

July 15, 2015

8685

Christine Rothman
Development Project Manager III
City of San Diego
Transportation and Storm Water Department, Operations and Maintenance
2781 Caminito Chollas, MS 44
San Diego, CA 92105

Subject: Master Storm Water System Maintenance Program- Tijuana River Valley Channel Maintenance Project Water Pollution Control Plan

Dear Mrs. Rothman:

In conformance with the City of San Diego (City) modified Master Storm Water System Maintenance Program's (Master Maintenance Program or MMP) amended Site Development Permit (SDP) No. 1134892 and Program Environmental Impact Report (PEIR) Project No. 42891/SCH No. 2004101032, the attached *Water Pollution Control Plan (WPCP) Report (2013)* is submitted as part of the Substantial Conformance Review (SCR) package for the Tijuana River Valley Channel Maintenance Project.

The 2013 WPCP was originally submitted as part of the approved Tijuana River Valley Channel Maintenance Project SCR package in December 2013 (hereafter 2013 SCR). Maintenance methods with potential storm water pollution impacts and channel conditions remain substantially similar to those described in the attached 2013 WPCP. Accordingly, this letter provides a summary technical review of the 2013 WPCP submitted as part of the 2013 SCR as it applies to current conditions in the Tijuana River Valley Channel Maintenance Project area. This letter and attachment serve as the basis for a SCR determination for maintenance work in 2015-2016 as part of the Tijuana River Valley Channel Maintenance Project. The technical review was performed by a California Registered Professional Engineer.

Project History and Background

The Tijuana River Valley Channel Maintenance Project includes maintenance of the Pilot Channel and Smuggler's Gulch Channel as part of the MMP. The Pilot Channel is included on MMP Maps 138a through 138c and the Smuggler's Gulch Channel is included on MMP Maps 138 and 139 (City of San Diego 2011). The Pilot Channel and Smuggler's Gulch Channel maintenance project Individual Maintenance Plan (IMP) and Individual Assessment (IA) package received SCR approval in February 2013. Appropriate environmental permits were also issued by the California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), United States Fish and Wildlife Service (USFWS), Army Corps of Engineers (ACOE), and the California Coastal Commission (CCC) in 2012 and 2013 based on the project scope, impacts, and mitigation. Maintenance activities in the Pilot Channel and Smuggler's Gulch Channel were conducted between September 23, 2013 and March 14, 2014. Appropriate

construction-related Best Management Practices and concurrent wetland compensatory mitigation have been implemented as part of the comprehensive channel maintenance project.

Project Description

The currently proposed maintenance of the Pilot Channel and the Smuggler's Gulch Channel includes the mechanized removal of sediment, vegetation and trash and debris from the channels. Proposed maintenance procedures for channel clearing activities in 2015-2016 as part of the Tijuana River Valley Channel Maintenance Project remain substantially similar to procedures proposed as part of the 2013 SCR and implemented in the 2013-2014 maintenance period.

The periodic maintenance of both channels is required to provide flood protection to surrounding properties and to protect the Tijuana River National Estuarine Research Reserve from impacts due to downstream transport of accumulated sediment and trash and debris from the project area. The project incorporates removal of approximately 10,000–30,000 cubic yards of material, occupying a total of 4.31 acres.

As described in the existing WPCP, the project is not subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No.CAS000002) (CGP) and associated amendments because, as stated in the CGP, it consists of "routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility." However, the project will include grading and soil disturbance as well as potentially allow storm water to come in contact with the construction area. Accordingly, a WPCP is required for the project.

Current Conditions

Since channel maintenance work was conducted in 2014, natural and anthropogenic processes in the upstream watershed have resulted in additional sediment, trash and debris accumulation in the channel maintenance areas. Site conditions have returned to essentially pre-maintenance conditions evaluated as part of the 2013 SCR package. The 2013 SCR and current conditions have been reviewed and the 2013 WPCP has been determined to be generally still applicable to the work anticipated this fall. Specific to the Tijuana River Channel Maintenance Project, the following conditions should be noted:

- The 2013 WPCP and other portions of the 2013 SCR were reviewed in June 2015 by Dudek.
- Pre-maintenance pumping is planned to dry ponded water in the eastern portion of the Pilot Channel to allow use of mechanized equipment. The pre-maintenance pumping will likely occur in stages. The pumping process will begin with the placement of a suction hose within the Pilot Channel near Hollister Street Bridge, placing a pump adjacent to the channel, and the placing of temporary hoses along/adjacent the channel bank to a discharge location, likely near the confluence of the Pilot Channel and SG

Channel. Critically silenced pumps will be used throughout the project. The second stage would involve a similar set up of equipment placed further downstream to pump water from the confluence to the downstream (western) end of the Pilot Channel. Additional pumping may be required if rains occur during the project and result in areas of ponded water within the work area.

- Trailer-mounted Godwin Critically Silenced Pumps with 3,240 gallons/minute capacity (or similar) will be used in the field for the pre-maintenance pumping (specification sheet attached). Fueling operations will follow procedures outlined in the California Stormwater Quality Association (CASQA) Construction Stormwater Best Management Practice (BMP) Handbook (2012). Non-Stormwater Management BMP procedures and practices designed to minimize and eliminate the discharge of pollutants from vehicle and equipment fueling and maintenance operations to stormwater drainage systems or to watercourses will be implemented, as identified in fact sheet NS-9 Vehicle and Equipment Fueling (attached). Specifically, the fueling area will be protected with berms and dikes to prevent run-on, runoff and to contain spills. Materials used to construct the bermed area will conform to the provisions detailed in CASQA fact sheet SE-8 (attached) and will be lined with a suitable impervious liner such as 6mm visqueen, free of holes, tears, or other defects that compromise the impermeability of the material. The bermed area will be constructed and maintained in sufficient quantity and size to contain potential spilled fuel liquid. Further, staff conducting fueling operations will be trained in spill prevention and control procedures per the guidelines in CASQA fact sheet WM-4 (attached).
- The WPCP shall be revised as follows: The City's Storm Water Requirements Applicability Checklist identifies the project site as high priority.
- The WPCP selected sediment control BMPs section shall be revised as follows. This change is required due to 20 mils plastic sheeting not being commercially available at this time:

Excavated material stockpile areas will be surrounded with silt fence at minimum and will be underlain by at least 6 mils thick plastic sheeting or liner of low permeability.
- The WPCP Weather Triggered Action Plan section shall be amended to include the following language:

"When there is a forecasted fifty percent (50%) or greater chance of likely precipitation of 0.10 inch or more **within 48 hours**, a pre-storm stormwater site inspection is required and the Qualified Contact Person shall ensure that the site is prepared for the forecasted storm event." (emphasis added).

