

**Environmental
Protection Agency**

Governor
Lt. Governor
Director



September 22, 2011

RE: WAYNE COUNTY
CITY OF ORRVILLE
JM SMUCKER PROJECT
HERITAGE PHASE II
CONSTRUCTION STORM WATER

Carlos Bastos, P.E.
The Dennis Group LLC
1537 Main Street
Springfield, MA 01103

Dear Mr. Bastos:

On September 8, 2011, Ohio Environmental Protection Agency (EPA) received a copy of the Storm Water Pollution Prevention Plan (SWP3) for the above referenced construction project. The City of Orrville has requested Ohio EPA review and comment of the SWP3. To date, coverage under the Ohio EPA General Storm Water National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities #OHC000003 has not yet been obtained for this project.

After review of the SWP3, Ohio EPA offers the following comments:

SWP3 Narrative

- **Cover Page.** The Dennis Group is the only operator identified for these construction activities, however as the developer, the JM Smucker Company also meets the definition of operator in the NPDES permit. As such, the SWP3 should list them as an operator as well. In addition, ensure that all operators have submitted a Notice of Intent (NOI) or Co-Permittee Notice of Intent (Co-Permittee NOI), as appropriate.
- **Part 1.6: Description of Storm Sewer Systems.** This section should also identify the post-construction drainage system of the site, identifying the number of outfalls, their locations and the size and nature (runoff coefficient) of the drainage area tributary to each. The post-construction water quality BMP(s) provided for discharges from each outfall should also be clearly identified. When

identifying post-construction BMPs, terminology should reflect the terminology used in the NPDES permit.

- **Section 2.1: Protect Natural Features.** This section does not indicate that silt fence or other such perimeter sediment control barrier will be placed around wetlands that will remain. Silt fence or other such perimeter barrier is required to minimize discharges of sediment to these water resources during the construction phase of this project.
- **Section 2.3: Controlling Stormwater Flows Onto and Through the Project.** The subsection on Sediment Basins does not provide any language regarding the maintenance of the Faircloth skimmer. Please review the attached installation and maintenance instructions for the Faircloth skimmer and incorporate the appropriate maintenance tasks into this section of the SWP3. This information must also be incorporated into Section 2.8 of the SWP3 (Retain Sediment on Site) where information on Sediment Basins is repeated.
- **Section 2.4: Stabilize Soils.** Although the subsection on Temporary Seeding correctly states that temporary seeding must be applied to disturbed areas where work is not scheduled for more than 21 days, it does not stipulate that temporary stabilization must be initiated within seven (7) days of last disturbance. Further, it does not stipulate that temporary stabilization must be initiated within two (2) days of last disturbance for areas within 50 feet of a surface water of the state (this includes wetlands). Similarly, the subsection on Permanent Seeding does not stipulate that permanent stabilization must also be initiated within seven (7) days of reaching final grade or if no work is expected for more than one (1) year. If these areas lie within 50 feet of a surface water of the state, permanent seeding must be initiated within two (2) days of reaching final grade or if no work is expected for more than one (1) year. Please correct the installation schedules to reflect these NPDES permit requirements.
- **Section 2.6: Protect Storm Drain Inlets.** To avoid confusion, references to "silt fence" should be removed from this section of the SWP3. The *Rainwater and Land Development* manual (Ohio Department of Natural Resources, 2006) uses the term storm drain inlet protection. Although it may be constructed using geotextile that resembles silt fence, it is not constructed by simply stringing silt fence around a catch basin. Further, maintenance procedures are different than

those for silt fence. It would be better to incorporate the maintenance activities included in the description of storm drain inlet protection contained in the *Rainwater* manual. The manual is available on-line at <http://www.dnr.state.oh.us/tabid/9186/default.aspx>.

