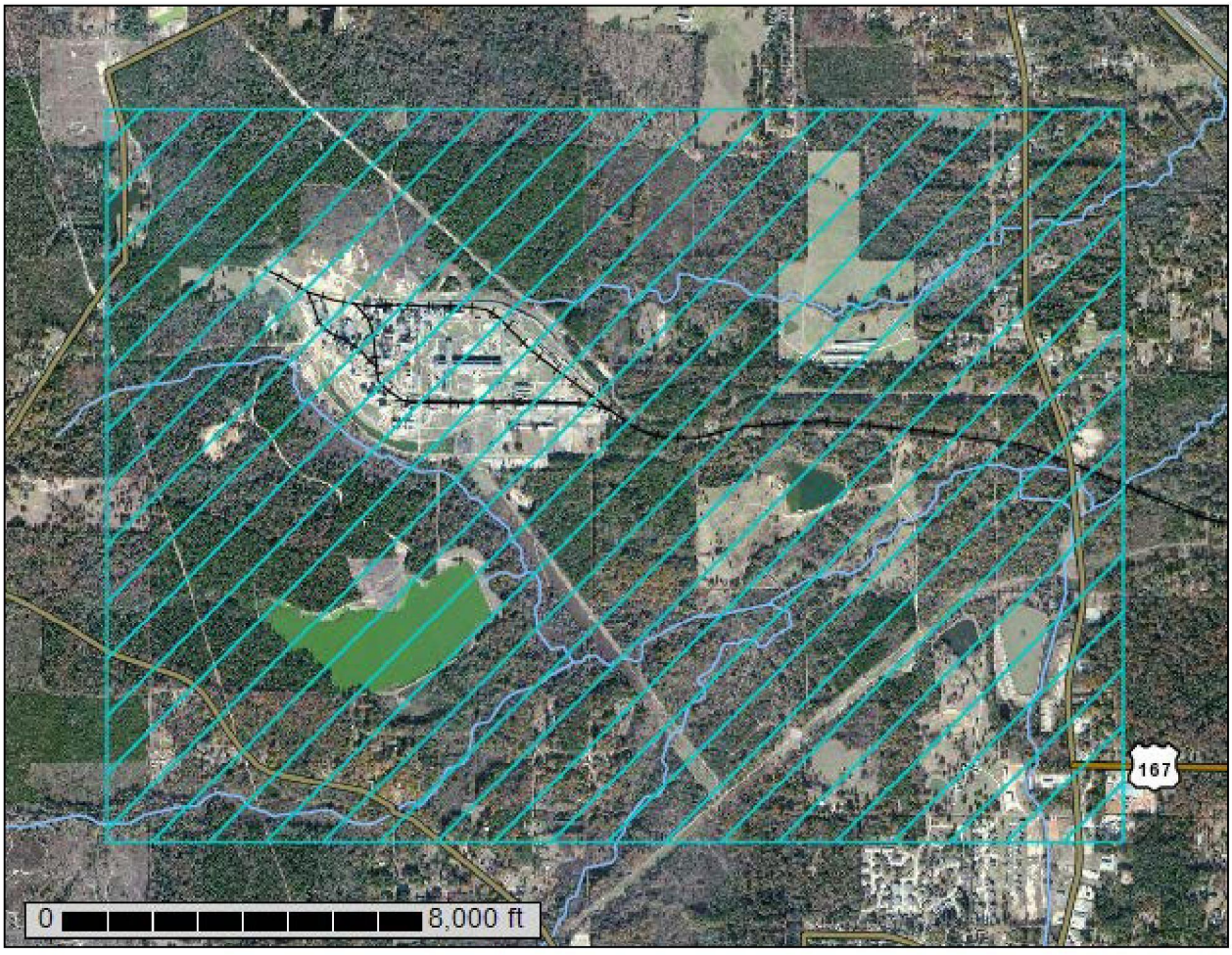
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Union County, Arkansas



July 18, 2013

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

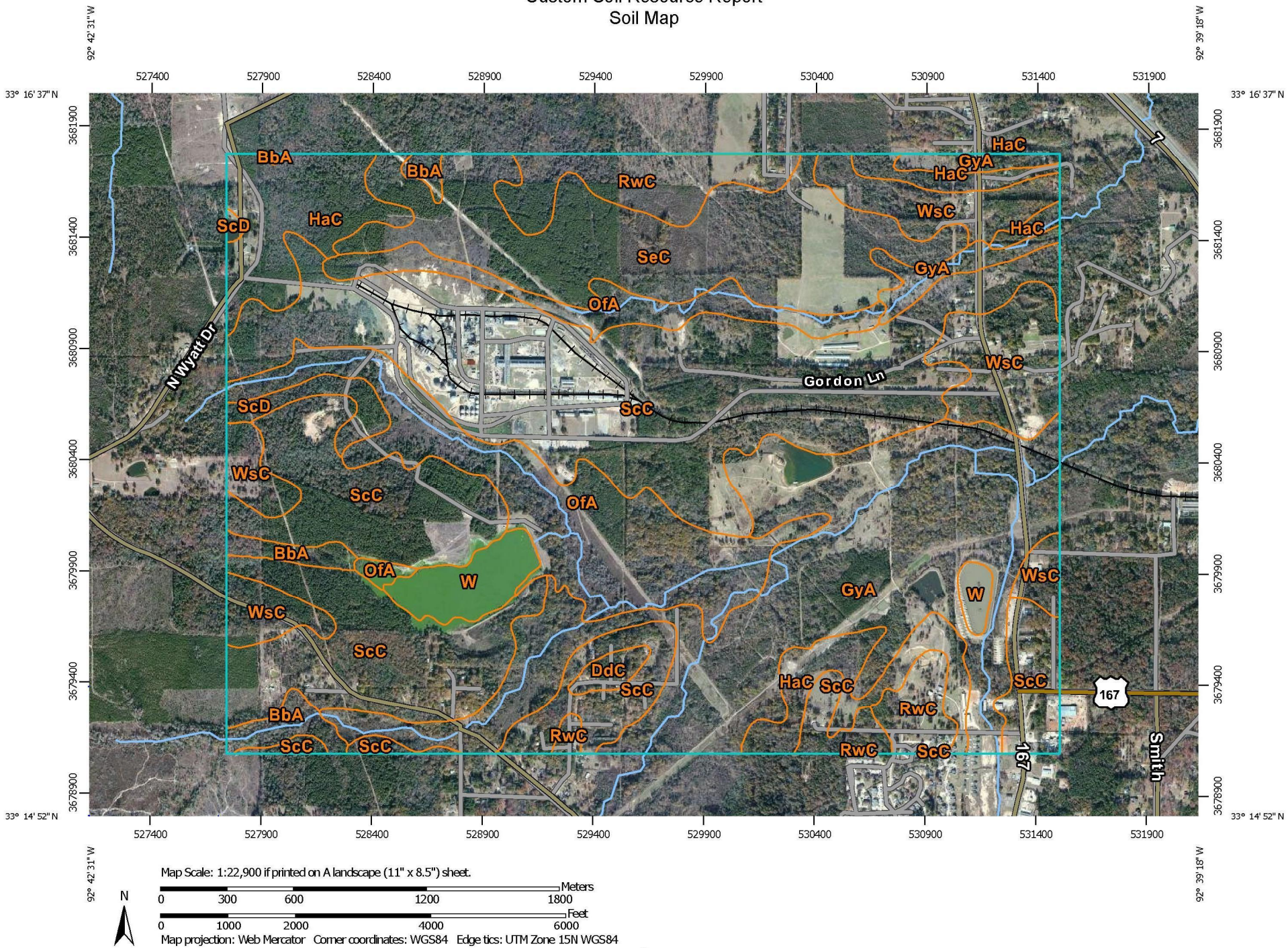
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, Arkansas
Survey Area Data: Version 10, Sep 28, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 13, 2010—Jan 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Union County, Arkansas (AR139)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BbA	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	38.2	1.5%
DdC	Darden loamy fine sand, 1 to 8 percent slopes	11.2	0.4%
GyA	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	490.0	19.4%
HaC	Harleston fine sandy loam, 1 to 8 percent slopes	173.7	6.9%
OfA	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded	275.5	10.9%
RwC	Rosalie-Warnock complex, 1 to 8 percent slopes	105.1	4.2%
ScC	Sacul-Sawyer complex, 1 to 8 percent slopes	904.6	35.9%
ScD	Sacul-Sawyer complex, 8 to 15 percent slopes	24.5	1.0%
SeC	Sawyer very fine sandy loam, 1 to 8 percent slopes	267.9	10.6%
W	Water	49.5	2.0%
WsC	Warnock-Smithdale complex, 1 to 7 percent slopes	181.3	7.2%
Totals for Area of Interest		**2,521.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be

made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Union County, Arkansas

BbA—Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

Elevation: 50 to 450 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Bibb and similar soils: 85 percent
Minor components: 15 percent

Description of Bibb

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy and sandy alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 5w
Hydrologic Soil Group: D

Typical profile

0 to 5 inches: Fine sandy loam
5 to 10 inches: Fine sandy loam
10 to 80 inches: Sandy loam

Minor Components

Gurdon

Percent of map unit: 5 percent
Landform: Stream terraces

Aquents

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Guyton

Percent of map unit: 5 percent

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

DdC—Darden loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

Elevation: 150 to 600 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Darden and similar soils: 90 percent
Minor components: 10 percent