In summary, an evaluation of current conditions and review of the 2013 WPCP determined that conditions are substantially similar to the conditions identified in the 2013 WPCP. The pre- and potential during-maintenance pumping activities do not present significant water quality impacts when addressed and/or mitigated by the water pollution control measures identified above. Therefore the proposed maintenance would substantially conform to the existing permit and environmental document.

Mrs. Christine Rothman

Subject: Tijuana River Valley Channel Maintenance Project- Water Pollution Control Plan

Please contact me by phone (760.479.4143) or by e-mail (hlamberson@dudek.com) with questions or requests for clarification.

Respectfully,

Heather L. Lamberson



Heather Lamberson, PE
Senior Engineer
DUDEK

WATER POLLUTION CONTROL PLAN

for

Pilot & Smuggler's Gulch Channels Routine Maintenance Project

Prepared for:

City of San Diego Transportation & Storm Water Department
2781 Caminito Chollas, MS 44
San Diego, CA 92105

Submitted by:

Anne B. Jarque
Senior Planner, Storm Water Division
(619) 527-3131

Project Site Address/Location:

West of Hollister Street and north of Monument Road

Contractor's Qualified Contact Person:

TBD

WPCP Prepared by:

URS Corporation
4225 Executive Square, Suite 1600
La Jolla, CA 92037
(858) 812-9292

WPCP Preparation Date:

12/17/2012

Project Information

1. Project Description

The project consists of cleaning sediment and vegetation from the Pilot Channel and Smuggler's Gulch (SG) Channel in the Tijuana River Valley. The Pilot Channel maintenance consists of removing accumulated sediment and vegetation over a length of 5,400 feet starting 100 feet east of the Hollister Bridge. The maintenance activities will be minimized to a 23 foot width along the channel centerline. The maintenance in the SG channel will be a 20 foot width along the channel's centerline starting at the Monument Road crossing to the confluence with the Pilot Channel (approximately 3,040 linear feet). Other activities associated with completing this work includes: maintaining the existing access roadways as needed, constructing a new turnaround along the north bank of the Pilot Channel, removal of sediment and other debris from the culverts in Monument Road and Disney Crossing, and maintenance on the gabion rock mattress located near the confluence of the SG Channel and the Pilot Channel. Two staging areas (Staging Areas B & D) will be utilized for the maintenance activities.

The total disturbed area of the project, including stabilized construction roadways and staging areas is approximately 18 acres. The project is not subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) (CGP) and associated amendments because, as stated in the CGP, it consists of "routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility." The maintenance work is subject to multiple permits and a list of all the conditions is included in Appendix B - Master List of BMPs.

2. Unique Site Features

Both channels are located in the Tijuana River Valley.

3. Project Schedule

The maintenance activities will take place between September 15th and February 15th and will occur over a period of a month. Work will be scheduled as early as possible in this timeframe to minimize the potential exposure to rain. The schedule can be extended past February 15th with written permission from the California Department of Fish and Game and the US Fish and Wildlife Service.

4. Potential Pollutant Sources

The primary construction activities, related materials, and wastes that have the potential to pollute storm water include:

- a) Exposed soil areas from stockpiles and channel clearing activities,
- b) Fuel and other fluids from heavy equipment, and
- c) General construction waste materials.

Pollution Sources and Control Measures

The selected temporary sediment, erosion, and materials management control BMPs will be implemented on the construction site. Implementation and locations of temporary BMPs are shown on the Water Pollution Control Drawings. The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. The following list of BMPs and narrative explains how the selected BMPs will be incorporated into the project.

TEMORARY SOIL STABILIZATION BMPs				
BMP No.	BMP	CHECK IF USED	CHECK IF NOT USED	IF NOT USED, STATE REASON
EC-1	Scheduling	X		
EC-2	Preservation of Existing Vegetation	X		
EC-3	Hydraulic Mulch	X		
EC-4	Hydroseeding		X	Other soil stabilization BMPs will be used.
EC-5	Soil Binder	X		
EC-6	Straw Mulch		X	Other soil stabilization BMPs will be used.
EC-7	Geotextiles & Mats	X		
EC-8	Wood Mulching		X	Other soil stabilization BMPs will be used.
Temporary Concentrated Flow Conveyance Controls				
EC-9	Earth Dikes/Drainage Swales & Lined Ditches	X		
EC-10	Velocity Dissipation Devices		X	Channel work will not require outlet protection/velocity dissipation devices.
EC-11	Slope Drains		X	There are no steep slopes on the project.

Soil disturbing activities will consist of the maintenance work in the channels. Work will be scheduled as early as possible in the allowable timeframe (September 15th to February 15th) to minimize soil exposure to rain. Existing vegetation will be preserved to the maximum extent practicable and disturbance activities will be limited to the required maintenance activity areas. Plastic covers, hydraulic mulch, and soil binders are the preferred measures to be used on excavated material stockpile areas for temporary protection from erosion. Other geotextiles or mats may be used with the approval of the City's Stormwater Department staff. Earth dikes and drainage swales can be used around stockpiles and to prevent run-on into the staging areas if other measures are deemed inadequate. No soil disturbing activities will be permitted outside the channels, staging areas, and access routes.

The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. See the attached plans for the locations of the BMPs.

Sediment Control Practices

TEMPORARY SEDIMENT CONTROL BMPs				
<i>BMP No.</i>	<i>BMP</i>	<i>CHECK IF USED</i>	<i>CHECK IF NOT USED</i>	<i>IF NOT USED, STATE REASON</i>
SE-1	Silt Fence	X		
SE-2	Sediment Basin		X	Based on project configuration and size, sediment basins are not applicable
SE-3	Sediment Trap		X	Based on project configuration and size, sediment traps are not applicable
SE-4	Check Dam		X	Based on Individual Hydraulic and Hydrology Assessment, check dams are not needed.
SE-5	Fiber Rolls	X		
SE-6	Gravel Bag Berm	X		
SE-7	Street Sweeping and Vacuuming-Daily	X		
SE-8	Sandbag Barrier		X	Other sediment control BMPs will be used.
SE-9	Straw Bale Barrier		X	Other sediment control BMPs will be used.
SE-10	Storm Drain Inlet Protection		X	No storm drain inlets are located on/near the project area.

