

This is a revision to the Stormwater Detention Report for Wyndgate. Per Change Order WYG-014, a small portion of the As-Built Lake aka Detention Pond #1 is to be filled. The following is a summary of the effects of the fill.

The following table shows peak discharge from Wyndgate in the creek where it leaves the property on the east property line.

Storm Frequency	PEAK DISCHARGE (CFS)			
	Before Development	Approved Design	As-Built	WYG-014
15 Year	1,193	1,146	1,150	1,151
25 Year	1,403	1,315	1,319	1,320
100 Year	1,976	1,756	1,762	1,763

In each of the storms analyzed, the peak discharge from the development is less than the peak runoff before development. A summary report of the computer model is attached. The following table summarizes the effect of Change Order WYG-014 on the water surface elevation of Detention Pond #1.

As-Built Lake
Detention Pond #1

Storm Frequency	MAXIMUM WATER SURFACE ELEVATION			
	Approved Design	Revised 11/04	As-Built	WYG-014
15 Year	603.61	603.89	603.45	603.47
25 Year	604.08	604.37	603.93	603.95
100 Year	605.30	605.59	605.17	605.20

Please note that these elevations are still below the original approved design.

CITY OF O'FALLON
COMMUNITY DEVELOPMENT DEPARTMENT
ACCEPTED FOR CONSTRUCTION
 BY: [Signature] DATE: 6/8/07
PROFESSIONAL ENGINEER'S SEAL
INDICATES RESPONSIBILITY FOR DESIGN



INDICATES RESPONSIBILITY FOR DESIGN
PROFESSIONAL ENGINEER'S SEAL
DATE: _____
BY: _____
ACCEPTED FOR CONSTRUCTION
COMMUNITY DEVELOPMENT DEPARTMENT
CITY OF FALLON

MASTER DESIGN STORM SUMMARY

Network Storm Collection: 2 Year

Return Event	Total Depth in	Rainfall Type	RNF ID
15	5.2000	Synthetic Curve	TypeII 24hr
25	5.7000	Synthetic Curve	TypeII 24hr
100	7.0000	Synthetic Curve	TypeII 24hr

ICPM CALCULATION TOLERANCES

 Target Convergence= .000 cfs +/-
 Max. Iterations = 35 loops
 ICPM Time Step = .0500 hrs
 Output Time Step = .0500 hrs
 ICPM Ending Time = 35.0000 hrs

MASTER NETWORK SUMMARY
 SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
 (Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN2	AREA	15	273261		12.1000	75.00		
BASIN2	AREA	25	312030		12.1000	85.53		
BASIN2	AREA	100	415166		12.1000	113.14		
BASIN2	IN POND	15	273261		12.1000	75.00		
BASIN2	IN POND	25	312030		12.1000	85.53		
BASIN2	IN POND	100	415166		12.1000	113.14		

Name.... Watershed

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ICPM CALCULATION TOLERANCES

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Target Convergence=    .000 cfs +/-
Max. Iterations   =     35 loops
ICPM Time Step    =     .0500 hrs
Output Time Step  =     .0500 hrs
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MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN2	OUT POND	15	273261		12.3500	36.22	579.73	52419
BASIN2	OUT POND	25	312030		12.4000	38.64	580.52	64776
BASIN2	OUT POND	100	415166		12.3000	74.18	581.77	86573
BASIN3A	AREA	15	736750		12.1500	185.97		
BASIN3A	AREA	25	856233		12.1500	216.84		
BASIN3A	AREA	100	1179491		12.1500	299.42		
BASIN3A	POND	15	736751		12.1500	185.97		
BASIN3A	POND	25	856233		12.1500	216.84		
BASIN3A	POND	100	1179491		12.1500	299.42		
BASIN3A	OUT POND	15	736788		12.4500	79.47	571.42	159214
BASIN3A	OUT POND	25	856276		12.4000	89.70	572.13	196899
BASIN3A	OUT POND	100	1179576		12.4500	110.98	573.68	305395
BASIN3B	POND	15	747895		12.4000	80.46		
BASIN3B	POND	25	869331		12.4000	90.87		
BASIN3B	POND	100	1197962		12.4000	112.38		
BASIN3B	OUT POND	15	747917		12.6000	77.37	568.16	29667
BASIN3B	OUT POND	25	869342		12.6500	86.46	568.52	34199
BASIN3B	OUT POND	100	1197985		12.6500	109.60	569.20	42709
BASIN3B	AREA	15	11107		12.0500	3.44		
BASIN3B	AREA	25	13055		12.0500	4.07		
BASIN3B	AREA	100	18387		12.0500	5.79		

