MONITORING PLAN

SUMMARY OF RECOMMENDATIONS FOR SAMPLING OF BACTERIAL INDICATORS AT THE B STREET AND G STREET PIERS

November 8, 2005

Prepared for:

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1.0 OVERVIEW/PURPOSE OF DOCUMENT

1.1 Need for Confirmation of Listing

The Port of San Diego (Port) is in the process of responding to the San Diego Regional Water Quality Control Board's (RWQCB) intent to develop Total Maximum Daily Loads (TMDLs) for two sites along San Diego Bay. The sites include the B Street pier (Cruise Ship Terminal) and the G Street pier. The sites have been listed on the RWQCB's 1998 and 2002 Clean Water Act Section 303(d) list for bacterial indicators. However, the Port has determined that the listings were based on very limited data collected nearly 10 years ago, and may not be appropriate. Recently, the State Water Resources Control Board (SWRCB) adopted its *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Policy), which presents specific criteria for listing as well as delisting sites. The policy includes guidelines for data to be used for purposes of listing and delisting, including the size of the data sets, number of allowable exceedances, and guidance regarding the spatial and temporal distribution of samples.

A key element in the development of a TMDL is to review the existing data that was used to establish the listing and determine the appropriateness of the listing. Specifically, according to the SWRCB, Step 2 in developing a TMDL is to "Assess water body: In this step, pollution sources and amounts, or "loads," are identified for various times of the year. Then the overall effect of these loads on the water body is determined." Since existing data to assess the B Street and G Street pier water bodies are very limited, this confirms the need for additional monitoring to better evaluate the appropriateness of listing the two sites. The purpose of this document is to outline a proactive sampling strategy and protocols aimed at collecting representative, defensible data on bacterial indicators at the two sites of concern, with the specific objective of delisting the sites, if data can support delisting. The Port hereby encourages the RWQCB to consider this plan as a proactive step utilizing approved California policy guidelines to collect and evaluate data prior to establishing TMDLs for the B Street and G Street piers.

2.0 SUMMARY OF SITES

2.1 Locations of Listed Areas

The two sites are located on the eastern shore of San Diego Bay, north of the Coronado Bridge and immediately west of downtown San Diego (refer to inset on Figure 1). Both sites include pier areas and harbor areas, and are shown in detail on Figure 1. Municipal storm drains enter the harbor at both locations. The storm drains extend upstream as far as the San Diego zoo and drain a large portion of the downtown area.

B Street Pier

The listed site consists of 0.4 miles of shoreline located adjacent to and including the Cruise Ship Terminal. There is no public access to the water. There is a municipal storm drain that discharges beneath the pier. Other local discharges include drainage from the parking areas along the Cruise Ship pier itself. There are several drain inlets present in the parking lot. The drain inlet located at the far (west) end of the pier contains a trash rack and oil absorbent material.

G Street Pier

The G Street pier area is used as a harborage for fishing boats and yachts. The pier is specifically used to unload fishing boats that bring in their catch daily, and includes a crane for this purpose. The shoreline in this area is covered with rip-rap. There is no public access to the water. There are several storm drain outfalls that discharge into the bay through the rip-rap. The impairment area is within the boat basin contained within 0.4 miles of shoreline. Although not observed during the site visit, marine mammals (seals) are known to inhabit the marina area. However, numerous birds (e.g., pigeons and sea gulls) have been observed in the area. It has been reported that numerous birds are present at the times fishing boats are unloaded.

2.2 Site Histories and Beneficial Uses

The Fact Sheet for the 2002 Section 303(d) list describes the B Street and G Street pier areas as being impaired due to Bacterial Indicators (in the 1998 list, it was listed as impaired for "high coliform count"). Beneficial uses include marine habitat (MAR), wildlife habitat (WILD), preservation of biological habitats of special significance (BIOL), estuarine habitat (EST), rare, threatened, or endangered species (RARE),

migration of aquatic organisms (MIGR), and shellfish harvesting (SHELL). In addition, because all of San Diego Bay is listed as having water contact recreation (REC-1) as a beneficial use, exceedances of bacterial indicators is potentially associated with human health risk. However, the B Street and G Street Pier areas are not recreational beaches, and water contact recreation does not commonly occur. The RWQCB *Basin Plan* includes specific EPA criteria regarding infrequently used water bodies (i.e., water bodies like the pier areas which are not used as beaches). The EPA criteria provide for a level of protection based on the frequency of usage of a given contact recreation area and include higher concentrations of *E.coli* and enterococcus for protection of beneficial uses in those areas (Basin Plan, page 3-6).