Selected Sediment Control BMPs

Silt fences, fiber rolls, and gravel bag berms will be used in conjunction with soil stabilization measures on the excavated material stockpiles. Excavated material stockpile areas will be surrounded with silt fence at minimum and will be underlain by at least 20 mils thick plastic sheeting or liner of low permeability. Street sweeping/vacuuming will occur at least daily along the paved access routes between channel maintenance activities and the staging areas. Silt fences in conjunction with the existing earthen berms will prevent any materials from discharging from Staging Area B into sensitive habitat and/or into the channel. No soil disturbing activities will be permitted outside the channels, staging areas, and access routes.

The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. See the attached plans for the locations of the BMPs

Tracking Control Practices

TRACKING CONTROL BMPs				
<i>BMP No.</i>	<i>BMP</i>	<i>CHECK IF USED</i>	<i>CHECK IF NOT USED</i>	<i>IF NOT USED, STATE REASON</i>
TC-1	Stabilized Construction Entrance/Exit	X		
TC-2	Stabilized Construction Roadway	X		
TC-3	Entrance/Outlet Tire Wash		X	Other tracking control measures will be used
SE-7	Street Sweeping and Vacuuming	X		

Selected Tracking Control BMPs

Stabilized construction entrances/exits will be used at the access points to the site. Existing access roads will be utilized and will be inspected and maintained prior to the start of the maintenance activities. Stabilized construction roadway practices will be used along the existing access roadways as necessary. Aggregate, asphalt concrete or concrete based measures shall not be used for the stabilized construction roadway practices. Existing access roads shall not be removed and should be re-graded and repaired as necessary at the end of the maintenance activities.

The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. See the attached plans for the locations of the BMPs.

Wind Erosion Controls

Wind erosion controls will be applied as necessary to exposed areas (including stockpiles) to prevent nuisance dust. The soil stabilization BMPs selected for the project will also provide wind erosion control benefits.

A sweeper and water truck will operate regularly on Monument Road and Hollister Street to control dust created by truck traffic.

Non-Storm Water Management BMPs

NON-STORM WATER MANAGEMENT BMPs				
<i>BMP No.</i>	<i>BMP</i>	<i>CHECK IF USED</i>	<i>CHECK IF NOT USED</i>	<i>IF NOT USED, STATE REASON</i>
NS-1	Water Conversation Practice	X		
NS-2	Dewatering Operations		X	Dewatering operations are not anticipated for this project.
NS-3	Paving and Grinding Operations		X	There are no paving or grinding operations associated with this project.
NS-4	Temporary Stream Crossing		X	There are no temporary stream crossings associated with this project.
NS-5	Clear Water Diversion		X	There are no clear water diversions associated with this project.
NS-6	Illicit Discharge/Illegal Dumping Reporting	X		
NS-7	Potable Water/Irrigation	X		
<i>Vehicle and Equipment Operations</i>				
NS-8	Vehicle and Equipment Cleaning		X	Vehicle/equipment cleaning will be done offsite.
NS-9	Vehicle and Equipment Fueling	X		
NS-10	Vehicle and Equipment Maintenance	X		

Selected Non-Storm Water Management BMPs

The project will include the following activities that have the potential to generate non-storm water discharges:

- Wind erosion control using water trucks
- Vehicles and equipment fueling or leaks

Water will be conserved to the maximum extent practicable and any unplanned potable water discharges will be controlled following the guidance of NS-7. Contractor will notify the Resident Engineer of any illicit discharges or illegal dumping encountered during the maintenance operation.

Vehicle and equipment cleaning is not allowed on the project site. Re-fueling will be restricted to heavy earth moving equipment that stays onsite overnight (not dump trucks) and will be restricted to the staging areas only. Equipment will be inspected for fluid leaks and promptly cleaned up. There will be no storage of petroleum products or chemicals permitted onsite.

Dewatering of the site after a rain event is not anticipated for this maintenance project due to the dry excavation requirement. Construction BMPs used onsite will treat and release any storm water runoff. In the event of rain, any work in the channels will stop until the area has sufficiently dried out.

The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. See the attached plans for the locations of the BMPs.

Waste Management and Materials Pollution Control BMPs

WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs				
<i>BMP No.</i>	<i>BMP</i>	<i>CHECK IF USED</i>	<i>CHECK IF NOT USED</i>	<i>IF NOT USED, STATE REASON</i>
WM-1	Material Delivery and Storage	X		
WM-2	Material Use	X		
WM-3	Stockpile Management	X		
WM-4	Spill Prevention and Control	X		
WM-5	Solid Waste Management	X		
WM-6	Hazardous Waste Management	X		
WM-7	Contaminated Soil Management	X		
WM-8	Concrete Waste Management		X	There is no concrete waste associated with this project.
WM-9	Sanitary/Septic Waste Management	X		
WM-10	Liquid Waste Management	X		

Selected Waste Management and Materials Pollution Control BMPs

The BMPs selected above will be implemented on the project. Materials associated with the application of BMPs are the only materials anticipated to be delivered, stored and/or used onsite. In the process of sorting the excavated materials from the channels, the Contractor may encounter contaminated soil or other hazardous materials and will follow the guidance of the applicable BMP fact sheets. Sanitary and trash receptacle facilities will be located onsite in the staging areas and a minimum of 150 feet from the channels. Hazardous materials should be stored at minimum 50 feet from any storm drain facility.

All sorting activities associated with the excavated material will occur in Staging Area D.

The CASQA Construction Stormwater BMP Handbook should be used as guidance in the application of the BMPs. See the attached plans for the locations of the BMPs

Water Pollution Control Drawings

The water pollution control drawings (WPCDs) are included in Appendix A. The WPCDs show the location of the BMPs and any additional instructions.

Construction BMP Maintenance, Inspection, and Repair

The Qualified Contact Person will assign a monitor for daily inspection of the BMPs. Each morning, the monitor will check the National Weather Service Forecast (<http://www.srh.noaa.gov>), complete a BMP inspection checklist, perform any necessary BMP maintenance or repairs, and report the results to the Qualified Contact Person. The monitor completed BMP inspection checklists will be kept with the WPCP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs. The inspection, maintenance, and repair program is shown below. Within 72 hours of the first 2-year storm event (1.0 inch for the 2 year, 6 hour rainfall event) following the maintenance activities, the channels should be inspected for substantial erosion. If substantial erosion has occurred, erosion control measures recommended by the field engineer should be implemented to minimize future erosion.

WPCP
Inspection, Maintenance, and Repair Program

[illegible]

Weather Triggered Action Plan

The Qualified Contact Person shall monitor the weather forecast on a daily basis for predicted precipitation within the following 96 hours. The Qualified Contact Person shall monitor the forecast for the next 24, 48, 72 and 96 hours to determine if the forecast for precipitation is 50 percent or greater for any 6-hour period. If the forecast for precipitation is 50 percent or greater, the Qualified Contact Person shall calculate the amount of precipitation forecasted for each 24-hour period and the total precipitation for the forecasted storm event and record the information.