Name.... Watershed

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Output Time Step  =    .0500 hrs
ICPM Ending Time  =   35.0000 hrs
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MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN4	AREA	15	90257		12.1500	23.54		
BASIN4	AREA	25	105180		12.1500	27.51		
BASIN4	AREA	100	145662		12.1500	38.16		
BASIN4	IN POND	15	90257		12.1500	23.54		
BASIN4	IN POND	25	105180		12.1500	27.51		
BASIN4	IN POND	100	145662		12.1500	38.16		
BASIN4	OUT POND	15	90257		12.4500	9.45	583.92	20718
BASIN4	OUT POND	25	105179		12.5000	10.03	584.50	26418
BASIN4	OUT POND	100	145662		12.5500	11.52	585.84	42791
BASIN5	AREA	15	158941		12.1000	47.49		
BASIN5	AREA	25	186272		12.1000	55.82		
BASIN5	AREA	100	260841		12.1000	78.24		
BASIN5	IN POND	15	158941		12.1000	47.49		
BASIN5	IN POND	25	186272		12.1000	55.82		
BASIN5	IN POND	100	260841		12.1000	78.24		
BASIN5	OUT POND	15	158924		12.7000	7.68	557.82	69784
BASIN5	OUT POND	25	186254		12.4000	18.34	558.23	75017
BASIN5	OUT POND	100	260823		12.2500	50.84	558.95	84596
BYPASS1	AREA	15	898134		12.1500	215.37		
BYPASS1	AREA	25	1005090		12.1500	239.77		
BYPASS1	AREA	100	1285189		12.1500	302.90		

Name.... Watershed

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MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BYPASS2	AREA	15	1339369		12.1500	345.44		
BYPASS2	AREA	25	1540566		12.1500	397.19		
BYPASS2	AREA	100	2079438		12.1500	533.90		
BYPASS3	AREA	15	440781		12.1500	106.51		
BYPASS3	AREA	25	528347		12.1500	129.96		
BYPASS3	AREA	100	772769		12.1500	194.95		
J1	JCT	15	6942343		12.6000	857.97		
J1	JCT	25	8025762		12.6000	997.04		
J1	JCT	100	10941710		12.6000	1368.25		
J2	JCT	15	1883217		12.6000	134.53		
J2	JCT	25	2110365		12.6500	142.52		
J2	JCT	100	2705805		12.7000	161.22		
J3	JCT	15	8825543		12.7000	992.30		
J3	JCT	25	10136100		12.6500	1138.85		
J3	JCT	100	13647480		12.6500	1527.32		
J4	JCT	15	9996874		12.7500	1055.57		
J4	JCT	25	11453160		12.7500	1209.34		
J4	JCT	100	15347780		12.7000	1613.74		
J5	JCT	15	10744680		12.8500	1110.54		
J5	JCT	25	12322400		12.8500	1272.36		
J5	JCT	100	16545650		12.8000	1697.13		

Name.... Watershed

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MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
J6	JCT	15	10834910		12.9000	1114.17		
J6	JCT	25	12427550		12.9000	1276.46		
J6	JCT	100	16691270		12.8500	1701.66		
OFFSITE1	AREA	15	436060		12.1000	122.22		
OFFSITE1	AREA	25	487984		12.1000	135.95		
OFFSITE1	AREA	100	623963		12.1000	171.48		
OFFSITE2	AREA	15	395369		12.2000	85.65		
OFFSITE2	AREA	25	445336		12.2000	96.12		
OFFSITE2	AREA	100	576773		12.2000	123.29		
ONSITE1	AREA	15	1051818		12.1500	245.42		
ONSITE1	AREA	25	1177074		12.1500	273.32		
ONSITE1	AREA	100	1505099		12.1500	345.52		
*OUT1	JCT	15	12174210		12.9500	1150.54		
*OUT1	JCT	25	13968050		12.9500	1319.63		
*OUT1	JCT	100	18770700		12.9000	1762.59		
*OUT2	JCT	15	599704		12.1500	112.69		
*OUT2	JCT	25	714601		12.1500	136.55		
*OUT2	JCT	100	1033591		12.2000	236.76		
POND1	IN POND	15	1883248		12.1500	440.41		
POND1	IN POND	25	2110394		12.1500	491.03		
POND1	IN POND	100	2705836		12.1500	622.12		

