Los Peñasquitos Lagoon Sediment Total Maximum Daily Load (TMDL)

Resolution:	R9-2012-0033
Effective Date:	July 14, 2014
Impaired Water Body:	Los Peñasquitos Lagoon
Pollutant:	Sediment
Responsible Dischargers:	Dischargers within the Los Peñasquitos watershed area which is defined by the 906.10 HA (Miramar Reservoir) and the 906.20 HA (Poway) and includes the Los Peñasquitos Lagoon, Carroll Canyon Creek, Los Peñasquitos Creek, and Carmel Creek.
Required Actions:	Dischargers in compliance with the Industrial General Permit Order No. 2014-0057-DWQ (General Permit) meet the requirements of the Los Peñasquitos Lagoon Sediment TMDL R9-2012-0033. In addition to the monitoring requirements in section XI of the General Permit, Dischargers are required to provide an estimate of a representative flow rate from their facility during each wet season[1] for one Qualifying Storm Event (QSE). The Discharger shall submit the representative flow estimate as a PDF attachment to SMARTS entitled *Los Peñasquitos Lagoon Sediment TMDL Monitoring* annually on July 15. The Regional Water Board may require Dischargers to implement additional actions to reduce sediment discharges based on a site-specific analysis.
TMDL documents are available at: http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/los_penasquitos_lagoon.shtml	

Fact Sheet for Los Peñasquitos Lagoon Sediment TMDL

Background

The Los Peñasquitos Lagoon Sediment TMDL addresses the Clean Water Act section 303(d) impairment due to sedimentation in the Los Peñasquitos Lagoon (Lagoon). Habitat loss, reduced tidal mixing, and degraded salt marsh vegetation are some of the

[1] The wet season is October 1 through April 30

effects in the Lagoon from rapid sedimentation due to concentrated flow with intensified velocities or volumes. Increased flow velocities and volumes increase erosion rates which correlate to an increased sediment supply into the Lagoon. Impacts from increased sediment also create increased potential for flooding surrounding areas, increased turbidity in receiving waters, and constricted wildlife corridors. The greatest transport of sediment occurs during rainfall events.[2] During dry weather, the contribution of sediment loading from Dischargers is low because non-storm water discharges (NSWD) are either prohibited or authorized under strict permit circumstances.

The Los Peñasquitos Lagoon Sediment TMDL identifies the following responsible parties: Phase I Municipal Separate Storm Sewer System (MS4s), Phase II MS4s, Caltrans, general construction and industrial permit dischargers (Responsible Parties).[3]

TMDL Waste Load Allocation

The Los Peñasquitos Lagoon Sediment TMDL assigned the entire Waste Load Allocation (WLA) of 2,580 tons/wet season collectively to all identified Responsible Parties in the watershed.[4] Compliance with the final WLA requires a 67% load reduction of sediment from the watershed during wet weather. In order to show progress towards achieving the final WLA provided in Table 3, interim reductions to waste loads are necessary as provided in Table 2.

The Los Peñasquitos Sediment Lagoon TMDL states that all Responsible Parties, collectively and individually, are responsible for either reducing their sediment loads to the receiving waterbody or demonstrate that their discharges are not causing exceedances of the WLA.[5] The WLA applies year–round for all flow conditions and seasons and is applied equally to all sediment discharge sources in the Peñasquitos watershed. Dischargers whose point source discharges contribute to exceedance of the watershed WLA for sediment are required to reduce runoff discharges before it is discharged to the Los Peñasquitos Lagoon.

TMDL Requirements

The implementation actions applicable to industrial dischargers and the relevant compliance deadlines set forth in the Los Peñasquitos Lagoon Sediment TMDL are provided in Table 1. The Los Peñasquitos Lagoon Sediment TMDL requires all industrial dischargers enrolled in the General Permit to identify all sediment contributions from their facilities to the Peñasquitos watershed. Each industrial discharger's SWPPP must be updated by July 14, 2015 to include any additional BMPs, monitoring, or other measures needed to account for the site's potential to impact the receiving water body from discharges of sediment. Industrial dischargers are

[2] Resolution No. R9-2012-0033 Basin Plan Amendment, Attachment A, p. A-7
[3] Resolution No. R9-2012-0033, Finding 10
[4] Resolution No. R9-2012-0033, Finding 9
[5] Resolution No. R9-2012-0033, Finding 13

responsible for either reducing site sediment loads to the receiving water body or demonstrating that the site discharges are not causing exceedances of the water quality based effluent limitations in Table 2 (interim WQBELs) and Table 3 (final WQBEL). Industrial dischargers are also required to sample discharges for representative, or estimated, flow rate in addition to total suspended solids (TSS) to quantify contributions of sediment loads from their sites that cause or threaten to cause an exceedance of the effluent limitations in Table 2 and Table3.