The Fact Sheet notes that supporting data were not available to justify the listing – in other words, none of the following information was available at the time of the listing:

Data quality assessment. Extent to which data quality requirements met.
Linkage between measurement endpoint and beneficial use or standard
Utility of measure for judging if standards or uses are not attained
Water body-specific information
Data used to assess water quality
Spatial representation
Temporal representation
Data type
Use of standard method
Potential source(s) of pollutant
Alternative enforceable program

The Fact Sheet further notes that "Bacterial Indicators" implies impairment is due to fecal coliform, total coliform, enterococci or a combination of any of the three.

The Port has met with RWQCB staff to determine what data were actually used to support the listings. Ms. Lesley Dobalian provided copies of maps indicating stations locations that had been sampled between May 16 and June 7, 1996. Stations no. 22 and 23 were located at the G Street and B Street piers, respectively. These sites were sampled by the County Department of Environmental Health (DEH) 5 times during that period and were analyzed for total and fecal coliform. Samples analyzed during this period did not exceed standards for total or fecal coliform. However, at this time, neither the RWQCB nor the County DEH have the actual data from these sampling events. Therefore, the listings appear to have been based on elevated fecal coliform levels in samples collected in 1997. The source of fecal coliform at this time was traced to two improper cross connections between the sewer and storm drain systems. These cross-connections were eliminated in summer 1997.

2.3 Constraints to Sampling

Both the B Street and G Street pier areas are located on the shore of San Diego Bay. There is high vessel activity in the area, and access to shoreline via boat is dangerous or

impossible. This is because the physical shoreline at the B Street pier is underneath the pier. At the G Street pier, the shoreline is lined with rip-rap, and the water adjacent to the shoreline is too shallow to accommodate a boat. Therefore, sampling will best be performed from the shoreline, using a long pole to which a sampling bottle is attached.

3.0 MONITORING PLAN

The following sections describe the Port's recommended approach to conducting monitoring for bacterial indicators at the B Street and G Street piers. This sampling strategy was developed in accordance with the SWRCB's *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Policy).

3.1 Site Selection/Monitoring Locations

Both the B Street and G Street pier locations will be monitored in order to create a defensible data set that meets the spatial and temporal distribution stated in the Policy in order to evaluate the potential for delisting. Section 4.3 of the Policy (Table 4.2) lists the maximum number of measured exceedances allowed to remove a water segment from the Section 303(d) list for conventional or other pollutants. The minimum sample size is 26 to 30, at which point the recommendation is to delist if the number of exceedances is less than or equal to 4. The Policy provides details regarding data quality assessment to ensure a representative data set. For water body-specific data, the Policy states that the data must be measured at one or more sites within the actual water body. Sampling must take into consideration environmental conditions that could influence the results (e.g., seasonality, storm events, land use practices). The samples must also be spatially and temporally representative: collected at least 200 meters apart, and collected over a minimum of 2 seasons.

To address these criteria, the Port proposes the following sampling plan and protocols.