Name.... Watershed

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MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
POND1	OUT POND	15	1883217		12.6000	134.53	603.47	680636
POND1	OUT POND	25	2110365		12.6500	142.52	603.95	774674
POND1	OUT POND	100	2705805		12.7000	161.22	605.20	1025474
SUBAREA1	AREA	15	6942343		12.6000	857.97		
SUBAREA1	AREA	25	8025762		12.6000	997.04		
SUBAREA1	AREA	100	10941700		12.6000	1368.25		

MAR 26 2004

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Bob Holden, Governor • Stephen M. Mahfood, Director

www.dnr.state.mo.us

March 24, 2004

Kenneth Davis, Vice President
Summit Pointe, L.C.
239 Fox Hill Road
St. Charles, MO 63301

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, we have issued and are enclosing a General State Operating Permit to discharge from Wyndgate.

Monitoring reports that may be required by the special conditions must be submitted on a periodic basis. Copies of the necessary report forms, if required, are enclosed and should be mailed to the St. Louis Regional Office. Please contact this office for additional forms.

This General Permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits issued for this facility under the same permit number. In all future correspondence regarding this facility, please refer to your general permit number as shown on page one of your permit.

If you have questions concerning this permit, please do not hesitate to call the St. Louis Regional Office at (314) 416-2960, 7545 S. Lindbergh Blvd., Suite 210, St. Louis, Missouri 63125.

Sincerely,

ST. LOUIS REGIONAL OFFICE

Mohamad Alhalabi, P.E.
Regional Director THS

MA:THH:ka

THH

Enclosure

c: Water Pollution Branch



Integrity and excellence in everything we do



COPY

LABORATORY REPORT

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STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



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MISSOURI STATE OPERATING PERMIT

GENERAL PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. : **MO-R109C11**
Owner: Summit Pointe, L.C.
Owner's Address: 239 Fox Hill Road
St. Charles, MO 63301
Operating Authority: Same
Operating Authority Address: Same
Facility Name: Wyndgate
Facility Address: S. side of Hwy N, 3000' E. of Duello Road
Wentzville, MO
Legal Description: Part of sections 16 & 17, T46N, R2E
St. Charles County
Receiving Stream: Dardenne Creek (C)
First Class. & ID#: Dardenne Creek (C) #0222
USGS & Sub Water ID#: 07110009-030-001

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

SIC# 1521

All Outfalls

Construction or land disturbance activity (e.g., clearing, grubbing, excavating, grading, and other activity that results in the destruction of the root zone). Also applies to land disturbance activities near valuable resource waters.

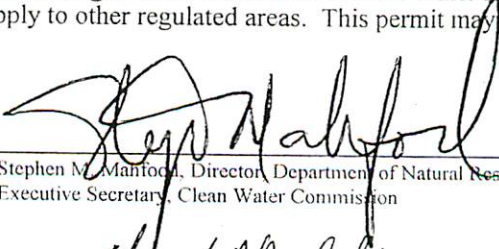
This permit authorizes only wastewater, including storm waters, discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

March 8, 2002

Effective Date

March 24, 2004

Issue Date *TMS*


Stephen M. Mahford, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

March 7, 2007

Expiration Date


Director, St. Louis Regional Office

APPLICABILITY

1. This general permit authorizes the discharge of storm water and certain non-storm water discharges from land disturbance sites that disturb a cumulative total of one (1) or more acres over the life of the project or which is part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. This general permit also authorizes the discharge of storm water and certain non-storm water discharges from smaller projects where the department has exercised its discretion to require a permit [10 CSR 20-6.200 (1)(B)].

A Missouri State Operating Permit that specifically identifies the project must be issued before any site vegetation is removed or the site disturbed.

Any site owner/operator subject to these requirements for storm water discharges and who disturbs land prior to permit issuance from MDNR is in violation of both State and Federal laws.

