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The Port of
LONG BEACH
The Green Port

April 29, 2011

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
101 I Street, 24th Floor
Sacramento, CA 95814

Subject: Port of Long Beach Comments on the Draft National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activities

Dear Ms. Townsend and Members of the Board:

The Port of Long Beach (Port) appreciates the opportunity to provide comments regarding the reissuance of the current Draft National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activities, Water Quality Order No. 97-03-DWQ, Industrial Stormwater General Permit (IGP). The Port appreciates the efforts put forth by State Water Resources Control Board (SWRCB) staff and looks forward to providing additional input on future drafts of the IGP. The Port is committed to the protection and improvement of harbor waters, as exemplified when the Port, working with Port of Los Angeles, the Los Angeles Regional Water Quality Control Board, EPA, and other stakeholders adopted the Water Resources Action Plan (WRAP). This voluntary, proactive action taken by both ports reinforced existing programs and put in motion many additional programs, best management practices (BMPs), and measures that will be needed to meet many of the requirements of the reissued IGP when adopted.

There are a variety of unique compliance and engineering challenges associated with industrial operations within a port complex, particularly related to the relative size and impervious nature of marine terminals. The Port currently manages the entire Port property under a single WDID Number, and includes tenants as co-permittees. Our comments focus on the key issues that we believe will have significant negative impacts on the Port and our tenants, without a clear linkage to what receiving water benefits, if any, will be obtained.

The Port would also like to emphasize that it is difficult to fully comment on the draft permit at this time because there are several important concepts that have not been fully developed by SWRCB staff, including the rationale behind the Numeric Action Levels (NALs)/Numeric Effluent Limits (NELs) and the Green Stormwater program. We understand the SWRCB would like to work cooperatively through a stakeholder process

to further develop incomplete portions of the Draft IGP. The Port agrees with the expanded use of the stakeholder process during development of the next Draft IGP, and looks forward to participating in that process.

The Port has also provided input and has been involved in the development, with the California Stormwater Quality Association's (CASQA's) comments, on the draft IGP. The Port concurs with CASQA's position. A summary of the Port's comments is provided in the attached table, with additional narrative provided below for areas of particular concern to the Port.

A. Inappropriate use of U.S. EPA Benchmark Values as numeric action levels and numeric effluent limits.

The draft IGP's use of U.S. EPA benchmarks is inconsistent with how U.S. EPA intended these values to be used. The current draft IGP uses the benchmark values as effluent limits; however, the EPA has clearly stated in the past that benchmarks are not effluent limitations. For example, in its 2008 Multi-Sector General Permit (Part 6.2.1), the EPA confirms:

> *The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your control measures and to assist you in knowing when additional corrective action(s) may be necessary to comply with the effluent limitations in Part 2.*

In recent workshops, SWRCB staff have also indicated they would prefer to develop California-specific or industry specific NALs, but there was not sufficient time to do so. Lack of time however is not an adequate reason to establish inappropriate limits that can have significant economic effects to the regulated industry without a clearly established linkage that the desired environmental benefits will be achieved. Therefore, in lieu of adopting NALs that are not appropriate for California, the SWRCB should take the time to properly develop NALs, consistent with the recommendations of the Blue Ribbon Panel and CASQA's comments on the NAL development process. Additional detailed comments on the subject are provided in the attached table.

B. It has not been demonstrated that EPA Benchmarks can be consistently achieved, even with installation of the costly best stormwater treatment system technologies available.

The Port is concerned that the best available storm water treatment technologies currently available on the market cannot consistently meet many of the proposed NAL values, particularly for metals and specific conductance. There are very few field studies on stormwater treatment technologies suitable for industrial applications, and of those studies, we have not identified a technology that has been installed and tested that can consistently meet NALs proposed for metals in the Draft IGP. The Port commissioned an analysis of potential approaches and costs to implement treatment control systems throughout the Port to better understand the potential economic implications associated with large scale treatment of storm water. The estimated cost to install treatment systems throughout the Port to potentially reduce metals (specifically copper and zinc) to the levels proposed in the Draft IGP would be approximately **$447,000,000** over the 5-year permit term. This estimate is based on a 10-year 24-hour design storm as specified in the draft IGP and includes the capital costs for storage tanks to capture and regulate flow, pretreatment separators, enhanced media filtration systems, and resin polishing units. A further breakdown of estimated treatment system costs is provided in Attachment 1. As stated above, even with the treatment train approach assumed in our analysis of potential costs, there is no guarantee that such a system would achieve the proposed NALs specified in the draft IGP on a consistent basis. Therefore, even if the Port and its tenants were able to make the significant capital investment identified above, which would be a substantial and potentially irreparable economic burden, that investment may not be adequate to meet the proposed limits.