When there is a forecasted fifty percent (50%) or greater chance of likely precipitation of 0.10 inch or more, a pre-storm stormwater site inspection is required and the Qualified Contact Person shall ensure that the site is prepared for the forecasted storm event.

The following weather triggered action plan shall be implemented:

- All work associated with excavating soil from its initial resting place shall cease immediately. The only work that shall continue in the channel is the loading and removal of already disturbed material.
- All sediment control BMPs shall be removed from the channel. These BMPs are only capable of treating low flows. They provide zero benefit to water quality and are actually a liability because of the high probability that they will be washed downstream.
- Site preparation activities shall be completed in the staging areas and shall include, but are not limited to, the installation of soil stabilization and sediment best management practices on any active disturbed soil areas and stockpiles.

List of Related Attachments

Attachment 1A – Water Pollution Control Drawings/Project Plans

Attachment 1B – Master List of BMPs

Attachment 1D – IMP Maintenance Methodology

Critically Silenced Dri-Prime[®] Pumps

The Godwin Critically Silenced enclosure houses the versatile Dri-Prime CD, HL, NC and Wellpoint range pumps in a specially designed, acoustically-silenced enclosure. The Critically Silenced unit is intended for use in any pumping application where engine and other noise must be kept to a minimum. Sound levels are approximately 69 dBA at 30 feet (9 meters).

Features and Benefits

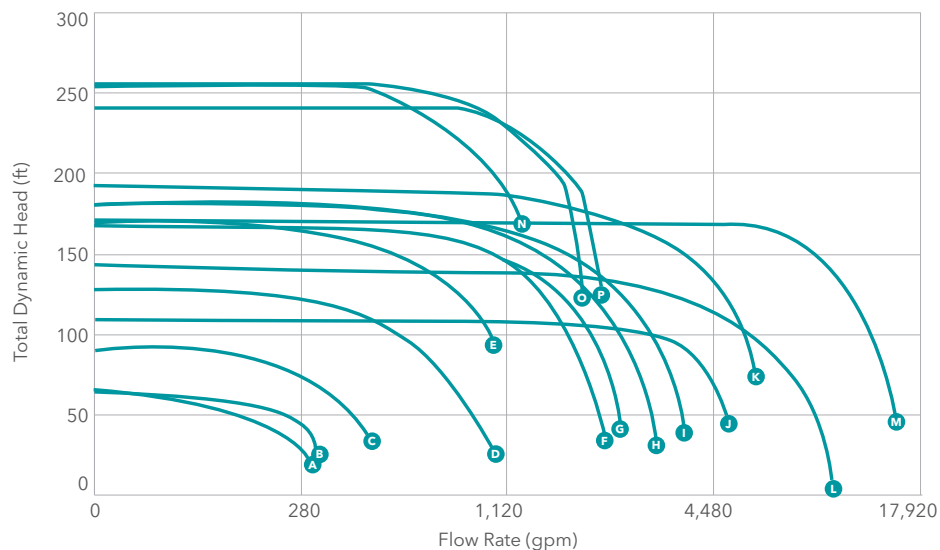
- 14-gauge sheet metal (12-gauge on larger units) enclosure lined with 1" and 2" (25mm and 50mm) layers of polydamp acoustical sound-deadening material
- Engine designed with critical grade muffler, silenced priming exhaust, and isolated engine vibration to further reduce operating noise
- Hinged, lockable doors for controlled access to operating controls and service locations
- Entire unit can be unbolted and removed from the optional DOT highway trailer for added versatility
- UL142 rated and double wall fuel tanks are available



godwin 
a xylem brand

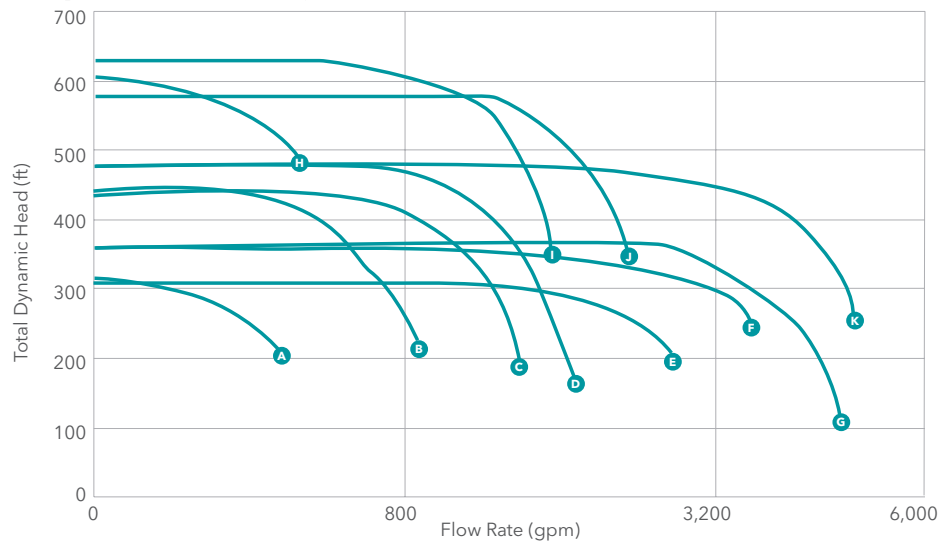
Please contact the factory or office for further details. A typical picture of the pump is shown.
All information is approximate and for general guidance only.

Pump Curve - CD Range



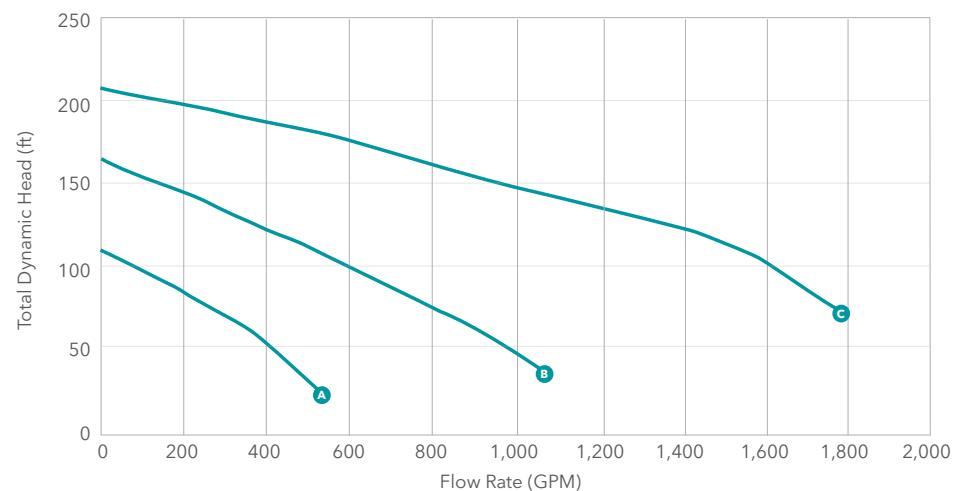
- A CD75MA5
- B CD80D
- C CD80M
- D CD100M/CD100MV
- E CD103M
- F CD150M/CD150MV
- G CD200M
- H CD225M/CD225MV
- I CD250M
- J DPC300
- K CD300M
- L CD400M
- M CD500M
- N CD140M
- O CD160M
- P CD180M