- **Section 4: Selecting Post-Construction BMPs.** This section has been marked "N/A", however this project must provide post-construction water quality practices to comply with Part III.G.2.e of the NPDES permit. All post-construction storm water runoff from this project must first pass through an appropriate water quality practice before being discharged from this site. Table 2 on Page 23 of the NPDES permit identifies the standard post-construction BMPs approved for use throughout the state. Section 4 of the SWP3 should identify which of these practices is being implemented for which outfall and describe the installation schedule. Special considerations that may affect the timing of BMP installation, e.g., the placement of bioretention soil shall not occur until all tributary drainage areas have been permanently stabilized, should be noted in this section. You may simply reference the long-term operation and maintenance plan, as you have done, for maintenance and inspection procedures and identification of the responsible party. A copy of the long-term maintenance plan must be provided to the party responsible for long-term maintenance of the post-construction BMP(s).
- **Section 7: Final Stabilization.** This section contains a misinterpretation of the permanent stabilization requirements contained in the NPDES permit. Final stabilization is required on portions of the project that reach final grade or where no work is expected for more than one (1) year. Final stabilization must be initiated within seven (7) days of reaching final grade or within seven (7) days of the date that work will cease for one (1) year or longer. Please revise this section of the SWP3 to reflect these NPDES permit requirements.
- **Section 8: Certification.** Please be sure that the on-site copy of the SWP3 is signed by the appropriate party. See Part V.G of the NPDES permit for signatory requirements. The copy provided to Ohio EPA was not signed. In a similar vein, please be sure that information is added to the appendices as it is obtained.
- **Appendix K: Post-Construction Maintenance Plan.** For clarity, the storm water detention basins should be identified as dry extended detention basins.

This is the language used in the NPDES permit. Finally, the section on maintenance of the bioretention cell is titled "Storm Water Detention Basin" rather than "Bioretention Cell".

Plan Sheets

Construction Concerns:

- The information about sediment storage volume and dewatering volume provided on Sheet C4.01 within the section titled Sediment Basin Information is somewhat inconsistent with the information provided on Sheet C3.02 under the section labeled Design Data. Thus, we are unable to perform a review of the sediment basin design to ensure compliance with the NPDES permit requirements. Please provide clarification.
- Although you have provided a generic detail drawing for Faircloth Skimmer Discharge System with Outlet Structure on Sheet C4.01, for clarity, please provide a separate detail drawing for the two sediment basin outlet structures with elevations and storage volumes provided indicated on the drawing.
- The details provided for the three sediment traps are adequate and they have been designed per NPDES permit requirements. However, you have provided "silt fence outlet protection" across the outlet of the three sediment traps and across the emergency spillway of Sediment Basin #2. Please be aware that Ohio EPA does not recommend the placement of silt fence across concentrated flows of runoff as would be expected from the spillway of each sediment trap. Rather, rock outlet protection should be provided as shown in the standard detail drawing for sediment traps contained in *Rainwater and Land Development* (Ohio Department of Natural Resources, 2006) or the emergency spillway should be constructed as shown in the standard detail drawings for sediment basins contained in this manual. For clarity, the location of the spillways should be depicted on Sheets C3.01 and C3.02.
- Please clarify the limits of the 8.74 acres to be disturbed by Phase 2 of the Project Heritage construction site. Although the Limits of Disturbance are well defined along Wetland C and the NW corner of the site, the depiction on Sheets C3.01 and C3.02 does not show how these limits align with existing developed areas or Phase I, of this project.

- Although they appear to be depicted on Sheets C3.00, C3.01 and C3.02, the location of rock construction entrances and stone haul roads within the site are not labeled and there is no symbol in the Legend to identify them. Please add to the plan sheets.
- Erosion Control Note 4 on Sheet C3.02 must be corrected to reflect the requirements of the NPDES permit. Inspection records must be maintained for three (3) years following the submittal of a Notice of Termination (NOT). This note currently states that the records retention period is two (2) years.
- Erosion Control Note 11 on Sheet C3.02 must be corrected to reflect the requirements of the NPDES permit. The note currently states that temporary stabilization shall occur within seven (7) days of rough grading if a disturbed area will remain idle longer than 30 days. The NPDES permit requires temporary stabilization within seven (7) days of last disturbance if a disturbed area will remain idle for 21 days or longer.
- The construction sequence stops after "Begin cut and fill operations, excluding areas for the temporary sediment basins/traps". The sequence must be extended to final stabilization, including the installation of post-construction BMPs.
- Although you have indicated the location of the concrete washout pit, the location of material storage areas, vehicle fueling and waste dumpsters has not been depicted on the plan sheets. Please determine an appropriate location for these features and add them to the appropriate plan sheets. If these features will not exist, please provide an indication to that effect.