2. This permit authorizes non-storm water discharges from the following activities provided that these discharges are addressed in the permittee's specific Storm Water Pollution Prevention Plan (SWPPP) required by this general permit:
 - a. De-watering activities if there are no contaminants other than sediment present in the discharge,
 - b. Flushing water hydrants and potable water lines,
 - c. Water only (i.e., without detergents or additives) rinsing of streets and buildings, and,
 - d. Site watering to establish vegetation.
3. This general permit does not authorize the placement of fill materials in flood plains, the obstruction of stream flow, directing storm waters across private property not owned or operated by the permittee, or changing the channel of a defined drainage course. This general permit is intended to address only the quality of the storm water runoff and minimize off-site migration of sediments and other water contaminants.
4. This general permit does not authorize any discharge to waters of the state of sewage, wastewaters, or pollutants such as:
 - a. Hazardous substances or petroleum products from an on-site spill or improper handling and disposal practices,
 - b. Wash and/or rinse waters from concrete mixing equipment including ready mix concrete trucks. Such pollutants can and should be adequately treated and addressed in the Storm Water Pollution Prevention Plan, but they cannot be discharged to waters of the state,
 - c. Wastewater generated from air pollution control equipment or the containment of scrubber water in lined ponds, or
 - d. Domestic wastewaters, including gray waters.
5. MDNR reserves the right to deny coverage under this general permit to applicants for storm water discharges from land disturbance activities at sites that have contaminated soils that will be disturbed by the land disturbance activity or where such materials are brought to the site to use as fill or borrow. Such activities are normally covered by a site specific permit.
6. If at any time the Missouri Department of Natural Resources determines that the quality of waters of the state may be better protected by requiring the owner/operator of the permitted site to apply for a site specific permit, the department may require any person to obtain a site specific operating permit [10 CSR 20-6.010 (13) and 10 CSR 20-6.200(5)].

The department may require the permittee to apply for and obtain a site specific or different general permit if:

- a. The permittee is not in compliance with the conditions of this general permit;
- b. The discharge no longer qualifies for this general permit due to changed site conditions and regulations; or
- c. Information becomes available that indicates water quality standards have been or may be violated.

The permittee will be notified in writing of the need to apply for a site specific permit or a different general permit. When a site specific permit or different general permit is issued to the authorized permittee, the applicability of this general permit to the permittee is automatically terminated upon the effective date of the site specific or different general permit, whichever the case may be. The permittee shall submit the appropriate forms to the department to terminate the permit that has been replaced.

APPLICABILITY (continued)

7. Any owner/operator authorized by a general permit may request to be excluded from the coverage of the general permit and apply for a site specific permit [10 CSR 20-6.010 (13) and 10 CSR 20-6.200(5)].
8. This permit is not transferable to other owners or operators; unless all of the conditions listed in the "Transfer of Ownership" section are met.

APPLICABILITY TO VALUABLE RESOURCE WATERS

1. Storm water discharges to streams or stream segments defined as Valuable Resource Waters must be identified under the following conditions:
 - a. Storm water discharges within 1000 feet of:
 - i. Streams identified as a losing stream,
 - ii. Streams or lakes listed as an outstanding national or state resource water,
 - iii. Reservoirs or lakes used for public drinking water supplies (class L1), or
 - iv. Streams, lakes or reservoirs identified as critical habitat for endangered species.
 - b. Storm water discharges:
 - i. Within 100 feet of a permanent stream (class P) or major reservoir (class L2), or
 - ii. Within two stream miles upstream of biocriteria reference locations.
 - c. Storm water discharges where:
 - i. Any of the disturbed area is defined as a wetland (Class W), or
 - ii. The storm water discharges to a sinkhole or other direct conduit to groundwater.
2. This permit applies to discharges to Valuable Resource Waters provided that the particular sections that are identified as pertaining to these waters are adhered to.
3. Streams and stream segments that meet these criterion are identified and/ or defined in 10 CSR 20, Chapter 7 (Water Quality).

EXEMPTIONS FROM PERMIT REQUIREMENTS

1. Facilities that discharge all storm water runoff directly to a combined sewer system are exempt from storm water permit requirements.
2. Linear, strip or ribbon construction, or maintenance operations as identified in 10 CSR 20-6.200 (1)(B), where water quality standards are not exceeded.
3. Sites that disturb less than one acre of total land area that are not part of a common plan or sale and that do not cause any violations of water quality standards and are not otherwise designated by the department as requiring a permit.
4. Agricultural storm water discharges and irrigation return flows. For purposes of this permit, land disturbance activities from Animal Feeding Operations (AFO) are not considered an agricultural activity and therefore not exempted.