Pump Curve - HL Range



- A HL80M
- B HL100M
- C HL125M
- D HL150M
- E HL200M
- F HL225M
- G HL250M
- H HL110M
- I HL130M
- J HL160M
- K HL260M

Pump Curve - NC Range



- A NC80
- B NC100
- C NC150

Composite curves for comparison purposes only. Consult engineering data for exact flow and head capabilities.



84 Floodgate Road
Bridgeport, NJ 08014
(856) 467-3636 . Fax (856) 467-4841
sales@godwinpumps.com

Reference number: Critically Silenced
Date of issue: June 05, 2014
Issue: 1

www.godwinpumps.com

CD225M Dri-Prime® Pump

The Godwin Dri-Prime CD225M pump offers flow rates to 3240 USGPM and has the capability of handling solids up to 3.0" in diameter.

The CD225M is able to automatically prime to 28' of suction lift from dry. Automatic or manual starting/stopping available through integral mounted control panel or optional wireless-remote access.

Indefinite dry-running is no problem due to the unique Godwin liquid bath mechanical seal design. Solids handling, dry-running, and portability make the CD225M the perfect choice for dewatering and bypass applications.



Features and Benefits

- Simple maintenance normally limited to checking fluid levels and filters.
- Dri-Prime (continuously operated Venturi air ejector priming device) requiring no periodic adjustment. Optional compressor clutch available.
- Extensive application flexibility handling sewage, slurries, and liquids with solids up to 3.0" in diameter.
- Dry-running high pressure liquid bath mechanical seal with high abrasion resistant solid silicon carbide faces.
- Close-coupled centrifugal pump with Dri-Prime system coupled to a diesel engine or electric motor.
- All cast iron construction (stainless steel construction option available) with cast steel impeller.
- Also available in a critically silenced unit which reduces noise levels to less than 70 dBA at 30'.
- Standard engine John Deere 4045TF285 (T3 Flex). Also available with John Deere 4045HFC92 (IT4).

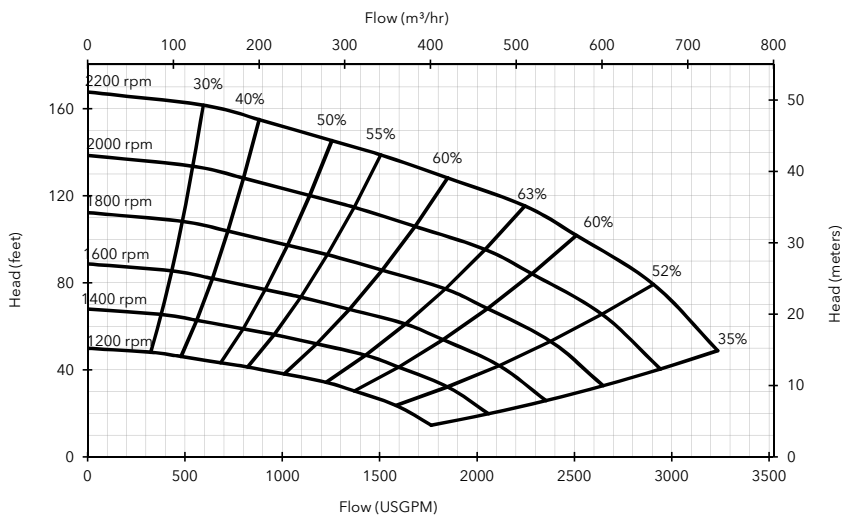
Specifications

Suction connection	8" 150# ANSI B16.5
Delivery connection	8" 150# ANSI B16.5
Max capacity	3240 USGPM †
Max solids handling	3.0"
Max impeller diameter	11.4"
Max operating temp	176°F*
Max pressure	73 psi
Max suction pressure	73 psi
Max casing pressure	110 psi
Max operating speed	2200 rpm

* Please contact our office for applications in excess of 176°F.

† Larger diameter pipes may be required for maximum flows.

Performance Curve



Engine option 1

John Deere 4045TF285 (T3 Flex), 99 HP @ 2200 rpm

Impeller diameter 11.4"

Pump speed 2200 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	42	70	101	121	137
	Output (USGPM)				
10	3148	2906	2325	-	-
15	2906	2543	2058	1695	-
20	1695	1695	1695	1453	-
25	1211	1211	1211	969	387

Fuel capacity: 100 US Gal

Max Fuel consumption @ 2200 rpm: 5.8 US Gal/hr

Max Fuel consumption @ 1800 rpm: 5.0 US Gal/hr

Weight (Dry): 4,440 lbs

Weight (Wet): 5,160 lbs

Dim.: (L) 155" x (W) 76" x (H) 93"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.

Materials

Pump casing & suction cover	Cast iron BS EN 1561 - 1997
Wearplates	High Chromium Cast Iron HC403:1977
Pump Shaft	Carbon steel BS 970 - 1991 817M40T
Impeller	Cast Steel BS3100 A5 Hardness to 200 HB Brinell
Non-return valve body	Cast iron BS EN 1561 - 1997
Mechanical seal	Silicon carbide face; Viton elastomers; Stainless steel body

Engine option 2

John Deere 4045HFC92 (IT4), 99 HP @ 2200 rpm

Impeller diameter 11.4"

Pump speed 2200 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	42	70	101	121	137
	Output (USGPM)				
10	3148	2906	2325	-	-
15	2906	2543	2058	1695	-
20	1695	1695	1695	1453	-
25	1211	1211	1211	969	387