Post-Construction Concerns:

- A depiction of the post-construction drainage systems and delineation of the post-construction contributing drainage area to each of the two permanent dry extended detention basins has not been provided. Please provide me with this information. This drawing should clearly indicate the size of the drainage area to each pond and the imperviousness or runoff coefficient used to calculate the Water Quality Volume (WQv). Please ensure that runoff from all developed portions of this project are being treated by a post-construction BMP.

- Sheet C3.01 shows an existing storm sewer system discharging to a portion of Wetland C that will be removed. What is the fate of this storm sewer line?
- A detail drawing of the post-construction outlet structures from the two dry extended detention basins has not been provided. A drawing with elevations and storage volumes indicated must be provided on the plans.
- The post-construction maintenance plan references a bioretention cell, but no such structure is indicated on the plan sheets. Is the gray, rectangular block along the parking lot adjacent to Wetland C a bioretention cell? If so, no detail drawing with planting plan has been provided on the plan sheets. Further, it is difficult to discern how this structure interacts with the southern dry extended detention basin. If there is no bioretention cell, the information about bioretention cells should be removed from the post-construction maintenance plan.

Please review my comments and provide a written response to my concerns. Include any revisions to the SWP3 with your response. Please address my comments before construction on Phase 2 commences. Also, please provide me with a copy of any Section 401 permits or Section 404 water quality certifications for this project. No construction activities depicted in the SWP3 that result in the placement of fill within delineated wetlands and below the ordinary high water mark of streams is to occur without the appropriate Section 401 permit or Section 404 water quality certification.

If you have any questions, please contact me at (330) 963-1145.

Sincerely,



Dan Bogoevski
District Engineer
Division of Surface Water

DB/cs

cc: Bob Metze, JM Smucker Co

WAYNE COUNTY
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HERITAGE PHASE II
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Lynn Snyder, Engineer, City of Orrville
David Handwerk, Mayor, City of Orrville
Steve Wheeler, Public Service and Safety Director, City of Orrville

ec: Dan Osterfeld, Ohio EPA, NEDO, DSW
Megan Oberst, Army Corps of Engineers, Huntington District

8" Faircloth Skimmer® Surface Drain

Instructions for Assembly, Use and Maintenance

You Will Need:

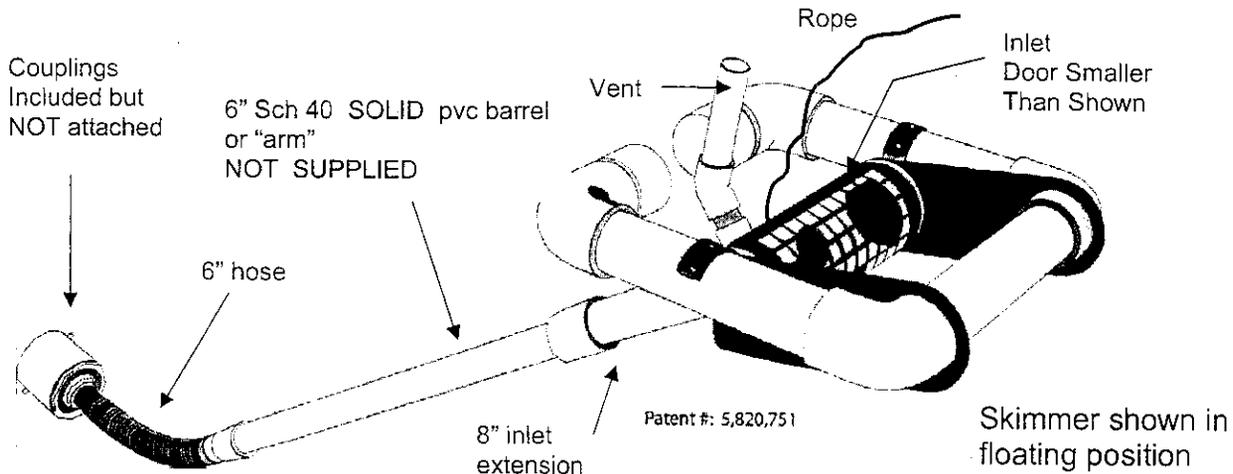
8 feet, or more depending on the depth of the pond, of 6" Sch 40 PVC pipe SOLID
Primer and glue for PVC pipe
Phillips screw driver, maybe a knife

Assembly and Installation Directions.