REQUIREMENTS AND GUIDELINES

Note: These requirements do not supersede nor remove liability for compliance with county and other local ordinances.

1. The discharge of storm water from these facilities shall not cause a violation of the state water quality standards, 10 CSR 20-7.031, which states, in part, that no water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - a. Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - b. Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - c. Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - d. Waters shall be free from substances or conditions in sufficient amounts to have a harmful effect on human, animal or aquatic life.
 - e. There shall be no significant human health hazard from incidental contact with the water;
 - f. There shall be no acute toxicity to livestock or wildlife watering;
 - g. Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - h. Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles, or equipment and solid waste as defined in Missouri's Solid Waste Law, Section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to Section 260.200-260.247.
2. All paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) shall be stored so that these materials are not exposed to storm water. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spills of these pollutants from entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
3. Collection facilities shall be provided on-site, and arrangement made for proper disposal of waste products, including but not limited to, petroleum waste products and solvents.
4. Good housekeeping practices shall be maintained on the site to keep solid waste from entry into waters of the state.
5. All fueling facilities present on the site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures.
6. An individual shall be designated by the permittee as responsible for environmental matters. Staff of the permitted facility shall inspect any structures that function to prevent pollution of storm water or to remove pollutants from storm water and of the facility in general to ensure that any Best Management Practices are continually implemented and effective.

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REQUIREMENTS AND GUIDELINES (continued)

7. The primary requirement of this permit is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that
 - a. Incorporates required practices identified below,
 - b. Incorporates erosion control practices specific to site conditions, and
 - c. Provides for maintenance and adherence to the plan.

For new applicants, before removing any site vegetation, disturbing earth, or submitting an application, the permittee shall develop a SWPPP that is specific to the land disturbance activities at the site. This plan must be developed before a permit can be issued and made available as specified under RECORDS. However, the plan should not be submitted to the department unless specifically requested.

The permittee shall fully implement the provisions of the SWPPP required under this part as a condition of this general permit throughout the term of the land disturbance project.

The purpose of the SWPPP is to ensure the design, implementation, management, and maintenance of A Best Management Practices (BMPs) in order to reduce the amount of sediment and other pollutants in storm water discharges associated with the land disturbance activities; comply with the Missouri Water Quality Standards; and ensure compliance with the terms and conditions of this general permit.

The permittee shall select, install, use, operate, and maintain the BMPs in accordance with the concepts and methods described in the following documents:

- a. **Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices**, (Document number EPA 832-R-92-005) published by the United States Environmental Protection Agency (USEPA) in 1992. This manual is available at The USEPA internet site: <http://cfpubl.epa.gov/npdes/pubs.cfm?program id=0> (searching under **Publications/Policy and Guidance Documents**);
- b. **Protecting Water Quality: A field guide to erosion, sediment and storm water best management practices for development sites in Missouri**, published by the Missouri Department of Natural Resources in November 1995.

The permittee is not limited to the use of these guidance manuals. Other commonly accepted publications may be used for guidance and must be referenced in the SWPPP if used. In addition, the permittee is not limited to the use of BMPs identified in these manuals. However, any alternative BMPs should be justified by site conditions and described in the SWPPP.

8. SWPPP Requirements: The following information and practices shall be provided for in the SWPPP.
 - a. **Site Description.** In order to identify the site, the SWPPP shall include the facility and outfall information provided in the Application Form. The SWPPP shall have sufficient information to be of practical use to contractors and site construction workers to guide the installation and maintenance of BMPs.
 - b. **Drainage areas:** The following guidelines are for protection of drainage areas and shall be addressed in the SWPPP.
 - i. Clearing and grubbing within 50 feet of a defined drainage course should be avoided. If the disturbed area is near a Valuable Resource Water as defined under 'Applicability to Valuable Resource Waters', clearing and grubbing within 50 feet of a defined drainage course must be avoided to protect water quality functions unless replacement vegetation is sufficient to protect water quality and is specified in the SWPPP.
 - ii. Where changes to defined drainage courses occur as part of the project, clearing and grubbing within 50 feet of the defined drainage course should be delayed until all materials and equipment necessary to protect and complete the drainage change are on site.

REQUIREMENTS AND GUIDELINES (continued)

8. SWPPP Requirements (continued)

COPY

b. Drainage areas (continued)

- iii. Changes to defined drainage courses shall be completed as quickly as possible once the work has been initiated. The area impacted by the land disturbance of the drainage course change is to be revegetated or protected from erosion as soon as possible. Areas within 50 feet of defined drainage ways should be recontoured as needed and revegetated, seeded, or otherwise protected within five (5) working days after grading has ceased.
- iv. Work in defined drainages or water courses and their associated wetlands may require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act.