Description of Darden

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 4s
Hydrologic Soil Group: A

Typical profile

0 to 11 inches: Loamy fine sand
11 to 50 inches: Loamy fine sand
50 to 80 inches: Loamy sand

Minor Components

Warnock

Percent of map unit: 5 percent
Landform: Interfluves
Down-slope shape: Linear

Across-slope shape: Convex

Smithdale

Percent of map unit: 5 percent
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex

GyA—Guyton silt loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

Elevation: 50 to 200 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Guyton and similar soils: 85 percent
Minor components: 15 percent

Description of Guyton

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 5w
Hydrologic Soil Group: D

Typical profile

0 to 5 inches: Silt loam
5 to 13 inches: Silt loam
13 to 26 inches: Silt loam
26 to 60 inches: Silt loam
60 to 80 inches: Silty clay loam

Minor Components

Amy
Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread

Una
Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Smithton
Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread

Aquents
Percent of map unit: 2 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

HaC—Harleston fine sandy loam, 1 to 8 percent slopes

Map Unit Setting
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition
Harleston and similar soils: 80 percent
Minor components: 20 percent

Description of Harleston

Setting
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy marine deposits

Properties and qualities
Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Moderate (about 8.7 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: C

Typical profile

0 to 5 inches: Fine sandy loam
5 to 9 inches: Fine sandy loam
9 to 48 inches: Loam
48 to 80 inches: Sandy clay loam

Minor Components

Aquults

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Smithton

Percent of map unit: 5 percent
Landform: Stream terraces

Warnock

Percent of map unit: 3 percent
Landform: Interfluves

Sawyer

Percent of map unit: 3 percent
Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex

Angie

Percent of map unit: 2 percent
Landform: Stream terraces

Sacul

Percent of map unit: 2 percent
Landform: Interfluves

OfA—Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Oil-waste land: 50 percent
Fluvaquents and similar soils: 40 percent
Minor components: 10 percent

Description of Oil-waste Land

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sediment and pollution from oil waste and salt water

Properties and qualities

Slope: 0 to 1 percent
Drainage class: Poorly drained
Depth to water table: About 0 inches

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 8s

Description of Fluvaquents

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sediments influenced by past oil waste contamination

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7s
Hydrologic Soil Group: D

Minor Components

Aquents

Percent of map unit: 10 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

RwC—Rosalie-Warnock complex, 1 to 8 percent slopes

Map Unit Setting

Elevation: 150 to 500 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Rosalie and similar soils: 50 percent
Warnock and similar soils: 40 percent
Minor components: 10 percent

Description of Rosalie

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3s
Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Loamy fine sand
8 to 32 inches: Loamy fine sand
32 to 60 inches: Sandy clay loam
60 to 80 inches: Sandy clay loam

Description of Warnock

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Loamy marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 6 inches: Fine sandy loam
6 to 9 inches: Fine sandy loam
9 to 34 inches: Sandy clay loam
34 to 80 inches: Sandy clay loam

Minor Components

Sawyer

Percent of map unit: 3 percent
Landform: Interfluves

Sacul

Percent of map unit: 3 percent
Landform: Interfluves

Harleston

Percent of map unit: 2 percent
Landform: Interfluves

Angie

Percent of map unit: 2 percent
Landform: Interfluves

ScC—Sacul-Sawyer complex, 1 to 8 percent slopes

Map Unit Setting

Elevation: 150 to 450 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Sacul and similar soils: 45 percent
Sawyer and similar soils: 35 percent
Minor components: 20 percent

Description of Sacul

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C

Typical profile

0 to 5 inches: Fine sandy loam
5 to 12 inches: Fine sandy loam
12 to 31 inches: Clay
31 to 50 inches: Clay loam
50 to 80 inches: Clay loam

Description of Sawyer

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy and clayey marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.5 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 3e
Hydrologic Soil Group: C

Typical profile

0 to 8 inches: Very fine sandy loam
8 to 13 inches: Fine sandy loam
13 to 31 inches: Silty clay loam
31 to 38 inches: Silty clay
38 to 66 inches: Silty clay
66 to 80 inches: Silty clay

Minor Components

Aquults

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Trebloc

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Smithdale

Percent of map unit: 5 percent
Landform: Hillslopes

Harleston

Percent of map unit: 3 percent
Landform: Hillslopes

Rosalie

Percent of map unit: 2 percent
Landform: Hillslopes

ScD—Sacul-Sawyer complex, 8 to 15 percent slopes

Map Unit Setting

Elevation: 150 to 450 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Sacul and similar soils: 50 percent
Sawyer and similar soils: 40 percent
Minor components: 10 percent

Description of Sacul

Setting

Landform: Interfluves
Landform position (two-dimensional): Footslope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey marine deposits

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6e
Hydrologic Soil Group: C

Typical profile

0 to 5 inches: Fine sandy loam
5 to 12 inches: Fine sandy loam
12 to 31 inches: Clay
31 to 50 inches: Clay loam
50 to 80 inches: Clay loam

Description of Sawyer

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy and clayey marine deposits

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.5 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C

Typical profile

0 to 8 inches: Very fine sandy loam
8 to 13 inches: Fine sandy loam
13 to 31 inches: Silty clay loam
31 to 38 inches: Silty clay
38 to 66 inches: Silty clay
66 to 80 inches: Silty clay

Minor Components

Smithdale

Percent of map unit: 10 percent
Landform: Hillslopes

SeC—Sawyer very fine sandy loam, 1 to 8 percent slopes

Map Unit Setting

Elevation: 150 to 450 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Sawyer and similar soils: 85 percent
Minor components: 15 percent

Description of Sawyer

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and clayey marine deposits

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.5 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: C

Typical profile

0 to 8 inches: Very fine sandy loam
8 to 13 inches: Fine sandy loam
13 to 31 inches: Silty clay loam
31 to 38 inches: Silty clay
38 to 66 inches: Silty clay
66 to 80 inches: Silty clay

Minor Components

Trebloc

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Aquults

Percent of map unit: 3 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Convex

Sacul

Percent of map unit: 3 percent
Landform: Hills
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex

Smithdale

Percent of map unit: 2 percent
Landform: Hills

Warnock

Percent of map unit: 2 percent
Landform: Hills

W—Water

Map Unit Setting

Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Water: 100 percent

WsC—Warnock-Smithdale complex, 1 to 7 percent slopes

Map Unit Setting

Elevation: 150 to 450 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 220 to 280 days

Map Unit Composition

Warnock and similar soils: 45 percent
Smithdale and similar soils: 40 percent
Minor components: 15 percent

Description of Warnock

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy marine deposits

Properties and qualities

Slope: 1 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 6 inches: Fine sandy loam
6 to 9 inches: Fine sandy loam
9 to 34 inches: Sandy clay loam
34 to 80 inches: Sandy clay loam

Description of Smithdale

Setting

Landform: Interfluves
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy marine deposits

Properties and qualities

Slope: 1 to 7 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.2 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 6 inches: Fine sandy loam
6 to 10 inches: Fine sandy loam
10 to 36 inches: Sandy clay loam
36 to 80 inches: Sandy loam

Minor Components

Rosalie

Percent of map unit: 5 percent
Landform: Hillslopes

Sacul

Percent of map unit: 5 percent
Landform: Hillslopes

Angie

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

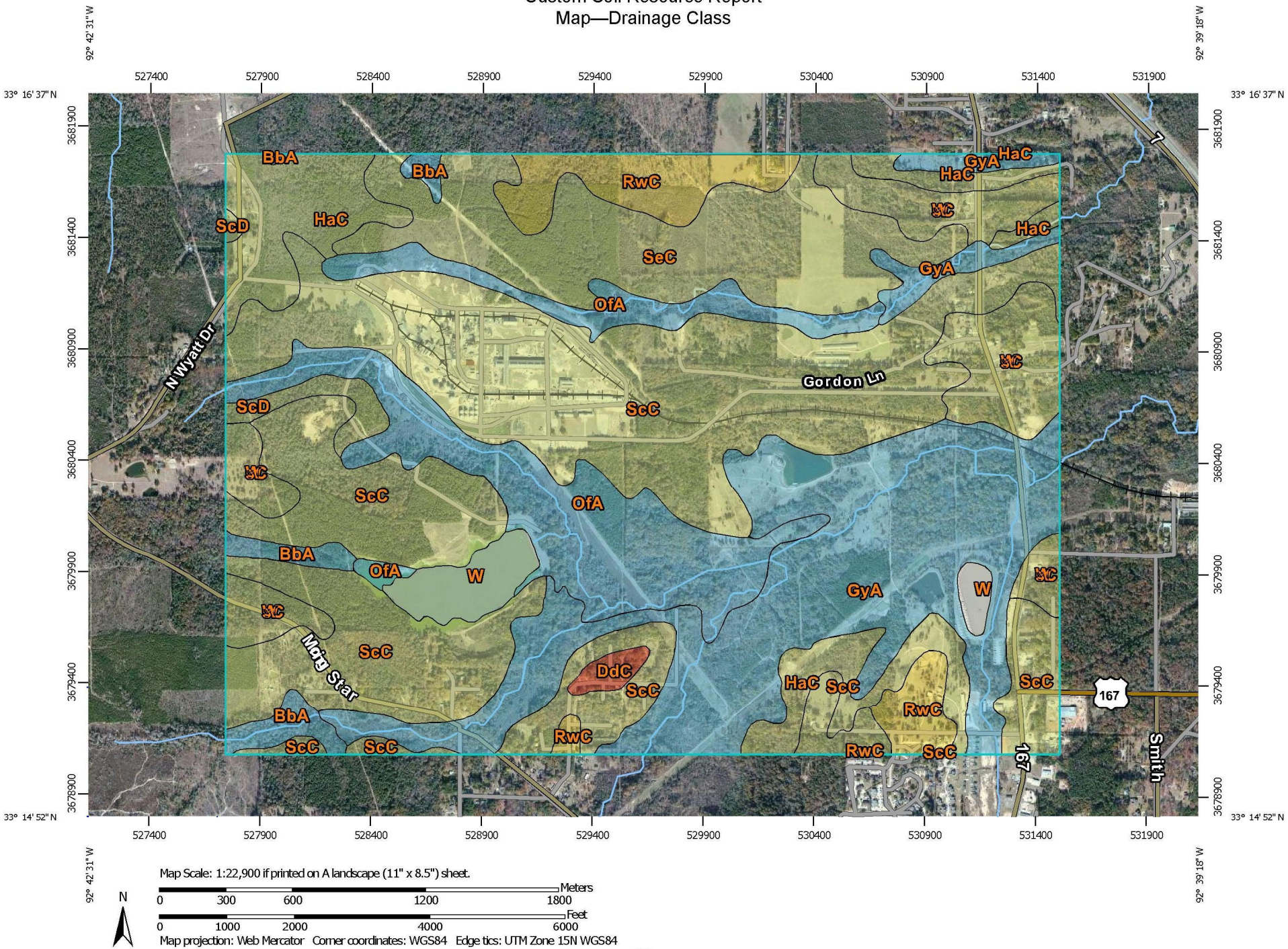
Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Custom Soil Resource Report
Map—Drainage Class