1. Glue on the 8" inlet extension to the Tee on the inlet. Install the vent.

Details Prime and glue the 8" inlet extension (with the coupling, 6" bushing and screws on one end) into the 8" end of the Tee on the side of the Inlet (12" horizontal tube suspended between the sides of the float with the door).

Install the vent into the socket in the Tee, back the screw out, insert the short end of the vent, point the long end toward the door on the inlet, and tighten the screw. Use a little grease so it can be removed later.



2. Glue the 6" sch 40 barrel at least 8' long to the 6" dark coupling on the hose.

Details You will need the 6" Sch 40 PVC pipe (solid, not foam core) for the barrel (or "arm") between the float assembly and the 6" hose. The **length** of the pipe should be about 1.4 times the depth of the basin so the skimmer floats properly when the basin fills **with a minimum length of 8'** so the skimmer can be pulled to the side of the basin for maintenance.

If barrel is longer than 15', weight may have to be added to the inlet so it sits at the right depth.

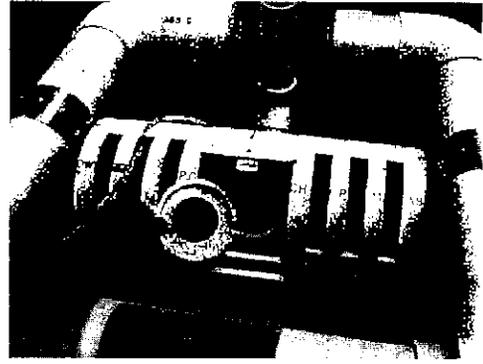
3. Put the other end of the barrel into the socket on the inlet extension and tighten the screws.

Details Make sure the screw points are not protruding into the 6" bushing on the outlet end of the inlet extension you glued onto the Tee.

WITHOUT GLUE OR PRIMER, but with a little grease, insert the other end of the pipe into the bushing all the way in until it hits bottom. It may be easier to do this in the basin after you have connected the hose to the pipe, riser or outlet structure. Tighten the screws so the points enter the pipe to secure it; they do not have to go all the way in. This connection is not glued to allow disassembly and possible reuse of the skimmer later.

4. Cut the orifice in the disk (size shown on the erosion control plans), put the disk in the adaptor, install the adaptor over the inlet, and tighten the screw. Close the door.

Details Refer to the erosion control plans for the orifice size. Open the door on the inlet, loosen the screw on the adaptor on the inlet pipe, and remove the 8" disk. Follow the instructions below for cutting the ORIFICE. Install the orifice in the adaptor, put the adaptor over the inlet, secure it with the screw (through the hole in the top of the inlet) and close the door and secure it with the screw eye. If you do not know the size of the orifice, refer to the instructions on the next page.



5. Cut a trench in the bottom of the basin 1' to 2' deep under where the skimmer will be placed. If required, place a support under the skimmer inlet.

Details If the skimmer will settle to the bottom when the basin drains it is recommended that a 1' - 2' deep trench a backhoe bucket wide should be excavated under the skimmer to catch sediment that will settle under the skimmer.

If a pool of water is to be provided, install the support under the skimmer inlet as shown on the erosion control plans. It is recommended that the hose connection to the pipe through the dam be low enough that the whole pond can be drained using the skimmer even if a pool of water is to be provided. Doing this will avoid using a pump to drain the very bottom of the pond.

If ice is expected during winter place the skimmer near the dam or side of the basin where the ice will be the thinnest and you can get to the inlet to break the ice and keep water flowing through the skimmer. But do not put it so close to the side that the skimmer cannot settle to the bottom and drain the whole basin.