- c. Description of Best Management Practices: The SWPPP shall include a description of the BMPs that will be used at the site. The SWPPP shall provide the following general information for each BMP which will be used one or more times at the site:
 - i. Physical description of the BMP,
 - ii. Site and physical conditions that must be met for effective use of the BMP,
 - iii. BMP installation/construction procedures, including typical drawings, and
 - iv. Operation and maintenance procedures for the BMP.

The SWPPP shall provide the following information for each specific instance where a BMP is to be installed:

- i. Whether the BMP is temporary or permanent,
 - ii. Where, in relation to other site features, the BMP is to be located,
 - iii. When the BMP will be installed in relation to each phase of the land disturbance procedures to complete the project, and
 - iv. What site conditions must be met before removal of the BMP if the BMP is not a permanent BMP.
- d. Disturbed Areas: Slopes for disturbed areas must be defined in the SWPPP. Where soil disturbing activities cease in an area for more than 14 days, the disturbed areas shall be protected from erosion by stabilizing the area with mulch or other similarly effective erosion control BMPs. If the slope of the area is greater than 3:1 or if the slope is greater than 3% and greater than 150 feet in length, then the disturbed areas shall be protected from erosion by stabilizing the area with mulch or other similarly effective erosion control BMPs if activities cease for more than seven days. These requirements do not apply to the interior slopes of a sedimentation basin or the areas that clearly drain thereto.
 - e. Installation: The permittee shall ensure the BMPs are properly installed at the locations and relative times specified in the SWPPP. Peripheral or border BMPs to control runoff from disturbed areas shall be installed or marked for preservation before general site clearing is started. Storm water discharges from disturbed areas which leave the site shall pass through an appropriate impediment to sediment movement, such as a sedimentation basin, sediment traps, silt fences, etc. prior to leaving the land disturbance site. Bench marks shall be referenced for proper installation and operation and maintenance of drainage course changes.
 - f. Temporary and Permanent Non-Structural BMPs: The SWPPP shall require existing vegetation to be preserved where practical. The time period for disturbed areas to be without vegetative cover is to be minimized to the extent practical.

Examples of non-structural BMPs which the permittee should consider specifying in the SWPPP include: preservation of trees and mature vegetation, protection of existing vegetation for use as buffer strips (especially along drainage courses), mulching, sodding, temporary seeding, final seeding, geotextiles, stabilization of disturbed areas, preserving existing stream channels as overflow areas when channel straightening or shortening is allowed, soil stabilizing emulsions and tackifiers, mulch tackifiers, stabilized site entrances/exits, and other appropriate BMPs.

REQUIREMENTS AND GUIDELINES (continued)

- g. Temporary and Permanent Structural BMPs: Examples of structural BMPs that the permittee should consider specifying in the SWPPP include: diverting flows from undisturbed areas away from disturbed areas, silt (filter fabric or straw bale) fences, earthen diversion dikes, drainage swales, sediment traps, rock check dams, subsurface drains (to gather or transport water for surface discharge elsewhere), pipe slope drains (to carry concentrated flow down a slope face), level spreaders (to distribute concentrated flow into sheet flow), storm drain inlet protection and outlet protection, reinforced soil retaining systems, gabions, temporary or permanent sediment basins, and other appropriate BMPs.
- h. Sedimentation Basins. The SWPPP shall require a sedimentation basin for each drainage area with 10 or more acres disturbed at one time. The sediment basin shall be sized to contain 0.5 inch of sediment from the drainage area and to be able to contain a 2-year, 24-hour storm. The sediment shall be cleaned out of the basin and otherwise maintained as needed until the drainage area is stabilized. This requirement does not apply to flows from areas where such flows are properly diverted around both the disturbed areas and the sediment basin. Discharges from the basin shall not cause scouring of the banks or bottom of the receiving stream.

Where use of a sediment basin of this size is impractical, the SWPPP shall evaluate and specify other similarly effective BMPs to be employed to control erosion and sediment delivery. The SWPPP shall require the basin be maintained until final stabilization of the area served by the basin.

The SWPPP shall require both temporary and permanent sedimentation basins to have a stabilized spillway to minimize the potential for erosion of the spillway or basin embankment.