Map Scale: 1:22,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, Arkansas
Survey Area Data: Version 10, Sep 28, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 13, 2010—Jan 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Drainage Class

Drainage Class— Summary by Map Unit — Union County, Arkansas (AR139)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BbA	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	Poorly drained	38.2	1.5%
DdC	Darden loamy fine sand, 1 to 8 percent slopes	Excessively drained	11.2	0.4%
GyA	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	Poorly drained	490.0	19.4%
HaC	Harleston fine sandy loam, 1 to 8 percent slopes	Moderately well drained	173.7	6.9%
OfA	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded	Poorly drained	275.5	10.9%
RwC	Rosalie-Warnock complex, 1 to 8 percent slopes	Well drained	105.1	4.2%
ScC	Sacul-Sawyer complex, 1 to 8 percent slopes	Moderately well drained	904.6	35.9%
ScD	Sacul-Sawyer complex, 8 to 15 percent slopes	Moderately well drained	24.5	1.0%
SeC	Sawyer very fine sandy loam, 1 to 8 percent slopes	Moderately well drained	267.9	10.6%
W	Water		49.5	2.0%
WsC	Warnock-Smithdale complex, 1 to 7 percent slopes	Moderately well drained	181.3	7.2%
Totals for Area of Interest			**2,521.4**	**100.0%**

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

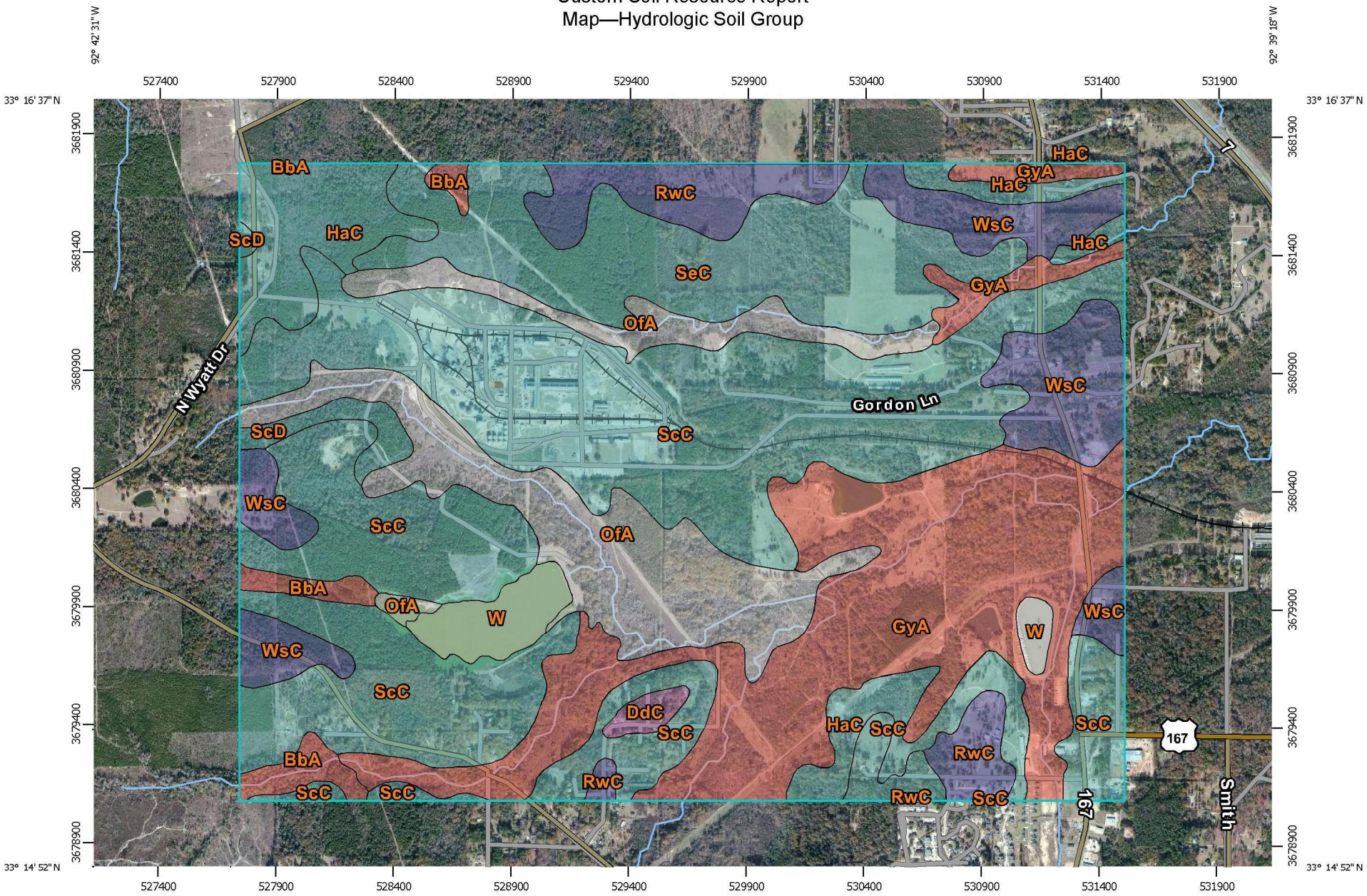
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:22,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, Arkansas
Survey Area Data: Version 10, Sep 28, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 13, 2010—Jan 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Union County, Arkansas (AR139)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BbA	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	D	38.2	1.5%
DdC	Darden loamy fine sand, 1 to 8 percent slopes	A	11.2	0.4%
GyA	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	D	490.0	19.4%
HaC	Harleston fine sandy loam, 1 to 8 percent slopes	C	173.7	6.9%
OfA	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded		275.5	10.9%
RwC	Rosalie-Warnock complex, 1 to 8 percent slopes	B	105.1	4.2%
ScC	Sacul-Sawyer complex, 1 to 8 percent slopes	C	904.6	35.9%
ScD	Sacul-Sawyer complex, 8 to 15 percent slopes	C	24.5	1.0%
SeC	Sawyer very fine sandy loam, 1 to 8 percent slopes	C	267.9	10.6%
W	Water		49.5	2.0%
WsC	Warnock-Smithdale complex, 1 to 7 percent slopes	B	181.3	7.2%
Totals for Area of Interest			**2,521.4**	**100.0%**