3.2 Sampling Plan and Protocols

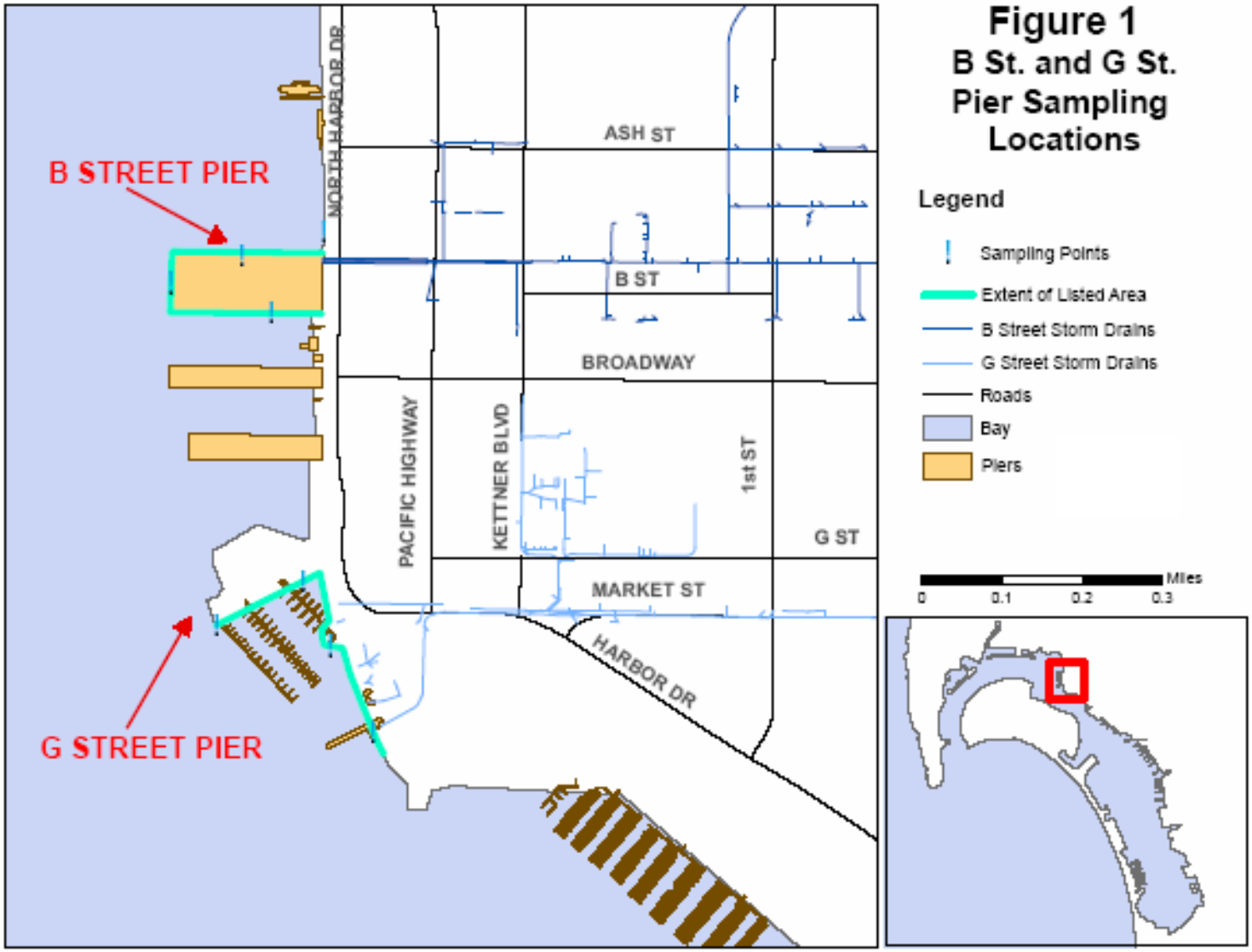
<u>B Street Pier</u>

As shown in Figure 1, the listing for the B Street Pier extends completely around the Cruise Ship Terminal, on all three sides of the pier. The Port proposes to collect samples at four locations around the pier, spaced at intervals of approximately 200 meters. Samples will be collected from the water surface (top 3-4 inches) from the pier using a sterile jar attached with a Velcro strap to the end of an extension pole. Samples shall be analyzed by an ELAP-certified analytical laboratory for total coliform, fecal coliform, and enterococcus. Samples shall be collected during the first week of the month over a period of 8 months (3 seasons), from December 2005 through July 2006. This sampling design shall result in a total of 32 samples. Following receipt of all analyses, the Port

shall summarize the results and compare them to the bacteria water quality objectives for "Infrequently Used" water bodies as described on page 3-6 of the San Diego RWQCB *Basin Plan* (since these sites are not beaches, and access to the water is nearly impossible). According to Table 4.2 of the SWRCB Policy, this sample size (31-36 samples) may support delisting if the number of exceedances in the data set is less than or equal to 5. If the sampling data meet the delisting criteria, it is the Port's intent to proceed with a request to delist this site.

G Street Pier

As shown in Figure 1, the listing for the G Street Pier runs along the southern boundary of the pier, then south along the yacht basin. The Port proposes to collect samples at four locations along the listed shoreline, spaced at intervals of approximately 200 meters. Samples will be collected from the water surface (top 3-4 inches) from the top of the rip-rap lining the shoreline using a sterile jar attached with a Velcro strap to the end of an extension pole. Samples shall be analyzed by an ELAP-certified analytical laboratory for total coliform, fecal coliform, and enterococcus. Samples shall be collected during the first week of the month over a period of 8 months (3 seasons), from December 2005 through July 2006. This sampling design shall result in a total of 32 samples. Following receipt of all analyses, the Port shall summarize the results and compare them to the bacteria water quality objectives for "Infrequently Used" water bodies as described on page 3-6 of the the San Diego RWQCB *Basin Plan* (since these sites are not beaches, and access to the water is nearly impossible). According to Table 4.2 of the SWRCB Policy, this sample size (31-36 samples) may support delisting if the number of exceedances in the data set is less than or equal to 5. If the sampling data meet the delisting criteria, it is the Port's intent to proceed with a request to delist this site.


B STREET PIER
G STREET PIER
NORTH HARBOR DR
ASH ST
B ST
BROADWAY
PACIFIC HIGHWAY
KETTNER BLVD
1st ST
G ST
MARKET ST
HARBOR DR
Figure 1
B St. and G St.
Pier Sampling
Locations
Legend
Sampling Points
Extent of Listed Area
B Street Storm Drains
G Street Storm Drains
Roads
Bay
Piers
Miles
0
0.1
0.2
0.3