- i. Additional Site Management BMPs: The SWPPP shall address other BMPs, as required by site activities, to prevent contamination of storm water runoff. Such BMPs include:
- i. Solid and hazardous waste management including: providing trash containers and regular site clean up for proper disposal of solid waste such as scrap building material, product/material shipping waste, food containers, and cups; and providing containers and proper disposal of waste paints, solvents, and cleaning compounds, etc.;
 - ii. Provision of portable toilets for proper disposal of sanitary sewage;
 - iii. Storage of construction materials away from drainage courses and low areas; and
 - iv. Installation of containment berms and use of drip pans at petroleum product and liquid storage tanks and containers.
- j. Permanent Storm Water Management: The SWPPP shall include a description of the measures that will be installed during land disturbance to control pollutants in storm water discharges that will occur after land disturbance activity has been completed. These could include drainage channels or systems; outlet control devices, detention basins, oil water separators, catch basins, etc. This general permit does not require the permittee or the permittee's contractors to operate or maintain these measures beyond the date of MDNR's Letter of Termination.
9. Amending/Updating the SWPPP: The permittee shall amend and update the SWPPP as appropriate during the term of the land disturbance activity. The permittee shall amend the SWPPP, at a minimum, whenever the:
- a. Design, operation, or maintenance of BMPs is changed;
 - b. Design of the construction project is changed that could significantly affect the quality of the storm water discharges;
 - c. Permittee's inspections indicate deficiencies in the SWPPP or any BMP;
 - d. MDNR notifies the permittee of deficiencies in the SWPPP;
 - e. SWPPP is determined to be ineffective in significantly minimizing or controlling erosion and sedimentation (e.g., there is visual evidence, such as excessive site erosion or excessive sediment deposits in streams or lakes);
 - f. Total Settleable Solids from a storm water outfall exceed 2.5 ml/L/hr. unless the disturbed area is near a Valuable Resource Water as defined under 'Applicability to Valuable Resource Waters'. Settleable Solids from a storm water outfall in these areas shall not exceed 0.5 ml/L/hr.
 - g. MDNR determines violations of Water Quality Standards may occur or have occurred.

REQUIREMENTS AND GUIDELINES (continued)

10. Site Inspections Reports: The permittee shall ensure the land disturbance site is inspected on a regular schedule and within a reasonable time period (not to exceed 72 hours) following heavy rains. Regularly scheduled inspections shall be at a minimum once per week. For disturbed areas that have not been finally stabilized, all installed BMPs and other pollution control measures shall be inspected for proper installation, operation and maintenance. Locations where storm water leaves the site shall be inspected for evidence of erosion or sediment deposition. Any deficiencies shall be noted in a weekly report of the inspection(s) and corrected within seven calendar days of the inspection. The permittee shall promptly notify the site contractors responsible for operation and maintenance of BMPs of deficiencies.

A log of each inspection shall be kept. The inspection report is to include the following minimum information: inspector's name, date of inspection, observations relative to the effectiveness of the BMPs, actions taken or necessary to correct deficiencies, and listing of areas where land disturbance operations have permanently or temporarily stopped. The inspection report shall be signed by the permittee or by the person performing the inspection if duly authorized to do so.

11. Proper Operation and Maintenance: The permittee shall at all times maintain all pollution control measures and systems in good order to achieve compliance with the terms of this general permit.

The need to halt or reduce the permitted activity in order to maintain compliance with general permit conditions shall not be a defense to the permittee in an enforcement action.

12. Notification to All Contractors: The permittee shall notify each contractor or entity (including utility crews and city employees or their agents) who will perform work at the site of the existence of the SWPPP and what action or precautions shall be taken while on site to minimize the potential for erosion and the potential for damaging any BMP. If additional land is disturbed or any BMP damaged, then the permittee shall cause to have the disturbance or damage repaired.

OTHER DISCHARGES

1. Hazardous Substance and Oil Spill Reporting: Refer to Section B, #14 of Part I of the Standard Conditions that accompany this permit.
2. Removed substances: Refer to Section B, #6 of Part I of the Standard Conditions that accompany this permit.
3. Change in discharge: In the event soil contamination or hazardous substances are discovered at the site during land disturbance activities, the permittee shall notify MDNR in writing.