Rating Options—Hydrologic Soil Group

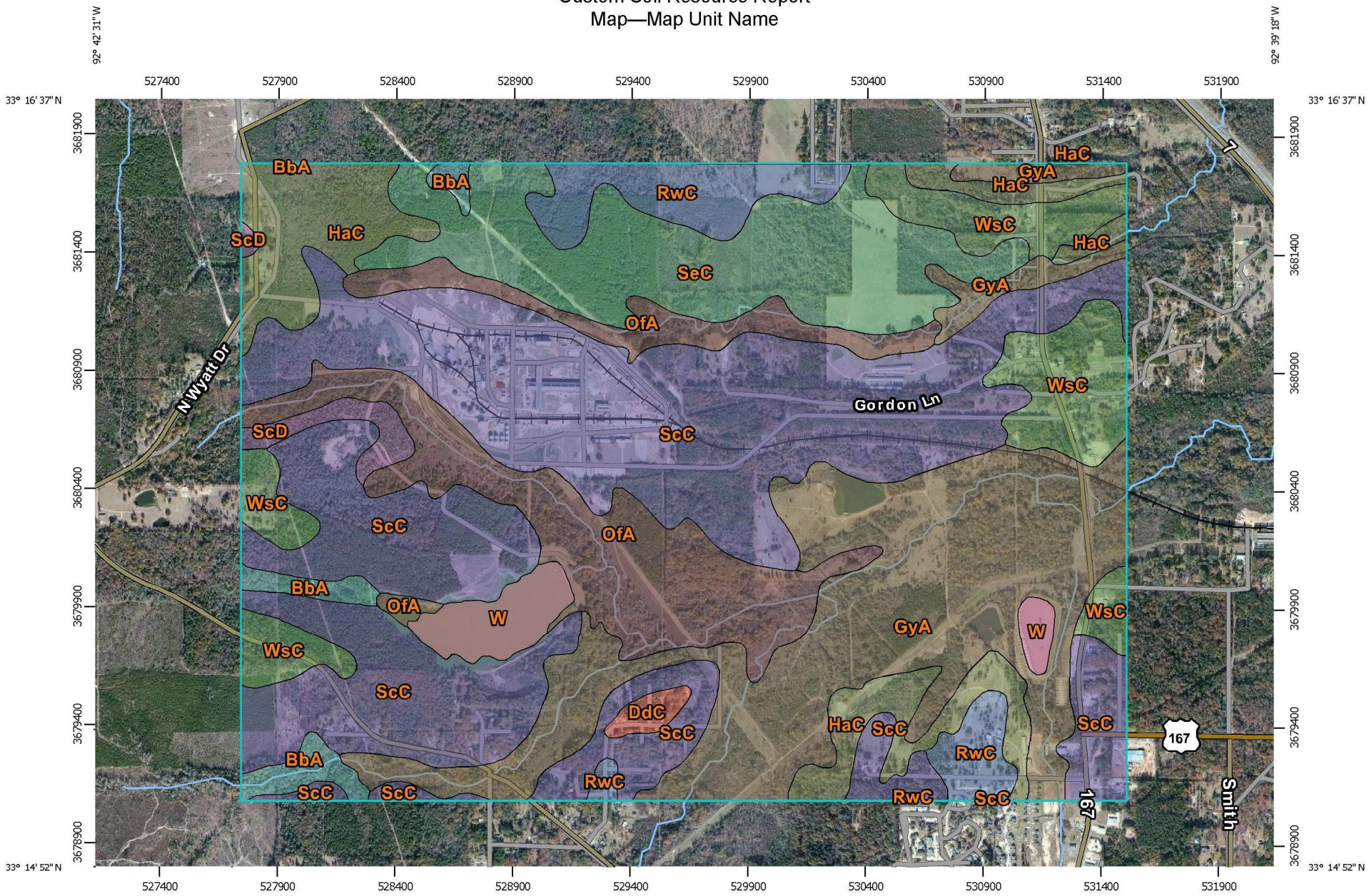
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Map Unit Name

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.



Map Scale: 1:22,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 300 600 1200 1800

Feet
0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded
- Darden loamy fine sand, 1 to 8 percent slopes
- Guyton silt loam, 0 to 1 percent slopes, frequently flooded
- Harleston fine sandy loam, 1 to 8 percent slopes
- Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded
- Rosalie-Warnock complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 8 to 15 percent slopes
- Sawyer very fine sandy loam, 1 to 8 percent slopes
- Warnock-Smithdale complex, 1 to 7 percent slopes
- Water
- Not rated or not available

Soil Rating Lines

- Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded
- Darden loamy fine sand, 1 to 8 percent slopes
- Guyton silt loam, 0 to 1 percent slopes, frequently flooded
- Harleston fine sandy loam, 1 to 8 percent slopes
- Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded
- Rosalie-Warnock complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 8 to 15 percent slopes
- Sawyer very fine sandy loam, 1 to 8 percent slopes
- Warnock-Smithdale complex, 1 to 7 percent slopes
- Water
- Not rated or not available

Soil Rating Points

- Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded
- Darden loamy fine sand, 1 to 8 percent slopes
- Guyton silt loam, 0 to 1 percent slopes, frequently flooded
- Harleston fine sandy loam, 1 to 8 percent slopes
- Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded
- Rosalie-Warnock complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 1 to 8 percent slopes
- Sacul-Sawyer complex, 8 to 15 percent slopes
- Sawyer very fine sandy loam, 1 to 8 percent slopes
- Warnock-Smithdale complex, 1 to 7 percent slopes
- Water
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, Arkansas
Survey Area Data: Version 10, Sep 28, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 13, 2010—Jan 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Map Unit Name

Map Unit Name— Summary by Map Unit — Union County, Arkansas (AR139)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BbA	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	38.2	1.5%
DdC	Darden loamy fine sand, 1 to 8 percent slopes	Darden loamy fine sand, 1 to 8 percent slopes	11.2	0.4%
GyA	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	490.0	19.4%
HaC	Harleston fine sandy loam, 1 to 8 percent slopes	Harleston fine sandy loam, 1 to 8 percent slopes	173.7	6.9%
OfA	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded	275.5	10.9%
RwC	Rosalie-Warnock complex, 1 to 8 percent slopes	Rosalie-Warnock complex, 1 to 8 percent slopes	105.1	4.2%
ScC	Sacul-Sawyer complex, 1 to 8 percent slopes	Sacul-Sawyer complex, 1 to 8 percent slopes	904.6	35.9%
ScD	Sacul-Sawyer complex, 8 to 15 percent slopes	Sacul-Sawyer complex, 8 to 15 percent slopes	24.5	1.0%
SeC	Sawyer very fine sandy loam, 1 to 8 percent slopes	Sawyer very fine sandy loam, 1 to 8 percent slopes	267.9	10.6%
W	Water	Water	49.5	2.0%
WsC	Warnock-Smithdale complex, 1 to 7 percent slopes	Warnock-Smithdale complex, 1 to 7 percent slopes	181.3	7.2%
Totals for Area of Interest			**2,521.4**	**100.0%**

Rating Options—Map Unit Name

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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Appendix E

Inspection Form

ARR150000 Inspection Form – Stormwater Pollution Prevention Plan

Inspector Name: _____ Date of Inspection: _____

Inspector Title: _____

Date of Rainfall:_____ Duration of Rainfall: _____

Days Since Last Rain Event: _____ days Rainfall Since Last Rain Event: _____ inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

_____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on Areas and BMPs in Need of Maintenance

Area/BMP , Location on Site, and Description of Issue	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By
	☐ Yes ☐ No			
	☐ Yes ☐ No			
	☐ Yes ☐ No			
	☐ Yes ☐ No			
	☐ Yes ☐ No			

Changes required to the SWPPP: _____

_____

Reasons for changes: _____

_____

SWPPP changes completed (date): _____

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____ Date:_____

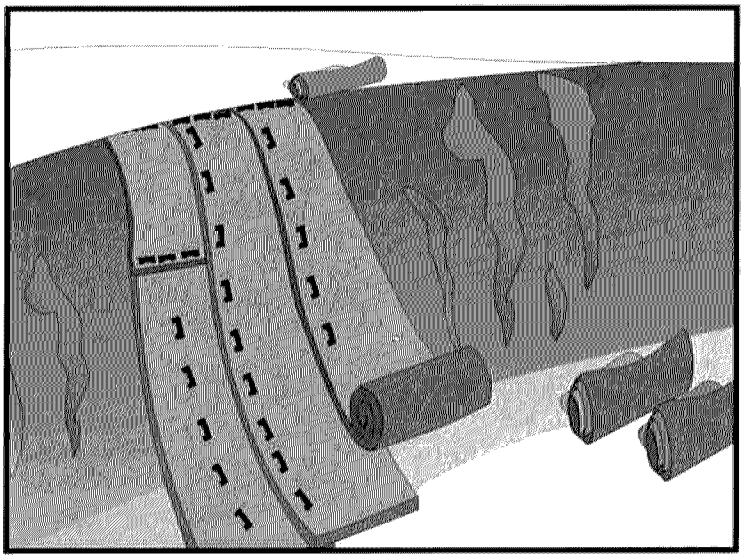
Title: _____

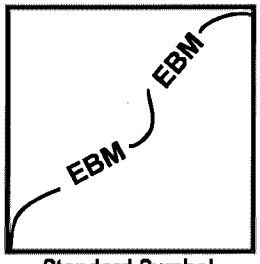
Appendix F

Best Management Practices (BMPs)

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

This Best Management Practice (BMP) involves the placement of geotextiles, mats, plastic covers, or erosion control blankets to stabilize disturbed soil areas and protect soils from erosion by wind or water. This is one of five temporary soil stabilization alternatives to consider.

Appropriate Applications

These measures are used when disturbed soils may be particularly difficult to stabilize, including the following situations:

- Steep slopes, generally steeper than 1:3 (V:H).
- Slopes where the erosion potential is high.
- Slopes and disturbed soils where mulch must be anchored.
- Disturbed areas where plants are slow to develop.
- Channels with flows exceeding 1.0 m/s (3.3 ft/s).
- Channels to be vegetated.
- Stockpiles.
- Slopes adjacent to water bodies of Environmentally Sensitive Areas (ESAs).