C. The 10-year 24-hour Compliance Storm Event (CSE) and Design Storm Event (DSE) is inconsistent with current MS4 design standards in most MS4 NPDES permits, and is inconsistent with the current guidance.

The 10-year 24-hour event designated for the CSE and DSE is a very large event, ranging from 2.5 to 4.5 inches of rainfall in most areas. The Port agrees with CASQA's recommendation to use the 2-year 24-hour event consistent with the Effluent Limitation Guidelines (ELGs) for the Construction and Development Industry.

Establishing the 10-year 24-hour event for use as the DSE for treatment control is also problematic and inconsistent with the current design standards in most communities under MS4 permits and is inconsistent with current guidance. The capacity of treatment control BMPs should be based on the most frequent storm events and not much larger events with a low probability of occurrence.

D. Greater consideration must be given to background conditions, run-on, and atmospheric deposition.

The permit must provide flexibility for industrial dischargers when evaluating potential causes for elevated concentrations or exceedances of proposed NALs. Flexibility should include the ability to provide data showing outside influences such as natural background sources, building materials, and/or atmospheric deposition when evaluating storm water discharge data. If the discharger can clearly show (through sound science) that an NAL exceedance is influenced by non-industrial or off-site sources, the discharger should not be held accountable for the consequences associated with the exceedance and ensuing corrective action requirements. Other industrial storm water permits include provisions to account for these background contributions, including U.S. EPA's Multi Section General Permit for Industrial Activities (MSGP) and the Industrial General Permit issued by the state of Oregon. One example of background contribution at the Port is the presence of salt water residue from ocean transport and sea spray. The salt residue has a significant impact on the specific conductance of the stormwater runoff. The Port receives contribution from, and then ultimately discharges directly to, a marine environment where conductivity is nearly **27,000%** higher than the proposed NAL for specific conductivity in the Draft IGP. The current Draft IGP would ultimately force the Port to spend millions of dollars to address an issue that is clearly background and not controllable. In addition to specific conductance, the Port is concerned about atmospheric deposition from metals from the highly urbanized Los Angeles Basin.

The Port strongly supports "true source control" efforts similar to the recent brake pad reformulation legislation that will ultimately reduce the amount of copper used in brake pads and thus reduce the amount of copper in the atmosphere and receiving waters. In one of the SWRCB workshops on the draft IGP, several industrial dischargers also expressed concern about atmospheric deposition of zinc, a ubiquitous metal in urban environments. The Port encourages the SWRCB to address ubiquitous pollutants like copper and zinc through true source control rather than imposing expensive treatment control requirements on industry that may not be effective on their own.

E. Group monitoring should not be eliminated, as there is recognized value in watershed-based regional monitoring.

The SWRCB should promote flexibility to establish monitoring groups, particularly those established for a particular watershed. EPA commissioned the National Academy of Sciences to conduct a comprehensive study of their stormwater regulatory program, including assessing the design of the stormwater permitting

program implemented under the Clean Water Act. The study found that the course of action most likely to check and reverse degradation of the nation's aquatic resources would be to base all stormwater and other wastewater discharge permits on watershed boundaries instead of political boundaries. The Draft IGP bases permitting on the traditional end-of-pipe approach and not on a watershed framework proposed by the NAS report. The Port strongly recommends that the IGP provide flexibility for facilities/operations such as the Port to adopt a watershed-based monitoring program which would allow the Port to take a holistic approach to management and monitoring of our stormwater, rather than a piecemeal approach based on artificial political boundaries and fence lines. The Port currently conducts a regional watershed-based monitoring program which has established a reliable and consistent database used to characterize stormwater effluent throughout the harbor district.

F. The increased monitoring and SWPPP requirements in the Draft IGP represent a significantly increased compliance burden for industrial dischargers.