Table 1: Compliance Dates

Implementation Actions	Date
Meet Interim Effluent Limitation #1 in Table 3	December 31, 2019
Meet Interim Effluent Limitation #2 in Table 3	December 31, 2023
Meet Interim Effluent Limitation #3 in Table 3	December 31, 2027
Meet Interim Effluent Limitation #4 in Table 3	December 31, 2029
Meet Final Effluent Limitation in Table 3	July 14, 2034

*Phase I MS4s, Phase II MS4s, Caltrans, and general construction and industrial permit dischargers are jointly responsible for achieving the interim and final effluent limitations.

Table 2: Interim Water Quality Based Effluent Limitations Expressed as a Wet Season Load in MS4 Discharges from the Watershed to Los Peñasquitos Lagoon

Constituent	Interim Effluent Limitations	
Sediment	Interim Effluent Limitation #1	6,691 tons/wet season
	Interim Effluent Limitation #2	5,663 tons/wet season
	Interim Effluent Limitation #3	4,636 tons/wet season
	Interim Effluent Limitation #4	3,608 tons/wet season

*Phase I MS4s, Phase II MS4s, Caltrans, and general construction and industrial permit dischargers are jointly responsible for achieving the interim and final effluent limitations.

Table 3: Final Water Quality Based Effluent Limitation Expressed as a Wet Season Load in MS4 Discharges from the Watershed to Los Peñasquitos Lagoon

Constituent	Final Effluent Limitation
Sediment	2,580 tons/wet season

*Phase I MS4s, Phase II MS4s, Caltrans, and general construction and industrial permit dischargers are jointly responsible for achieving the interim and final effluent limitations.

Industrial dischargers in the Peñasquitos watershed are assumed to be in compliance with the Los Peñasquitos Lagoon Sediment TMDL and their contribution to the watershed interim and final WQBEL if all of the following conditions are completed:

1. Enrollment in this General Permit; and
2. Inclusion of BMPs in the Discharger's SWPPP; and
3. Compliance with this General Permit; and
4. Collection of representative, or estimated flow monitoring.

Compliance with the General Permit satisfies compliance with the interim and final WQBEL because it is presumed that BMPs designed, constructed, and maintained in accordance with a SWPPP would deliver sediment loads consistent with water quality objectives and pollutant reductions set forth in the TMDL. This General Permit requires dischargers to take actions to control their risk of sediment discharges. All industrial dischargers shall identify all potential sediment contributions from their site (Section X.G), implement Best Management Practices (BMPs) to reduce sediment and erosion such that discharge from the site does not cause or contribute to an exceedance of the WQBELs in Table 2 and Table 3 (Section X.H.e), conduct visual observations (Section XI.A), and sample discharges for TSS (Section XI.B.6) as described in this General Permit. BMPs can include stabilizing loose soil sources and/or retaining storm water onsite to reducing erosion and concentrated flows and decrease the impacts from excessive and rapid sediment transport into the Lagoon from the Discharger facility.

Monitoring and Reporting

The Los Peñasquitos Lagoon Sediment TMDL requires all Responsible Parties to contribute information regarding the amount of sediment discharged from their facilities.[6] This monitoring must address, at a minimum, representative flow rates and TSS concentrations whenever long-term discharges[7] occur. The monitoring program set forth in section XI of the General Permit only partially meets these requirements because the General Permit does not require industrial dischargers to monitor for representative flow rates. Therefore, industrial dischargers must conduct additional monitoring to that required in section XI of the General Permit to be in compliance with the Los Peñasquitos Lagoon Sediment TMDL.

[6] Resolution No. R9-2012-0033, Technical Report, p. A-9

[7] The TMDL does not define the duration of a rainfall event that would result in a "long term discharge" that is required to be monitored. Based on the TMDL's findings and source identification, increased flow and sedimentation impact the lagoon primarily during wet weather rainfall events. The San Diego Water Board has determined that the definition of "a long term discharge" is equivalent to the General Permit's qualifying storm event (QSE) because a QSE is likely to result in the type of discharge that impacts the lagoon.