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

Limitations

- Blankets and mats are more expensive than other erosion control measures, due to labor and material costs. This usually limits their application to areas inaccessible to hydraulic equipment, or where other measures are not applicable, such as channels.
- Blankets and mats are generally not suitable for excessively rocky sites, or areas where the final vegetation will be mowed (since staples and netting can catch in mowers).
- Blankets and mats must be removed and disposed of prior to application of permanent soil stabilization measures.
- Plastic sheeting is easily vandalized, easily torn, photodegradable, and must be disposed of at a landfill.
- Plastic results in 100% runoff, which may cause serious erosion problems in the areas receiving the increased flow.
- The use of plastic shall be limited to covering stockpiles, or very small graded areas for short periods of time (such as through one imminent storm event), until alternative measures, such as seeding and mulching, may be installed.
- Geotextiles, mats, plastic covers, and erosion control covers have maximum flow rate limitations; consult the manufacturer for proper selection.

Standards and Specifications

Material Selection

There are many types of erosion control blankets and mats, and selection of the appropriate type shall be based on the specific type of application and site conditions. Selection(s) made by the Contractor must be approved by the Resident Engineer (RE); certification of compliance shall be in accordance with Standard Specifications Section 6-1.07.

Geotextiles

- Material shall be a woven polypropylene fabric with minimum thickness of 1.5 mm (0.06 inch), minimum width of 3.7 m (12 ft) and shall have minimum tensile strength of 0.67 kN (warp) 0.36 kN (fill) in conformance with the requirements in ASTM Designation: D 4632. The permittivity of the fabric shall be approximately 0.07 sec –1 in conformance with the requirements in ASTM Designation: D4491. The fabric shall have an ultraviolet (UV) stability of 70 percent in conformance with the requirements in ASTM designation: D4355. Geotextile blankets shall be secured in place with wire staples or sandbags and by keying into tops of slopes and edges to prevent infiltration of surface waters under Geotextile. Staples shall be made of 3.05-mm (0.12-inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.
- Geotextiles may be reused if, in the opinion of the RE, they are suitable for the use intended.

Plastic Covers

- Plastic sheeting shall have a minimum thickness of 6 mil, and shall be keyed in at the top of slope and firmly held in place with sandbags or other weights placed no more than 3 m (10 ft) apart. Seams are typically taped or weighted down their entire length, and there shall be at least a 300 mm to 600 mm (12 to 24 inches) overlap of all seams. Edges shall be embedded a minimum of 150 mm (6 inches) in soil.

- All sheeting shall be inspected periodically after installation and after significant rainstorms to check for erosion, undermining, and anchorage failure. Any failures shall be repaired immediately. If washout or breakages occurs, the material shall be re-installed after repairing the damage to the slope.

Erosion Control Blankets/Mats

- Biodegradable rolled erosion control products (RECPs) are typically composed of jute fibers, curled wood fibers, straw, coconut fiber, or a combination of these materials. For an RECP to be considered 100% biodegradable, the netting, sewing or adhesive system that holds the biodegradable mulch fibers together must also be biodegradable.

  - **Jute** is a natural fiber that is made into a yarn, which is loosely woven into a biodegradable mesh. It is designed to be used in conjunction with vegetation and has longevity of approximately one year. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Excelsior (curled wood fiber)** blanket material shall consist of machine produced mats of curled wood excelsior with 80 percent of the fiber 150 mm (6 inches) or longer. The excelsior blanket shall be of consistent thickness. The wood fiber shall be evenly distributed over the entire area of the blanket. The top surface of the blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be smolder resistant without the use of chemical additives and shall be non-toxic and non-injurious to plant and animal life. Excelsior blanket shall be furnished in rolled strips, a minimum of 1220 mm (48 inches) wide, and shall have an average weight of 0.5 kg/m^2 (12 lb/ft^2), ±10 percent, at the time of manufacture. Excelsior blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- **Straw blanket** shall be machine-produced mats of straw with a lightweight biodegradable netting top layer. The straw shall be attached to the netting with biodegradable thread or glue strips. The straw blanket shall be of consistent thickness. The straw shall be evenly distributed over the entire area of the blanket. Straw blanket shall be furnished in rolled strips a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27 kg/m2 (6.4 lb/ft2). Straw blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- **Wood fiber blanket** is composed of biodegradable fiber mulch with extruded plastic netting held together with adhesives. The material is designed to enhance revegetation. The material is furnished in rolled strips, which shall be secured to the ground with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Coconut fiber blanket** shall be machine-produced mats of 100% coconut fiber with biodegradable netting on the top and bottom. The coconut fiber shall be attached to the netting with biodegradable thread or glue strips. The coconut fiber blanket shall be of consistent thickness. The coconut fiber shall be evenly distributed over the entire area of the blanket. Coconut fiber blanket shall be furnished in rolled strips with a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27-kg/m2 (6.4 lb/ft2). Coconut fiber blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- **Coconut fiber mesh** is a thin permeable membrane made from coconut or corn fiber that is spun into a yarn and woven into a biodegradable mat. It is designed to be used in conjunction with vegetation and typically has longevity of several years. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Straw coconut fiber blanket** shall be machine-produced mats of 70% straw and 30% coconut fiber with a biodegradable netting top layer and a biodegradable bottom net. The straw and coconut fiber shall be attached to the netting with biodegradable thread or glue strips. The straw coconut fiber blanket shall be of consistent thickness. The straw and coconut fiber shall be evenly distributed over the entire area of the blanket. Straw coconut fiber blanket shall be furnished in rolled strips a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27 kg/m2 (6.4 lb/ft2). Straw coconut fiber blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12-inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- Non-biodegradable RECPs are typically composed of polypropylene, polyethylene, nylon or other synthetic fibers. In some cases, a combination of biodegradable and synthetic fibers is used to construct the RECP. Netting used to hold these fibers together is typically non-biodegradable as well.

  - **Plastic netting** is a lightweight biaxially-oriented netting designed for securing loose mulches like straw to soil surfaces to establish vegetation. The netting is photodegradable. The netting is supplied in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Plastic mesh** is an open-weave geotextile that is composed of an extruded synthetic fiber woven into a mesh with an opening size of less than 0.5 cm (0.2 inch). It is used with revegetation or may be used to secure loose fiber such as straw to the ground. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Synthetic fiber with netting** is a mat that is composed of durable synthetic fibers treated to resist chemicals and ultraviolet light. The mat is a dense, three-dimensional mesh of synthetic (typically polyolefin) fibers stitched between two polypropylene nets. The mats are designed to be revegetated and provide a permanent composite system of soil, roots, and geomatrix. The material is furnished in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Bonded synthetic fibers** consist of a three-dimensional geomatrix nylon (or other synthetic) matting. Typically it has more than 90% open area, which facilitates root growth. Its tough root-reinforcing system anchors vegetation and protects against hydraulic lift and shear forces created by high volume discharges. It can be installed over prepared soil, followed by seeding into the mat. Once vegetated, it becomes an invisible composite system of soil, roots, and geomatrix. The material is furnished in rolled strips that shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Combination synthetic and biodegradable RECPs** consist of biodegradable fibers, such as wood fiber or coconut fiber, with a heavy polypropylene net stitched to the top and a high-strength continuous-filament geomatrix or net stitched to the bottom. The material is designed to enhance revegetation. The material is furnished in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Site Preparation

- Proper site preparation is essential to ensure complete contact of the blanket or matting with the soil.
- Grade and shape the area of installation.
- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.
- Prepare seedbed by loosening 50 mm (2 in) to 75 mm (3 in) of topsoil.

Seeding

Seed the area before blanket installation for erosion control and revegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all check slots and other areas disturbed during installation must be re-seeded. Where soil filling is specified, seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Anchoring

- U-shaped wire staples, metal geotextile stake pins or triangular wooden stakes can be used to anchor mats and blankets to the ground surface.
- Staples shall be made of 3.05 mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.
- Metal stake pins shall be 5 mm (0.188 in) diameter steel with a 40 mm (1.5 in) steel washer at the head of the pin.
- Wire staples and metal stakes shall be driven flush to the soil surface.
- All anchors shall be 150 mm (6 in) to 450 mm (18 in) long and have sufficient ground penetration to resist pullout. Longer anchors may be required for loose soils.

Installation on Slopes

Installation shall be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 150 mm (6 in) deep by 150 mm (6 in) wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket downslope in the direction of water flow.

- Overlap the edges of adjacent parallel rolls 50 mm (2 in) to 75 mm (3 in) and staple every 1 m (3 ft).
- When blankets must be spliced, place blankets end over end (shingle style) with 150 mm (6 in) overlap. Staple through overlapped area, approximately 300 mm (12 in) apart.
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples shall be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (V:H) to 1:2 (V:H), require a minimum of 2 staples/m2 (2 staples/yd2). Moderate slopes, 1:2 (V:H) to 1:3 (V:H), require a minimum of 1½ staples/m2 (1 ½ staples/yd2), placing 1 staple/m (1 staple/yd) on centers. Gentle slopes require a minimum of 1 staple/m2 (1 staple/yd2).

Installation in Channels

Installation shall be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Dig initial anchor trench 300 mm (12 in) deep and 150 mm (6 in) wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 150 mm (6 in) deep and 150 mm (6 in) wide across the channel at 8 m to 10 m (25 ft to 30 ft) intervals along the channels.
- Cut longitudinal channel anchor slots 100 mm (4 in) deep and 100 mm (4 in) wide along each side of the installation to bury edges of matting, whenever possible extend matting 50 mm (2 in) to 75 mm (3 in) above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 300 mm (12 in) intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 75 mm (3 in).
- Secure these initial ends of mats with anchors at 300 mm (12 in) intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench. Unroll adjacent mats upstream in similar fashion, maintaining a 75 mm (3 in) overlap.

- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 300 mm (12 in) intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.
- Alternate method for non-critical installations: Place two rows of anchors on 150 mm (6 in) centers at 8 m (25 ft) to 10 m (30 ft) intervals in lieu of excavated check slots.
- Shingle-lap spliced ends by a minimum of 300 mm (12 in) apart on 300 mm (12 in) intervals.
- Place edges of outside mats in previously excavated longitudinal slots, anchor using prescribed staple pattern, backfill and compact soil.
- Anchor, fill and compact upstream end of mat in a 300 mm (12 in) by 150 mm (6 in) terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement)

- Always consult the manufacturer's recommendations for installation.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes or brooms for fine grading and touch up.
- Smooth out soil filling, just exposing top netting of mat.

Temporary Soil Stabilization Removal

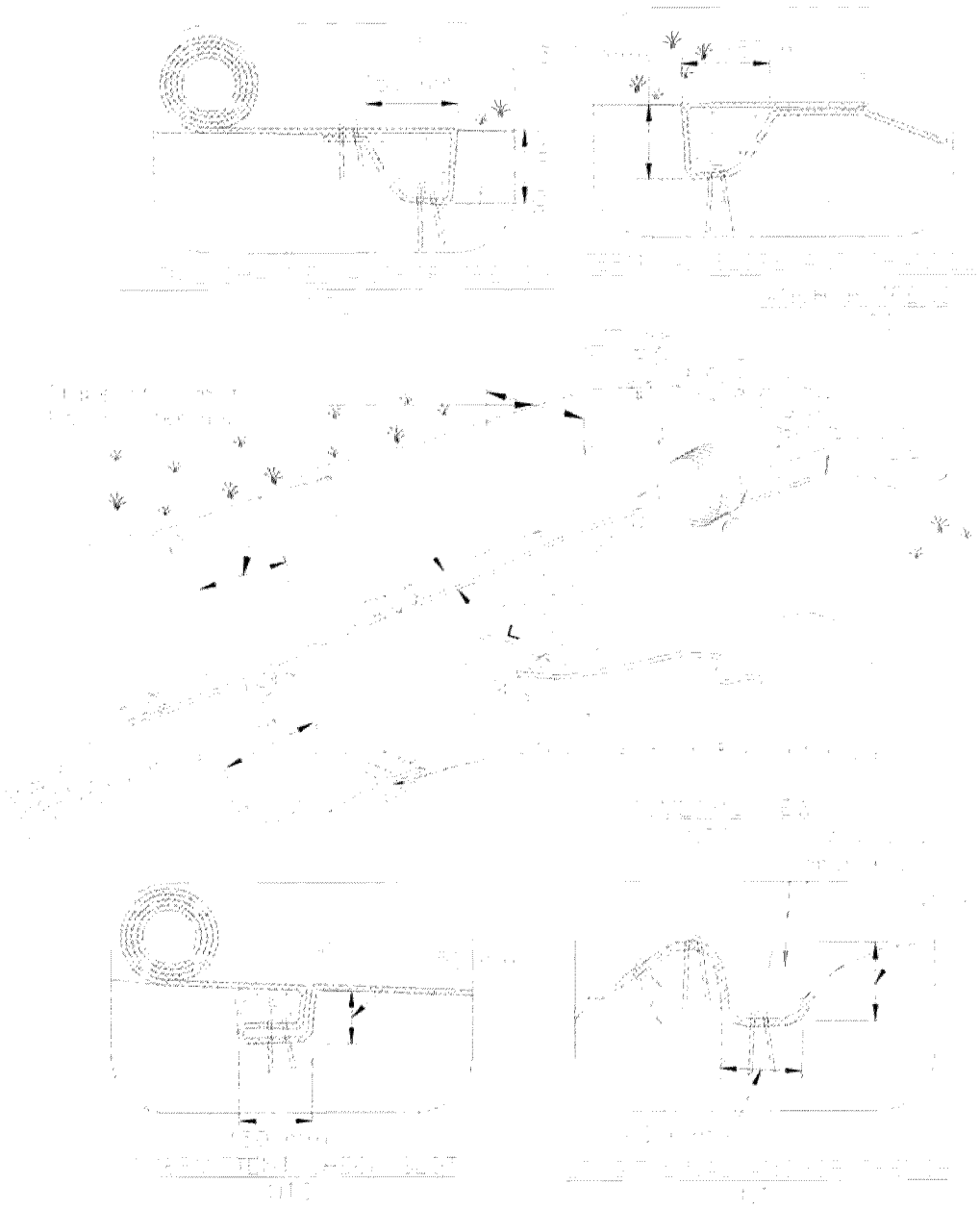
- When no longer required for the work, temporary soil stabilization shall become the property of the Contractor. Temporary soil stabilization removed from the site of the work shall be disposed of outside the highway right-of-way in conformance with the provisions in Standard Specifications Section 7-1.13. If approved by the RE, the contractor may leave the temporary soil stabilizer in place.

Maintenance and Inspection

Areas treated with temporary soil stabilization shall be inspected as specified in the special provisions. Areas treated with temporary soil stabilization shall be maintained to provide adequate erosion control. Temporary soil stabilization shall be reapplied or replaced on exposed soils when area becomes exposed or exhibits visible erosion.

- All blankets and mats shall be inspected periodically after installation.
- Installation shall be inspected after significant rain storms to check for erosion and undermining. Any failures shall be repaired immediately.
- If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.