SAMPLING REQUIREMENTS AND EFFLUENT LIMITATIONS

1. Discharges shall not violate General Water Quality Standards 10 CSR 20-7.031(3). Settleable Solids shall not exceed a maximum of 2.5 ml/L/hr. for each storm water outfall, unless the disturbed area is near a Valuable Resource Water as defined under 'Applicability to Valuable Resource Waters'. Settleable Solids from a storm water outfall in these areas shall not exceed 0.5 ml/L/hr.
2. There are no regular sampling requirements in this permit. However, the department may require sampling and reporting as a result of illegal discharges, compliance issues, complaint investigations, or other such evidence of off-site contamination from activities at the site. If such an action is needed, the department will specify in writing any additional sampling requirements, including such information as location, extent, and parameters.

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RECORDS

1. The permittee shall retain copies of this general permit, the SWPPP and all amendments for the site named in the State Operating Permit, results of any monitoring and analysis, and all site inspection records required by this general permit. The permittee shall retain these records at a site which is readily available from the permitted site until final stabilization of a site is achieved. The local office of the permittee, their contractor or consultant is considered to be readily available from the project site if it is located in the same county as the project site. The records shall be accessible during normal business hours. After final stabilization the records may be maintained at the location of the permittee's main office. The records shall be retained for a period of at least three years from the date of the Letter of Termination.
2. The permittee shall provide a copy of the SWPPP to MDNR, USEPA, or any local agency or government representative if they request a copy in the performance of their official duties.
3. The permittee shall provide those who are responsible for installation, operation, or maintenance of any BMP a copy of the SWPPP.
4. The permittee, their representative, and/or the contractor(s) responsible for installation, operation, and maintenance of the BMPs shall have a current copy of the SWPPP with them when on the project site.

TRANSFER OF OWNERSHIP

1. Individual Lot or Lots: Federal and Missouri storm water regulations (10 CSR 20-6.200) require a storm water permit and erosion control for one acre or more disturbed as part of a common plan or sale. When individual lots (commercial, industrial, or residential) are sold to an entity for construction (unless sold to an individual for purposes of building their own private residence) are also subject to storm water regulations because they are part of the common sale.

The existing permittee who intends to transfer ownership of a lot or parcel of the overall permitted area is still responsible for the terms of this permit and erosion control on that site unless the new owner applies for and receives a separate Missouri State Operating Permit for storm water discharges from land disturbance activities. If the current permittee is to retain the permit and responsibility for control of sediment and other pollutants at the site, then the owner should obtain a copy of an Individual Lot Certification (ILC) from the lot owner(s). The ILC should be properly completed and signed and retained with the SWPPP.

2. Entire Tract: If the entire tract is sold to a single entity, then this permit shall be terminated and the new owner shall submit an application for a new permit immediately.

TERMINATION

This permit may be terminated when the project is stabilized. The project is considered to be stabilized when perennial vegetation, pavement, buildings, or structures using permanent materials cover all areas that have been disturbed. With respect to areas that have been vegetated, vegetative cover shall be at least 70% of fully established plant density over 100% of the disturbed area.

In order to terminate the permit, the permittee shall notify MDNR by submitting Form H, included with the State Operating Permit. The permittee shall complete Form H and mail it to MDNR at the address noted in the cover letter of this permit.

Page 1 of this permit specifies the expiration date of this permit. The "issue date" is the date the State Operating Permit is issued to the applicant. The "expiration date" may or may not coincide with the date when the authorized project or development is scheduled for completion.

TERMINATION (continued)

If the project or development completion date will be after the expiration date of this general permit, then the permittee must reapply to the department for the permit to be re-issued. The permittee will receive notification of the expiration date of the permit before the expiration date listed on page 1 of this permit. In order for the permit to be re-issued, the permittee should submit the appropriate application form(s) at least 180 days before the expiration of the permit if land disturbance activity is expected to continue past the expiration date of this general permit.

If the permittee does not apply for the renewal of this permit, this permit will automatically terminate on the expiration date. Continued discharges from a site that has not been fully stabilized are prohibited beyond the expiration date; unless the permit is reissued or the permittee has filed a timely application for the reissuance of this permit.

DUTY TO COMPLY

The permittee shall comply with all conditions of this general permit. Any noncompliance with this general permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6.200. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal.

MAILING ADDRESS

The permittee shall send all written correspondence and forms, which are to be submitted to MDNR to the address listed in the cover letter that accompanies this permit.