6. Attach the 6" threaded fitting on the hose to the outlet structure.

Details The hose should be connected to the outlet structure using the 6" threaded fitting. If attaching to a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole cut in it and a 6" coupling welded to it that will fit over the hole in the concrete; bolt the plate to the structure with sealant to make it water tight. If attaching to a metal structure: 1) use a stubout on the side at the bottom with a 6" threaded female coupling, 2) if a valve is attached to the structure use couplings and reducers down to a 6" threaded female coupling. (You may NOT be able to do this on the inlet side of some types of slide gates; either use another connection point or leave the slide gate off until the skimmer is removed.)

It is possible to attach the skimmer directly to a pipe through the dam (without a riser) but make sure the connection point is properly anchored, even for a metal pipe, so it does not float or move. To attach to a plastic pipe use the 8" coupling and bushings and attach it to the plastic pipe.

7. Attach the rope to the Tee, NOT the screw eye, and the other end to a stake on the side of the basin.

Details Tie one end of the rope around the Tee between the vent socket and the 12" tube on the inlet. Secure the other end to a stake or post on the dam or side of the basin where it can be used to pull the skimmer to the side if necessary to remove trash and debris.

8. Put a fence post, 1 not 2, on the opposite side of the barrel from where the rope is tied to a stake to keep the skimmer in place.

Details Put the skimmer where you want it to settle to the bottom and drive a metal fence post into the ground on the outside of the barrel (away from the side or embankment) 3' from the float to hold the skimmer in that place. Make sure it is high enough so the barrel does not float over the top when the basin fills. Posts on both sides of the barrel are not recommended because it will prevent pulling the skimmer to the side for maintenance.

9. Take a break.

Maintenance

Trash: If the inlet screen clogs and there is water in the basin, tugging on the rope several times will usually wash the trash off and restore flow. If not, pull the inlet to the side of the basin and use a stick to clean the screen. Open the screen door and remove any trash or sediment inside so grass or trees do not grow in the inlet. (Yes, this can happen!)

Sediment Accumulation Around Skimmer: A shallow, long basin, using baffles, and inflow in the basin at the opposite end from the outlet help keep sediment away from the skimmer. If sediment restricts skimmer movement, pull the skimmer to one side and excavate under it.

Ice: Try to keep ice broken up at the inlet and around the barrel to keep water flowing, making it less likely the inlet will freeze. Spray painting the float black to absorb heat is recommended. Use paint that will stick to PVC plastic.

Handling the Skimmer: The skimmer is made of plastic and will withstand heat, cold and sunlight but it needs to be handled by hand, NOT grabbed with a backhoe bucket and yanked around, especially in cold weather. To remove the skimmer, disconnect the hose first, then disconnect the barrel from the inlet extension. DO NOT try to pull the skimmer loose with a backhoe.

Vandalism: Keep unauthorized persons that may do damage off the site. Do not provide rocks close to the skimmer if possible. If possible, taking other considerations into account, position the skimmer out in the basin away from the banks to decrease the potential for a successful hit.

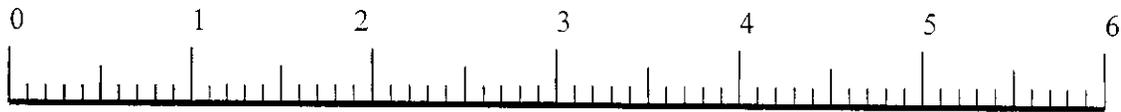
Call if you have problems or questions

Cutting and Installing the ORIFICE in the Inlet

Purpose: cutting a smaller hole or **orifice** (less than 8") in the disk and installing it in the inlet reduces the flow rate through the skimmer to match the volume of the basin and the number days to drain it. It customizes the skimmer for the basin it is used in and **is not optional** if the erosion control plan calls for a specific orifice.

1. The size of the orifice should be shown on the erosion control plans with the sediment basin specifications. If so use the following instructions to adjust the cutter, cut the orifice in the disk, put the disk in the adaptor, and install the adaptor over the inlet. If the size is not shown use the instructions on the next page to determine the orifice size or call us.
2. **Cutting the Orifice** After finding the size of the orifice on the plans or determining the size use the cutter provided to cut the hole in the center of the plastic disk you removed from the inlet.

Measure the radius (1/2 of the diameter) of the required orifice from the center of the pilot hole in the disk and mark it with a pencil.