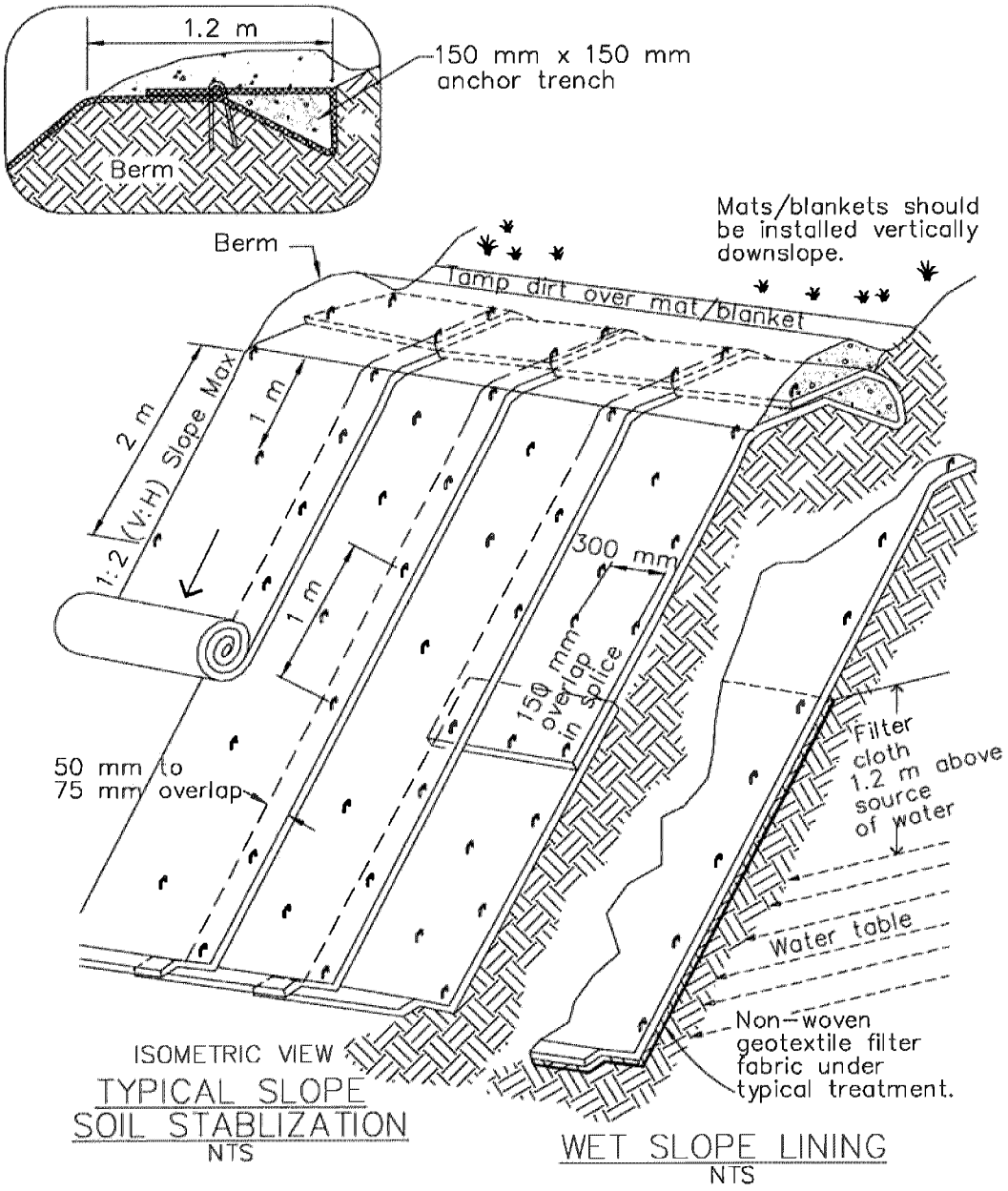
Typical Installation Detail



Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

Typical Installation Detail

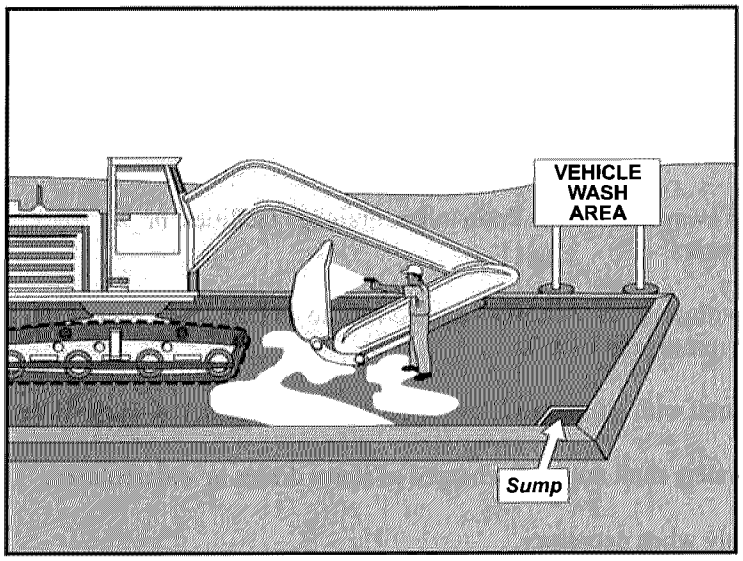


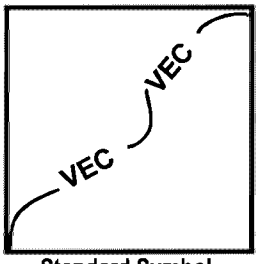
NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

Vehicle and Equipment Cleaning

NS-8





Standard Symbol

BMP Objectives

- o Soil Stabilization
- o Sediment Control
- o Tracking Control
- o Wind Erosion Control
- ● Non-Storm Water Management
- o Materials and Waste Management

Definition and Purpose

Vehicle and equipment cleaning procedures and practices are used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain system or to watercourses.

Appropriate Applications

These procedures are applied on all construction sites where vehicle and equipment cleaning is performed.

Limitations

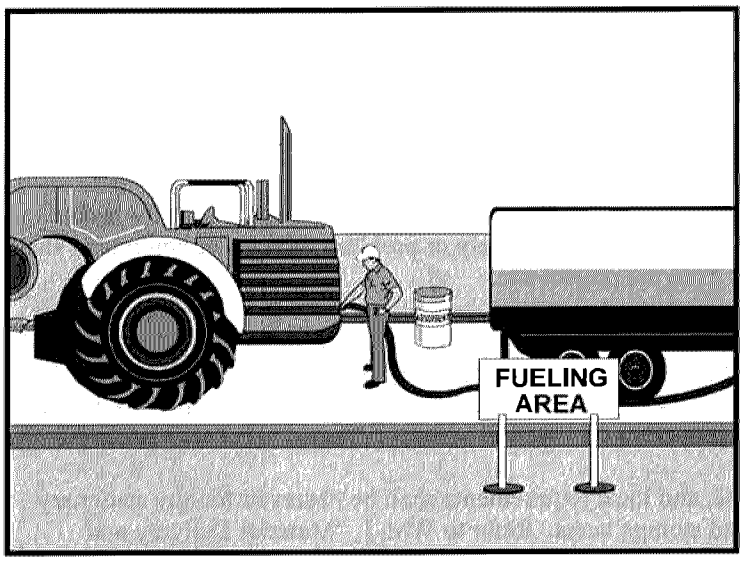
- None.

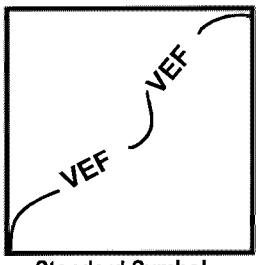
Standards and Specifications

- On-site vehicle and equipment washing is discouraged.
- Cleaning of vehicles and equipment with soap, solvents or steam shall not occur on the project site unless the Resident Engineer (RE) has been notified in advance and the resulting wastes are fully contained and disposed of outside the highway right-of-way in conformance with the provisions in the Standard Specifications Section 7-1.13. Resulting wastes and by-products shall not be discharged or buried within the highway right-of-way, and must be captured and recycled or disposed according to the requirements of WM-10, "Liquid Waste Management" or WM-6, "Hazardous Waste Management," depending on the waste characteristics. Minimize use of solvents. The use of diesel for vehicle and equipment cleaning is prohibited.
- Vehicle and equipment wash water shall be contained for percolation or evaporative drying away from storm drain inlets or watercourses and shall not be discharged within the highway right-of-way. Apply sediment control BMPs if applicable.
- All vehicles/equipment that regularly enter and leave the construction site must be cleaned off-site.
- When vehicle/equipment washing/cleaning must occur onsite, and the

Vehicle and Equipment Fueling

NS-9





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses.

Appropriate Applications

These procedures are applied on all construction sites where vehicle and equipment fueling takes place.

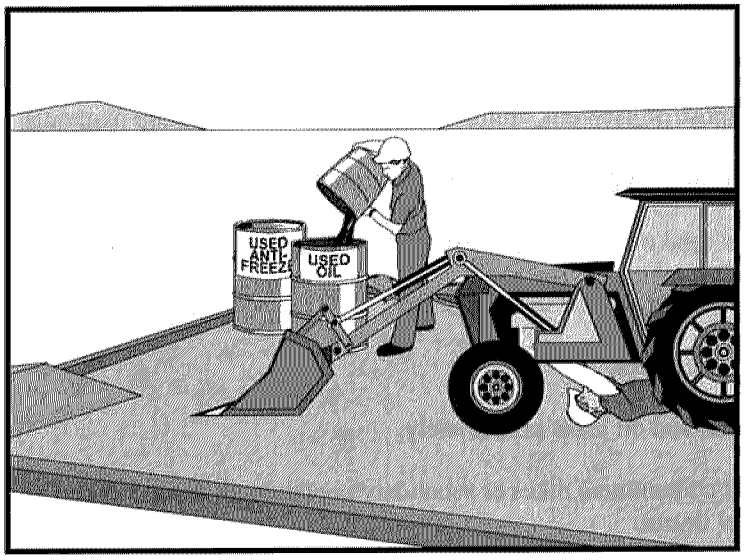
Limitations

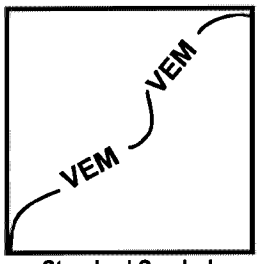
- Onsite vehicle and equipment fueling shall only be used where it's impractical to send vehicles and equipment off-site for fueling.

Standards and Specifications

- When fueling must occur onsite, the contractor shall select and designate an area to be used, subject to approval of the Resident Engineer (RE).
- Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and shall be disposed of properly after use.
- Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended.
- Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.

Vehicle and Equipment Maintenance NS-10





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of pollutants to the storm drain systems or to watercourses from vehicle and equipment maintenance procedures.

Appropriate Applications

These procedures are applied on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

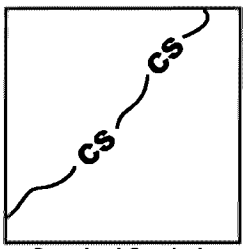
- None identified.

Standards and Specifications

- Drip pans or absorbent pads shall be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- All maintenance areas are required to have spill kits and/or use other spill protection devices.
- Dedicated maintenance areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses.
- Drip Pans or plastic sheeting shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than one hour.
- Absorbent spill clean-up materials shall be available in maintenance areas and shall be disposed of properly after use. Substances used to coat asphalt transport trucks and asphalt-spreading equipment shall be non-toxic.
- Use off-site maintenance facilities whenever practical.

Stockpile Management

WM-3



Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called "cold mix" asphalt) and pressure treated wood.

Appropriate Applications

Implemented in all projects that stockpile soil and other materials.

Limitations

- None identified

Standards and Specifications

- Protection of stockpiles is a year-round requirement.
- Locate stockpiles a minimum of 15 m (50 ft)away from concentrated flows of storm water, drainage courses, and inlets.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information see BMP WE-1, "Wind Erosion Control."
- Stockpiles of contaminated soil shall be managed in accordance with BMP WM-7, "Contaminated Soil Management."
- Bagged materials should be placed on pallets and under cover.

Protection of Non-Active Stockpiles

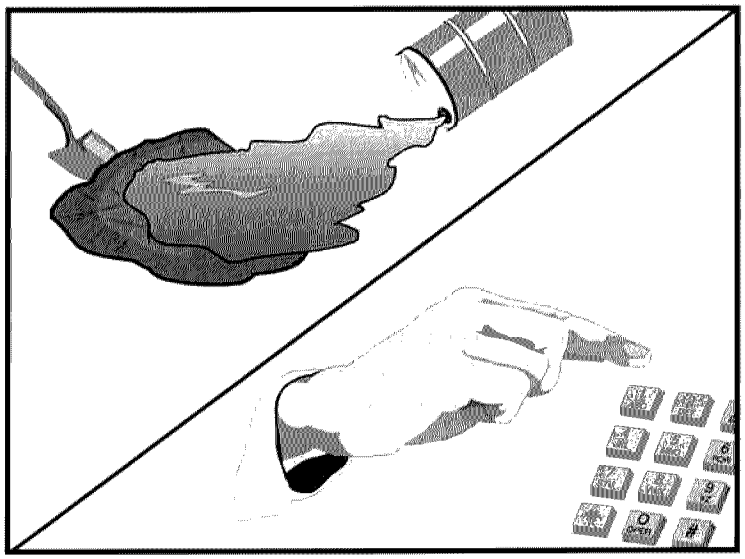
Non-active stockpiles of the identified materials shall be protected further as follows:

Maintenance and Inspections

- Repair and/or replace perimeter controls and covers as needed, or as directed by the RE, to keep them functioning properly. Sediment shall be removed when sediment accumulation reaches one-third (1/3) of the barrier height.