Fuel capacity: 100 US Gal

Max Fuel consumption @ 2200 rpm: 5.4 US Gal/hr

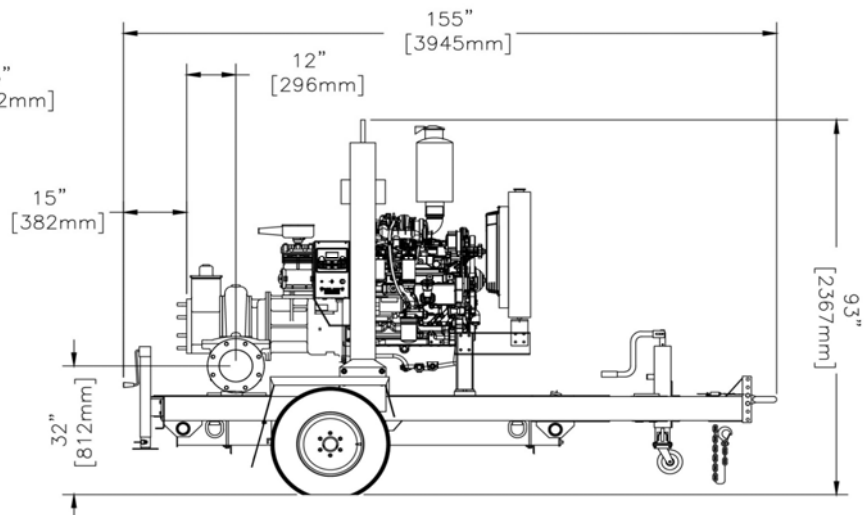
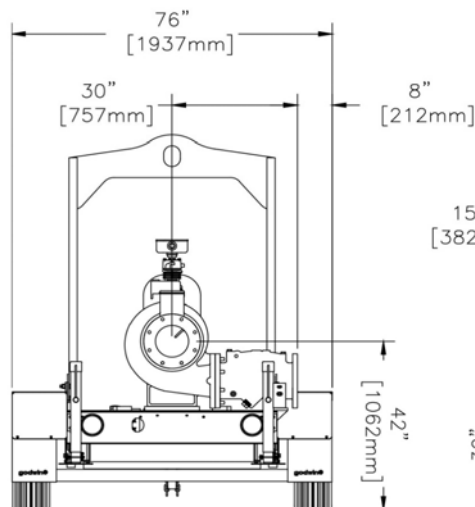
Max Fuel consumption @ 1800 rpm: 4.8 US Gal/hr

Weight (Dry): 4,680 lbs

Weight (Wet): 5,400 lbs

Dim.: (L) 155" x (W) 76" x (H) 93"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.



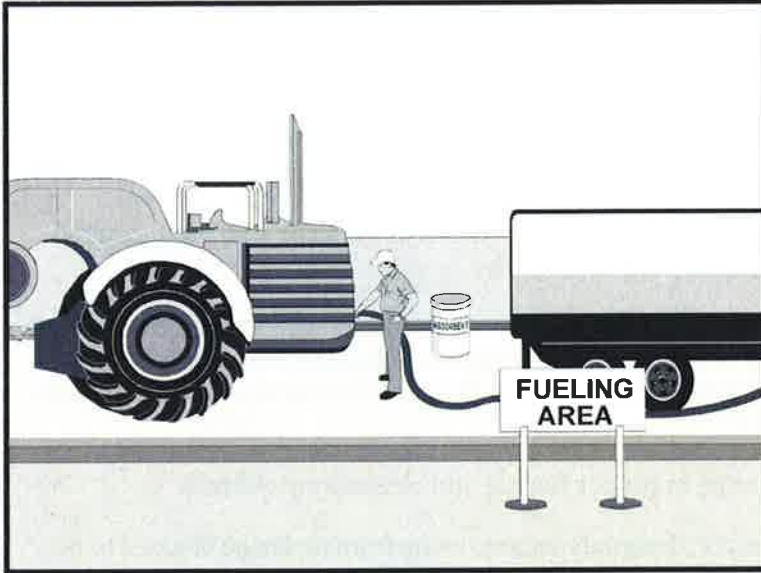
84 Floodgate Road
Bridgeport, NJ 08014 USA
(856) 467-3636 : Fax (856) 467-4841
Email: sales@godwinpumps.com

Reference number : 95-1015-3000
Date of issue : February 26, 2014
Issue : 5

www.godwinpumps.com

Vehicle and Equipment Fueling

NS-9



Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications

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

Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☐ Secondary Objective

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☒
Organics	

Potential Alternatives

None

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- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use.
- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runoff and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runoff, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Costs

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.

- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

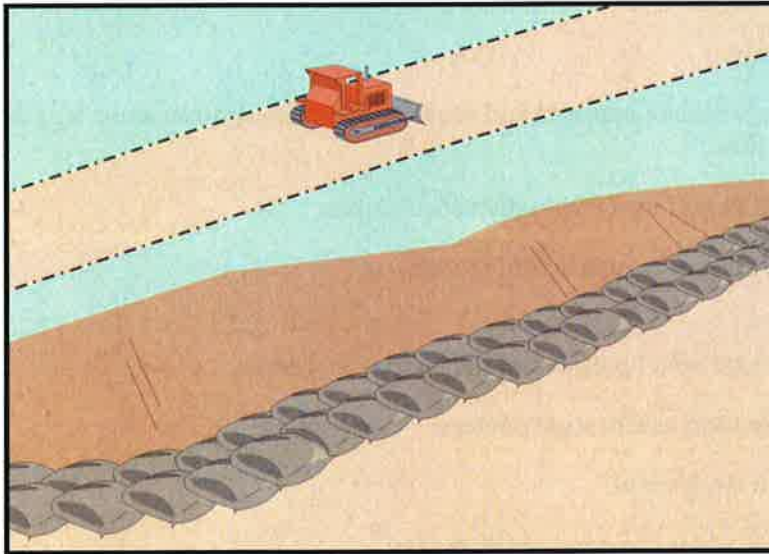
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Sandbag Barrier

SE-8



Description and Purpose

A sandbag barrier is a series of sand-filled bags placed on a level contour to intercept or to divert sheet flows. Sandbag barriers placed on a level contour pond sheet flow runoff, allowing sediment to settle out.

Suitable Applications

Sandbag barriers may be a suitable control measure for the applications described below. It is important to consider that sand bags are less porous than gravel bags and ponding or flooding can occur behind the barrier. Also, sand is easily transported by runoff if bags are damaged or ruptured. The SWPPP Preparer should select the location of a sandbag barrier with respect to the potential for flooding, damage, and the ability to maintain the BMP.

- As a linear sediment control measure:
 - Below the toe of slopes and erodible slopes.
 - As sediment traps at culvert/pipe outlets.
 - Below other small cleared areas.
 - Along the perimeter of a site.
 - Down slope of exposed soil areas.
 - Around temporary stockpiles and spoil areas.
 - Parallel to a roadway to keep sediment off paved areas.
 - Along streams and channels.

Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Category
- ☒ Secondary Category

Targeted Constituents

Sediment	☒
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

- SE-1 Silt Fence
- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-12 Manufactured Linear Sediment Controls
- SE-14 Biofilter Bags

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- As linear erosion control measure:
 - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
 - At the top of slopes to divert runoff away from disturbed slopes.
 - As check dams across mildly sloped construction roads.

Limitations

- It is necessary to limit the drainage area upstream of the barrier to 5 acres.
- Sandbags are not intended to be used as filtration devices.
- Easily damaged by construction equipment.
- Degraded sandbags may rupture when removed, spilling sand.
- Installation can be labor intensive.
- Durability of sandbags is somewhat limited and bags will need to be replaced when there are signs of damage or wear.
- Burlap should not be used for sandbags.

Implementation

General

A sandbag barrier consists of a row of sand-filled bags placed on a level contour. When appropriately placed, a sandbag barrier intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding allows sediment to settle. Sand-filled bags have limited porosity, which is further limited as the fine sand tends to quickly plug with sediment, limiting or completely blocking the rate of flow through the barrier. If a porous barrier is desired, consider SE-1, Silt Fence, SE-5, Fiber Rolls, SE-6, Gravel Bag Berms or SE-14, Biofilter Bags. Sandbag barriers also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets which erode rills, and ultimately gullies, into disturbed, sloped soils. Sandbag barriers are similar to gravel bag berms, but less porous. Generally, sandbag barriers should be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Design and Layout

- Locate sandbag barriers on a level contour.
- When used for slope interruption, the following slope/sheet flow length combinations apply:
 - Slope inclination of 4:1 (H:V) or flatter: Sandbags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
 - Slope inclination between 4:1 and 2:1 (H:V): Sandbags should be placed at a maximum interval of 15 ft. (a closer spacing is more effective), with the first row near the slope toe.

- Slope inclination 2:1 (H:V) or greater: Sandbags should be placed at a maximum interval of 10 ft. (a closer spacing is more effective), with the first row near the slope toe.
- Turn the ends of the sandbag barrier up slope to prevent runoff from going around the barrier.
- Allow sufficient space up slope from the barrier to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, sand bag barriers should be set back from the slope toe to facilitate cleaning. Where specific site conditions do not allow for a set-back, the sand bag barrier may be constructed on the toe of the slope. To prevent flows behind the barrier, bags can be placed perpendicular to a berm to serve as cross barriers.
- Drainage area should not exceed 5 acres.
- Butt ends of bags tightly.
- Overlap butt joints of row beneath with each successive row.
- Use a pyramid approach when stacking bags.
- In non-traffic areas
 - Height = 18 in. maximum
 - Top width = 24 in. minimum for three or more layer construction
 - Side slope = 2:1 (H:V) or flatter
- In construction traffic areas
 - Height = 12 in. maximum
 - Top width = 24 in. minimum for three or more layer construction.
 - Side slopes = 2:1 (H:V) or flatter.
- See typical sandbag barrier installation details at the end of this fact sheet.

Materials

- **Sandbag Material:** Sandbag should be woven polypropylene, polyethylene or polyamide fabric, minimum unit weight of 4 ounces/yd², Mullen burst strength exceeding 300 lb/in² in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355. Use of burlap is not an acceptable substitute, as sand can more easily mobilize out of burlap.
- **Sandbag Size:** Each sand-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.

- **Fill Material:** All sandbag fill material should be non-cohesive, Class 3 (Caltrans Standard Specification, Section 25) or similar permeable material free from clay and deleterious material, such as recycled concrete or asphalt.

Costs

Empty sandbags cost \$0.25 - \$0.75. Average cost of fill material is \$8 per yd³. Additional labor is required to fill the bags. Pre-filled sandbags are more expensive at \$1.50 - \$2.00 per bag. These costs are based upon vendor research.

Inspection and Maintenance

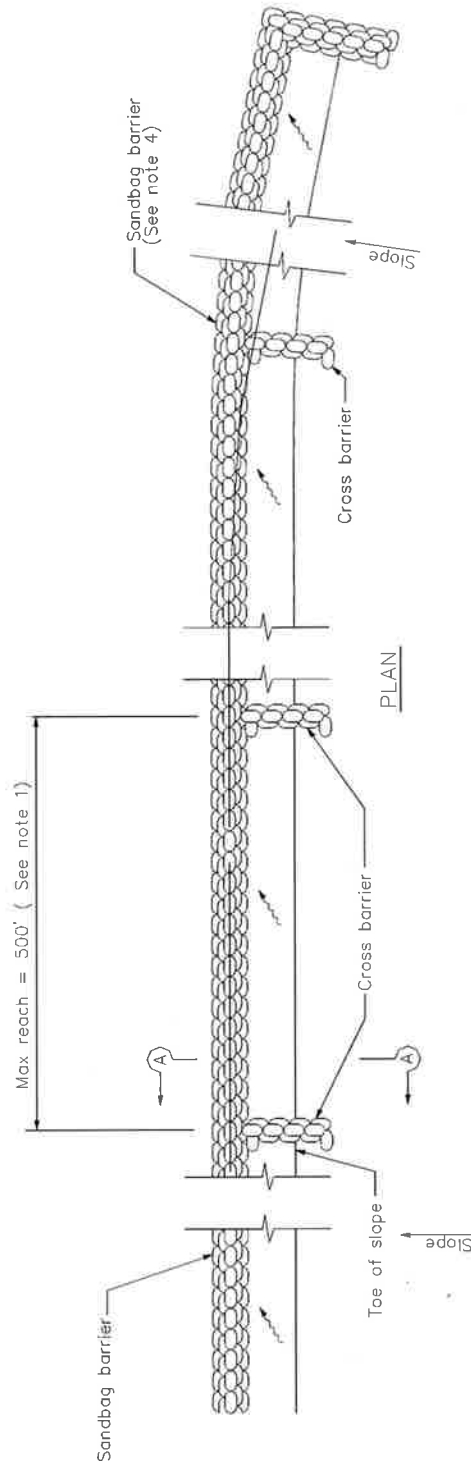
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Sandbags exposed to sunlight will need to be replaced every two to three months due to degradation of the bags.
- Reshape or replace sandbags as needed.
- Repair washouts or other damage as needed.
- Sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Remove sandbags when no longer needed and recycle sand fill whenever possible and properly dispose of bag material. Remove sediment accumulation, and clean, re-grade, and stabilize the area.