The economic impacts of the proposed IGP are significant, especially for a large, complex site similar to the Port. A significant change between the existing IGP and the Draft IGP is the increase in required inspections. For a typical Port terminal that operates 365 days a year, the total number of inspections required annually will range between 350 and 400. This represents an increase of more than **2000%** compared with the number of inspections required by the 1997 IGP. To better understand the total economic impact of the proposed Draft IGP, the Port estimated the costs associated with IGP compliance for a single, representative, existing container terminal operation within the Port. The total estimated costs to perform the required inspections, collect and analyze storm water samples, update compliance documents, and to train facility staff during the first year of the Draft IGP are approximately **$195,000.** This cost represents the impact on just one terminal at the Port for the first year of the IGP. When expanded to the entire Port (49 operating facilities), approximate costs for permit compliance during the first year are estimated to be approaching **$10,000,000.** This is assuming a baseline corrective action level, however if corrective action triggers are met, these costs increase as monitoring and treatment requirements increase.

If required to treat stormwater to EPA Benchmark levels, approximate compliance costs throughout the Port have been estimated to increase to over **$360,000,000** for the initial year and approach **$500,000,000** over the 5-year permit term. This estimation does not include increased monitoring requirements (as these are dependent on the frequency of rain events), issuance of mandatory minimum penalties, or third party lawsuits as

corrective action levels are exceeded. Assumptions utilized to develop these costs are included in Attachment 1.

It is critical that compliance with the reissued IGP be technically, logistically, and economically feasible, and permit requirements should correlate directly to receiving water quality benefits. At this time the Inner and Outer Harbors at the Port of Long Beach are free of water column impairments, and accordingly the Port feels that expenditures of this magnitude to comply with this Draft IGP as currently written would be excessive and unwarranted. In addition, the many economic impacts associated with this Draft IGP should be thoroughly analyzed and carefully considered, given the fragile economic status of the region and the State.

Again, the Port appreciates the opportunity to provide comments on the Draft IGP and we look forward to your response to these comments, as well as those submitted by other stakeholders.

Sincerely,

Richard D. Cameron
Director of Environmental Planning

JBV:s

Enclosures/Attachments

cc: Sam Unger, LARWQCB

Comments on 2011 Draft Industrial Activities Storm Water General Permit

Port of Long Beach

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1	SWPPP Team	Section VIII.D.2.a (pg 18)	The nature of operations at the Port terminals makes designation of specific individuals infeasible. Constantly rotating staff precludes having an accurate SWPPP on-site at all times. The Port recommends the language in section D.2.a be revised as follows: *Edit section as follows:* a. ~~The names and titles of "s~~ "Specific individuals or the positions within the facility organization~~"~~ (team members) that assist the QSD/QSP to implement the SWPPP and conducting all monitoring requirements required in Section IX.
2	Sampling Feasability	Section IX.C.1.	Port container terminals are large facilities with complex and varied drainage systems that don't always have well defined discharge points. Many of the older terminals were designed to sheet flow into the receiving water making identification of drainage areas and sample collection difficult. Many outfalls are submerged due to tidal action or inaccesible without the use of specialized water craft capable of accessing outfalls underlying wharf structures. These factors make sampling and visual observations difficult and oftentimes infeasible. The Port recommends the SWRCB retain language from the 1997 permit that allows for reduction of sampling locations if the discharge is expected to be significantly similar. For large sites, like the Port, sampling every outfall is technically and ecomonically infeasible.
3	Sector-specific NALs, phased as quality data is available	Section X (pgs 32 and 24)	NALs should be technology-based and rely on sector- or group-specific data that would be augmented during the permit cycle. This process would be similar for other industries. This approach is consistent with the recommended approach of the Blue Ribbon Panel report.