Fold Page on Bottom Line to Create Ruler for Measuring Orifice Radius

BE CAREFUL OF THE SHARP NAIL POINT! Loosen the bolt in the slot by turning the wing nut. Place the end of the bolt with the 2 nuts on it in the pilot hole in the center of the plastic disk. Place the point of the nail on the mark for the orifice radius.

While holding the bolt at the proper place, remove the cutter from the pilot hole and tighten the wing nut. You should be able to tighten it without a wrench or pliers.

Next, insert the end of the bolt back in the pilot hole in the plastic disk so the nail point is against the disk. Hold the disk in one hand while turning the cutter with the other hand and scour the disk. Don't try to cut through the disk with just one turn, take several on each side. Turn the disk over and scour the other side several times.

The center of the hole should pop out after scouring both sides even if the plastic is not cut completely through around the entire perimeter. If not, CAREFULLY use a knife and cut around the scour line to finish cutting through.

3. **Installing the Orifice** Remove the screw eye holding the aluminum screen door on the inlet and open the door to get to the inlet:

Put the disk into the adaptor and install the adaptor over the inlet, the 8" pipe sticking through the side of the 12" pipe with the Tee attached to it. **See the picture above.** Tighten the screw on the adaptor enough so the point goes into the pipe. Put the Phillips screwdriver through the hole in the top of the inlet to reach this screw. Check to make sure the adaptor is secure.

DON'T GLUE THE DISK IN THE INLET. Doing so limits reusing the skimmer on another sediment basin that requires a different size orifice.

Close the door and replace the screw eye to hold it shut.

Determining Orifice Size

Draining the sediment basin in the required time involves: #1 choosing the size skimmer needed to drain the basin's volume in the specified number of days, in this case a 8" skimmer; and #2 adjusting the flow rate through the skimmer using a smaller orifice or hole placed over the inlet pipe. To determine the radius of this orifice divide the basin's volume by a factor (from #2 below) for the number of days to drain the basin; the result is the required area of the orifice. Then, calculate the orifice radius using $Area = \pi r^2$ and solving for r , $r = \sqrt{(Area/3.14)}$. The cutter can be adjusted to that radius and the orifice cut in the plastic disk that fits over the inlet as described above. This procedure "customizes" the skimmer for the basin it will be installed in.

- 1. Approximate skimmer maximum capacities based on typical draw down requirements, which can vary between States and jurisdictions and watersheds. Draining the basin in less than 2 days is not recommended.

8" skimmer	97,978 cubic feet in 24 hours	489,890 cubic feet in 5 days
with a 6" head	195,956 cubic feet in 2 days	587,868 cubic feet in 6 days
	293,934 cubic feet in 3 days	685,846 cubic feet in 7 days
	391,912 cubic feet in 4 days	

- 2. **Factors** (in cubic feet of flow per square inch of opening through a round orifice for the draw down times shown) to use in determining the orifice radius in inches for a particular basin volume to be drained. This quick method works because the orifice is centered in the inlet and has a constant head (the distance between the center and the water surface).

An alternative method is to use the orifice equation ($C = 0.59$) with the head for the particular skimmer (shown under #1 above) and determine the required orifice for the volume and draw down time.

8" skimmer	1,987 to drain the basin in 24 hours	9,935 to drain the basin in 5 days
	3,974 to drain the basin in 2 days	11,922 to drain the basin in 6 days
	5,961 to drain the basin in 3 days	13,909 to drain the basin in 7 days
	7,948 to drain the basin in 4 days	

The 1) size skimmer necessary for the sediment basin and 2) the required orifice radius and diameter for the skimmer should be shown on the erosion control plan for each basin. Also give the basin volume and number of days to drain; this can be helpful when the contractor orders the skimmer. During the skimmer installation the required orifice can be cut in the plastic disk by the contractor using the supplied cutter and installed in the skimmer using the instructions with the skimmer.

The plan review and enforcement authority may require calculations showing that the skimmer used can drain the basin in the required time.

For more information on sizing the orifice and for an example problem go to our web site or call us.

11-17-06; 11-14-07

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8inchInstr TM 11-07