References

Standard Specifications for Construction of Local Streets and Roads, California Department of Transportation (Caltrans), July 2002.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

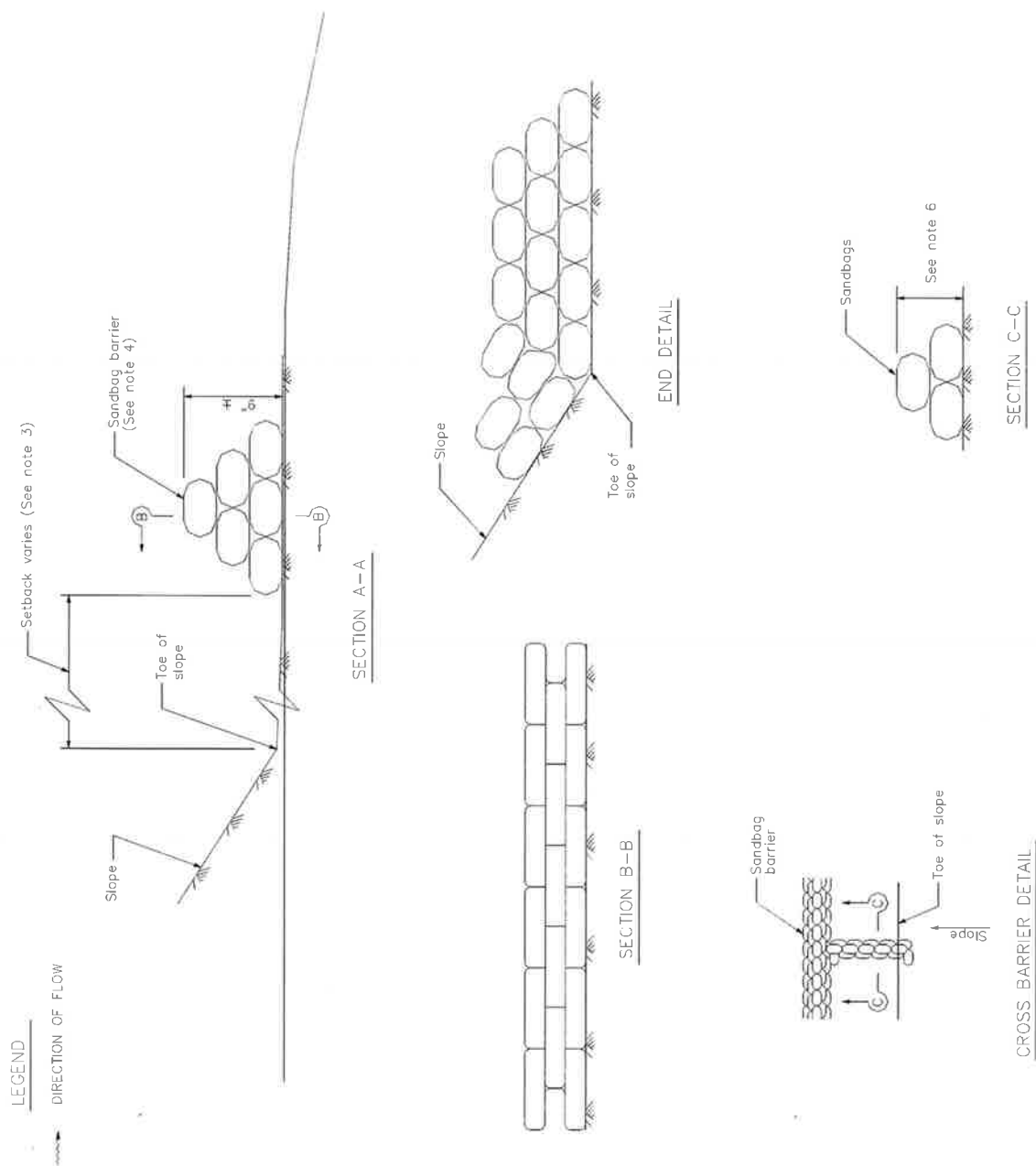
Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



SANDBAG BARRIER

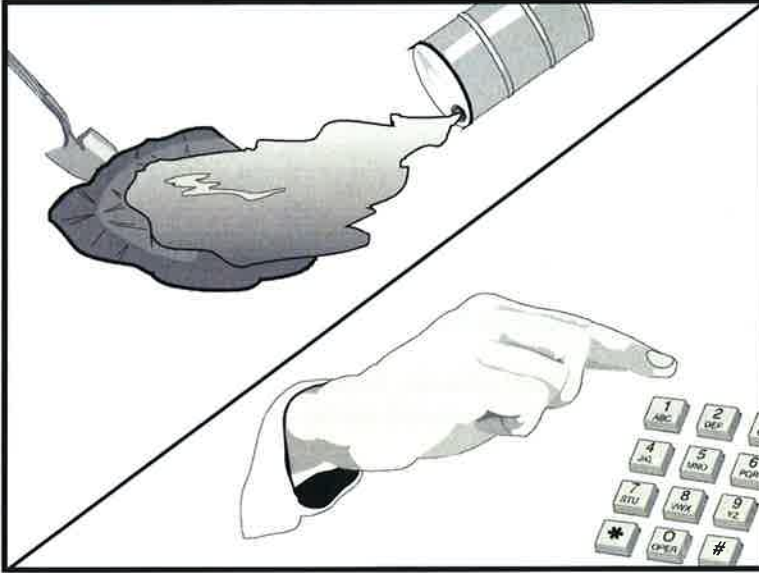
NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed $1/2$ the height of the linear barrier. In no case shall the reach length exceed 500'.
2. Place sandbags tightly.
3. Dimension may vary to fit field condition.
4. Sandbag barrier shall be a minimum of 3 bags high.
5. The end of the barrier shall be turned up slope.
6. Cross barriers shall be a min of $1/2$ and a max of $2/3$ the height of the linear barrier.
7. Sandbag rows and layers shall be staggered to eliminate gaps.



Spill Prevention and Control

WM-4



Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☒

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Targeted Constituents

Sediment	☒
Nutrients	☒
Trash	☒
Metals	☒
Bacteria	
Oil and Grease	☒
Organics	☒

Potential Alternatives

None

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- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- 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 should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn’t compromise clean up activities.
- Do not bury or wash spills with water.

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

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.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - Clean the contaminated area and 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.

- Spills should be cleaned up immediately:
 - Contain spread of the spill.
 - Notify the project foreman immediately.
 - 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.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
 - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
 - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
 - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
 - Notification should first be made by telephone and followed up with a written report.
 - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
 - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.