Spill Prevention and Control

WM-4



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.

Appropriate Application

This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime chemicals and/or hazardous substances are stored. Substances may include, but are not limited to:

- Soil stabilizers/binders.
- Dust Palliatives.
- Herbicides.
- Growth inhibitors.
- Fertilizers.
- Deicing/anti-icing chemicals.
- Fuels.
- Lubricants.
- Other petroleum distillates.

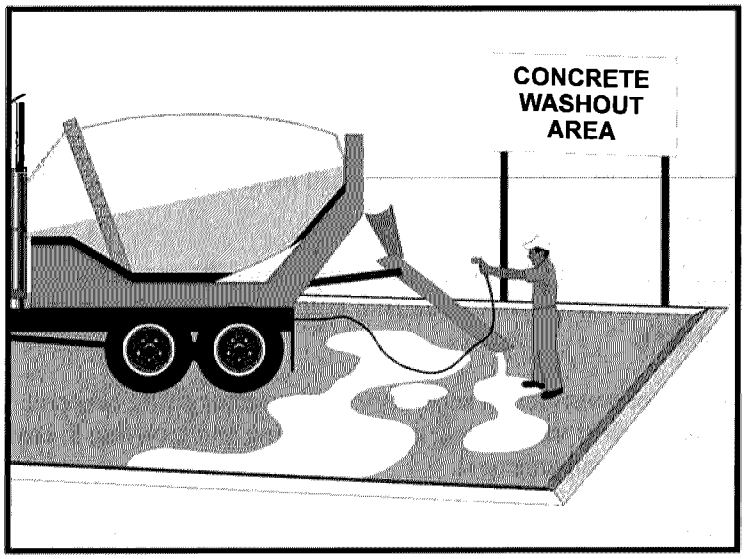
To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes shall be contained and cleaned up immediately.

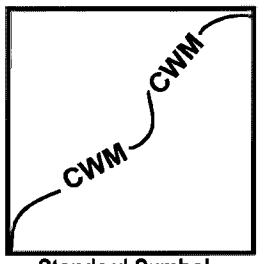
Cleanup and Storage Procedures

- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills rather than hosing down or burying the spill.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.
- Semi-Significant Spills
  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
  - Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Resident Engineer (RE).
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Concrete Waste Management

WM-8





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.

Appropriate Applications

- Concrete waste management procedures and practices are implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Where slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
- Where concrete trucks and other concrete-coated equipment are washed on site, when approved by the Resident Engineer (RE). See also NS-8, "Vehicle and Equipment Cleaning."
- Where mortar-mixing stations exist.

Limitations

- None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce concrete waste management procedures.

Concrete Slurry Wastes

- PCC and AC waste shall not be allowed to enter storm drains or watercourses.

- Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities shall have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Perform washout of concrete mixer trucks in designated areas only.
- Wash concrete only from mixer truck chutes into approved concrete washout facility. Washout may be collected in an impermeable bag for disposal.
- Pump excess concrete in concrete pump bin back into concrete mixer truck.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of per BMP WM-5, "Solid Waste Management", and in conformance with the provisions in Standard Specifications Section 15-3.02, "Removal Methods."

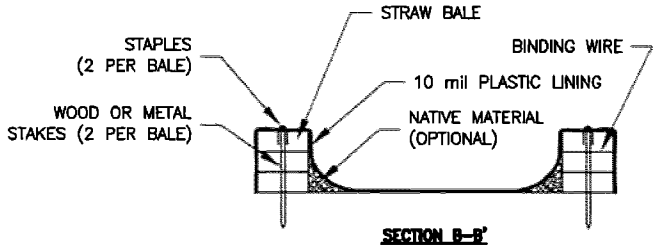
Temporary Concrete Washout Facility Type "Above Grade"

- Temporary concrete washout facility Type "Above Grade" shall be constructed as shown on Page 5 or 6, with a recommended minimum length and minimum width of 3 m (10 ft), but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval from the RE.
- Straw bales, wood stakes, and sandbag materials shall conform to the provisions in BMP SC-9, "Straw Bale Barrier."
- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material.
- Portable delineators shall conform to the provisions in Standard Specifications Section 12-3.04, "Portable Delineators.". The delineator bases shall be cemented to the pavement in the same manner as provided for cementing pavement markers to pavement in Standard Specifications Section 85-1.06, "Placement." Portable delineators shall be applied only to a clean, dry surface.

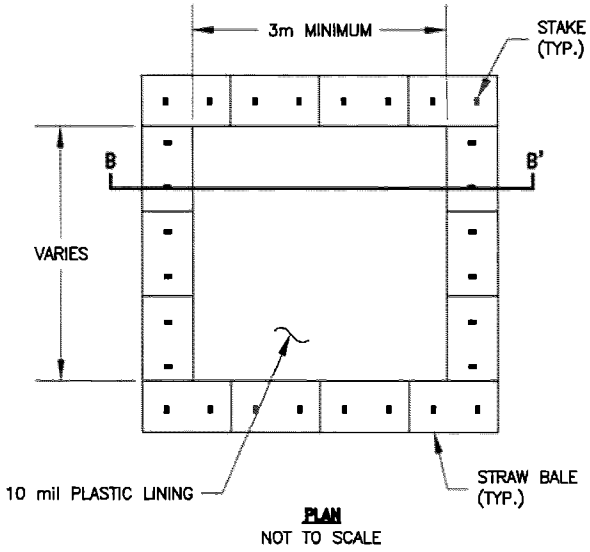
- Temporary concrete washout facilities shall be maintained to provide adequate holding capacity with a minimum freeboard of 100 mm (4 inches) for above grade facilities and 300 mm (12 inches) for below grade facilities. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 15-3.02, "Removal Methods."

- Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

- Temporary concrete washout facilities shall be inspected for damage (i.e. tears in PVC liner, missing sand bags, etc.). Damaged facilities shall be repaired.

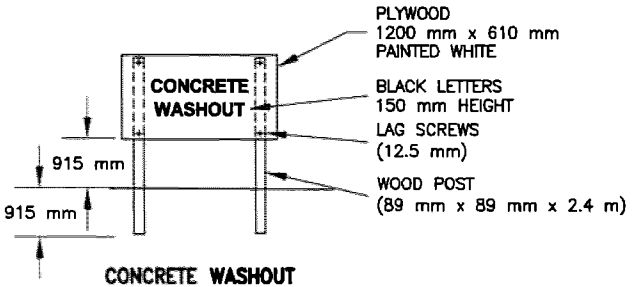


SECTION B–B'
NOT TO SCALE

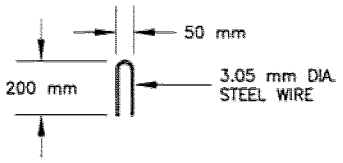


PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH STRAW BALES



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



STAPLE DETAIL

NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4–15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITIY.

CALTRANS/FIG4–14.DWG SAC 8–14–02

Appendix G

Training Records

El Dorado Chemical Company
SWPPP Training Record

Use this form to document any additional training that is performed in relation to the SWPPP.

Date of Training:	Trainer's Name:	Trainee's Name(s):	Topics Covered:

El Dorado Chemical Company
SWPPP Training Record

Date of Training:	Trainer's Name:	Trainee's Name(s):	Topics Covered:

El Dorado Chemical Company
SWPPP Training Record

Date of Training:	Trainer's Name:	Trainee's Name(s):	Topics Covered:

Appendix H

Contractor/Inspector Identification Form

El Dorado Chemical Company
Construction Storm Water Pollution Prevention Plan
Contractor/Inspector Identification Form

All contractors and inspectors must be identified in this plan. If additional contractors or inspectors are added to the project, then the list of contacts should be updated accordingly.

Contractors

Contractor Printed Name: Mike Boswell SAIC Contractor Signature: [signature]

Contractor Contact Number: 405-210-9253 Responsible for: Ammonia Plant Const.

Contractor Printed Name: Gene Brown - Rufus Shipp Miam Const Contractor Signature: [signature]

Contractor Contact Number: 870-814-9405 Responsible for: New construction Lay Down

Contractor Printed Name:_____ Contractor Signature:_____

Contractor Contact Number:_____ Responsible for:_____

Contractor Printed Name:_____ Contractor Signature:_____

Contractor Contact Number:_____ Responsible for:_____

Inspectors

Inspector Printed Name:_____ Inspector Signature:_____

Contractor Contact Number:_____

Inspector Printed Name:_____ Inspector Signature:_____

Contractor Contact Number:_____

Inspector Printed Name:_____ Inspector Signature:_____

Contractor Contact Number:_____

Appendix I

Certification Statements

Construction Storm Water Pollution Prevention Plan
Certification Statement

Permittee or Authorized Representative Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name Gregory Withrow Signature Gregory Withrow

Title General Manager Date 8/12/13

Greg