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4	Establishing NALs based on technology, acknowledging that BAT/BCT-EA differs for different sectors	Section X (pgs 32 and 24)	The baseline technology will differ among sectors. For example, the varying drainage patterns in some industrial sectors would not allow permanent placement of treatment BMPs that less dynamic operations allow. Also, existing facilities may have limited right-of-way that precludes the use of some treatment technologies. Allowing for different NALs for existing and new facilities is consistent with the Blue Ribbon Panel report.
5	NALs/Corrective Action/Triggers	Section XVII.E (pg 42)	Large-scale non-attainment of inappropriately-low NALs (based on EPA benchmarks rather than technologies) will place a tremendous burden of regulatory staff and does not lead to a prioritization of gross polluters. This could place unfair and unnecessary attention on dischargers that are responsibly managing stormwater discharges.
6	Corrective Action	Section XVII.2.b (pg 39)	Exceedance of any applicable NAL, if any are adopted, should result in a site-specific assessment of BMP practices to determine if corrective action is necessary and if so, what the corrective action should be (as in Section XVII.B.2.b). When NALs are consistently exceeded after follow-up action by the discharger, allow for a Regional Board to verify that BCT/BAT-EA is being properly implemented and allow for non-attainment of NALs such that subsequent triggers do not elevate the site to higher Levels of Corrective Action. When NALs are adopted, the permit should state that an exceedance of a NAL is not a permit violation as long as the discharger is engaged in the corrective action process.
7	Invalid Numeric Effluent Limits	XVII.D.1 (pg 41) Fact Sheet Section K (pg 29)	The draft Industrial General Permit and draft Fact Sheet fail to establish the legally required basis for imposing numeric technology-based effluent limits. The draft Industrial General Permit and related Fact Sheet are devoid of any evidence or analysis to support the adopting NELs as technology-based numeric effluent limitations. The State Water Board has not set forth specific data, other technical basis or legal authority imposing numeric TBELs in this permit, nor has it specifically considered any of the required factors set forth in CWA Section 304 or implementing regulations pursuant to 40 C.F.R. 122.44(a)(1) and 125.3. In addition, US EPA has not promulgated comparable effluent limitations guidelines. The draft Industrial General Permit and draft Fact Sheet therefore fail to establish

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			the legally required basis for imposing NELs. Properly developed TBELs establish performance-based levels of pollutant controls to achieve the applicable technology-based standards (Best Conventional Technology for conventional pollutants (BCT), Best Available Technology Economically Achievable (BAT-EA)) established by the CWA and provide equity among dischargers within industry categories or sub-categories. TBELs aim to prevent pollution by requiring a minimum level of effluent quality that is *attainable* using *demonstrated technologies* for reducing discharges of pollutants. The NPDES Permit Writers' Manual describes a detailed, nine-step process that the permit writer must employ to develop TBELs from effluent guidelines. The "Suspension of Numeric Effluent Limitation" concept is ineffective . In any event, "off ramps" cannot remedy inappropriate NELs or NALs.
8	Numeric Effluent Limits have not been developed using Best Professional Judgment as stated	NA	The draft Industrial General Permit indicates it is establishing TBELs through the use of best professional judgment (BPJ). Use of BPJ is allowed on a case-by-case basis pursuant to CWA section 402(a)(1), where EPA-promulgated effluent limitations are inapplicable. 40 C.F.R. 125.3(c)(2). The permit writer must apply the factors listed in 40 C.F.R. 125.3(d). Depending upon whether the applicable standard is BPT, BCT or BAT, 40 C.F.R. 125.3(d) requires the consideration of such items as cost compared to pollutant reduction, the age of equipment and facilities involved, the process employed, engineering aspects, process changes and non-water quality environmental impacts. In addition, 40 C.F.R. 125.(c)(2) requires the permit writer to consider the appropriate technology for the category or class of point sources of which the applicant is a member and any unique factors relating to the applicant. The Draft permit does not follow legally required process to develop TBELs on a case-by-case basis using best professional judgment. The draft Industrial General Permit does not attempt to address the required factors that must be considered

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			in setting TBELs. Therefore, implementation of the TBELs as proposed would represent an abuse of discretion.
9	EPA Benchmarks are not Appropriate Numeric Effluent Limits		EPA could not more clearly state that benchmarks are not effluent limitations. In its 2008 Multi-Sector General Permit (Part 6.2.1), EPA confirms: *The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your control measures and to assist you in knowing when additional corrective action(s) may be necessary to comply with the effluent limitations in Part 2.* In light of EPA's unequivocal position, its benchmarks have never and cannot now legally serve as NELs. Finding 42 in the draft Industrial General Permit is particularly objectionable, asserting that "[t]he State Board finds that the USEPA benchmarks serve as an appropriate set of technology based effluent limitations that demonstrate compliance with BAT/BCT." Such an unsupported statement cannot substitute for an appropriate effluent limitations development process, and is totally inconsistent with EPA's clear regulatory conclusions and intent regarding the benchmarks.
10	Background as Factor in Applying NALs/NELs		Another factor to be considered is the variability in stormwater quality caused by atmospheric pollution, dry deposition, and storm water run-on, all of which are beyond the control of individual facilities and make it difficult to distinguish between background stormwater quality and anthropogenic effects. The differences in measured stormwater quality also may result from changing business conditions that affect a facility's operational hours, the amount and type of materials stored and handled, the volume of products produced, and the amount of loading and unloading that occurs on site. To that end, EPA's MSGP recognized a "background" pollutant allowance system to use with the benchmark monitoring and related technology-based controls to ensure that individual facilities were only required to control those "discharges associated with industrial activity" at the site, as intended by Congress when it added CWA Section 402(p) to