Representative flow rate can be determined by using one of the following methods: 1) flow meter or 2) the float method. The float method is a field calculated estimate in accordance with the US EPA's NPDES Storm Water Sampling Guidance Document[8] for estimating flow rates.[9] To conduct the float method, the Discharger determines the cross sectional area of the representative discharge by estimating the flow depth and flow width in feet. The flow path must be a minimum of five feet in length. For ponded or no flow, an industrial discharger shall record a flow rate of zero. The velocity[10] is estimated by measuring the time it takes the float (e.g. a floatable object, such as an orange peel or similar object), to float between point A and point B.[11] The flow rate shall be estimated for two 15 minute intervals.

The purpose of determining the flow rate is to calculate[12] the amount (i.e. load) of sediment being discharged from the site and informing an industrial discharger as to whether their discharge is in compliance with the watershed WQBEL in Table 2. Determination of the flow rate shall be conducted at an industrial discharger's site during the wet season (October 1 through April 30) during one qualifying storm event (QSE). Regardless of the method used to determine a representative flow rate, flow rates shall be completed concurrently with the General Permit's required TSS sampling.

The Los Peñasquitos Lagoon Sediment TMDL also requires Responsible Parties to contribute information regarding BMP implementation. Visual observation monitoring conducted in compliance with section XI of this General Permit partially satisfies this requirement. During dry weather days, monthly visual observations shall be conducted in accordance with section XI.A of the General Permit. Monthly visual observations by Dischargers would identify unauthorized non-storm water discharges (NSWDS), potential sources of industrial pollutants, BMPs maintenance conditions, and authorized NSWDS. During wet weather sampling events, visual observations conducted in compliance with section XI.A must include identifying the presence of activities or materials that can contribute to sediment loads at all discharge points from an industrial discharger's site. Once identified via visual observations, it is expected that an industrial discharger either minimizes or eliminates the presence of activities or materials that can contribute to sediment loading in discharges from their industrial site.

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[8] US EPA. NPDES Storm Water Sampling Guidance Document, EPA 833-8-92-001, July 1992, pp.49-50, sections 3.2.2 - 3.2.4, Estimating Total Flow Volumes for the Sampled Rain Event, exhibits 3-8,3-9, http://www3.epa.gov/npdes/pubs/owm0093.pdf, Estimating Flow Rates – Float Method

[9] Flow rate (cfs) = velocity (ft/sec) x Area (sf); cfs = cubic feet per second; sf = square feet; Area = flow depth (ft) by flow width (ft).

[10] Velocity = length from point A to point B/time of travel

[11] Example: flow length = 5 feet; time of travel from point A to point B = 30 seconds. Flow depth is equal to 0.5 feet. Flow width = 1 foot. V= 5 feet/30 seconds = 0.17 ft/sec. Area=0.5 ft X 1.0 ft = .5 sf. Flow rate = Q = 0.17 ft/sec x 0.5 sf = 0.085 cfs

[12] Load, or mass of a pollutant, is calculated by multiplying flow (Q) cfs x pollutant concentration (mg/L); US EPA NPDES Permit Writer's Manual, pp. 6.24 -6.25

Industrial dischargers shall report results of all required monitoring annually as part of their Annual Report. Specifically, flow and TSS data shall be reported as a PDF attachment to SMARTS with the Annual Report entitled *Los Peñasquitos Lagoon Sediment TMDL Monitoring*. Pursuant to section XVI of this General Permit, Annual Reports are due on or before July 15. Submittal of the General Permit Annual Reports meets the TMDL requirement to inform the Phase I MS4s in the Los Peñasquitos Watershed Management Area their efforts to achieve compliance with the watershed WLA and support restoration of the Lagoon salt marsh.

The Regional Water Boards retain the authority to require industrial dischargers to revise their SWPPPs, ERA Reports, or monitoring programs as well as to direct a, industrial discharger to obtain an individual NPDES permit if additional controls are necessary.

Watershed Coordination

Phase I MS4s in the Los Peñasquitos Lagoon Sediment TMDL are implementing an adaptive management approach to improvement water quality for the Peñasquitos Watershed Management Area in the Los Peñasquitos Water Quality Improvement Plan. Coordinated efforts by all Responsible Parties will accelerate the sediment waste load reductions required in the Los Peñasquitos Lagoon Sediment TMDL and achieve the ultimate goal of improving water quality as soon as possible. Industrial dischargers are encouraged to coordinate with Phase I MS4s and other Responsible Parties to meet the TMDL watershed WLA requirements in the Los Peñasquitos TMDL using an adaptive management approach. Dischargers located within County of San Diego, City of San Diego, City of Del Mar, and the City of Poway, are encouraged to contact that jurisdiction's Storm Water Program Manager to collaborate.