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			the Act.
11	Numeric Effluent Limits are infeasible		In 2006, the Blue Ribbon Panel concluded that the establishment of numeric limits for industrial sites required a reliable database describing current emissions by industry types or categories, and performance of existing BMPs. The Blue Ribbon Panel concluded that the current industrial permit had not produced such a database. In 2008, EPA similarly concluded in the MSGP that it was infeasible to establish numeric effluent limits because "variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers" as required by 40 C.F.R. 122.44(k)(3). EPA reached this conclusion after a detailed review of monitoring data, after which EPA was unable to determine whether benchmark value exceedances provide any useful indicators of control measure inadequacies or potential water quality problems. (MSGP Fact Sheet, p. 96.) Through its NPDES permit regulations, EPA has interpreted the CWA to allow BMPs to take the place of numeric effluent limitations to control or abate the discharge of pollutants when: (1) "[a]uthorized under section 402(p) of the CWA for the control of stormwater discharges"; or (2) "[n]umeric effluent limitations are infeasible." 40 C.F.R. § 122.44(k). EPA cited that regulation and the ample case support for non-numeric limits when finding numeric limits infeasible and choosing to include only non-numeric limits in the 2008 MSGP.
12	NELs not Appropriate in this General Permit		Development of TBELs on a case-by-case basis using BPJ requirements a very detailed analysis of the operations of the applicant, the available technology and the specific industrial category involved. Such a case-by-case analysis is difficult enough in an individual permit; it is impossible to do in a general permit that has application to a wide variety of industries. (See 40 C.F.R. § 125.3(d) (including such factors as age of equipment.
13	Compliance Storm Event and Design Storm Event	Sections V.E (pg 15)	*Edit section as follows:*

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			This General Permit establishes a ~~10-year, 24-hour~~ 2-year, 24-hour (expressed in inches of rainfall) Compliance Storm Event ~~for Total Suspended Solids. In addition, all~~ Treatment BMPs ~~for any other pollutants~~ shall be designed to meet post construction stormwater requirements of the local MS4 permit or the Construction General Permit. This requirement shall not apply to existing treatment controls unless they are reconstructed and trigger the local MS4 or Construction General Permit requirements. ~~for no less than a 10-year, 24-hour storm event~~. Storm event (expressed in inches of rainfall) can be determined by using these maps: ~~http://www.wrcc.dri.edu/pcpnfreq/nca10y24.gif~~ ~~http://www.wrcc.dri.edu/pcpnfreq/sca10y24.gif~~ http://www.wrcc.dri.edu/pcpnfreq/nca2y6.gif http://www.wrcc.dri.edu/pcpnfreq/sca2y6.gif
14	Erosion and Sediment Control Design	Section VIII.C.3 (pg 18)	*Edit section as follows:* Erosion and sediment BMPs to control the discharge of sediment shall be designed in accordance with standard industry practice as represented in a POLB or CalTrans BMP Fact Sheet. ~~for no less than a 10-year, 24-hour (expressed in inches of rainfall) Compliance Storm Event. In addition, all treatment BMPs for any other pollutants shall be designed for no less than a 10-year, 24-hour storm event.~~
15	Atmospheric Deposition	Finding 46 (pg 7)	Finding 46 as written is confusing; it could be interpreted to mean that only atmospheric deposition from natural disasters would be considered. This is inappropriate in areas of the state with significant air pollution problems. *Finding 46 should be modified to address background/offsite sources. We suggest the following language to replace the existing Finding language:* "46. Pollutants in stormwater discharges caused by background conditions, atmospheric deposition, run-on, or by any natural disaster, including forest fires, do not apply toward any NAL corrective action trigger determinations."

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16	Good Housekeeping - Tracking	Section VIII.H.1.a.ii (pg 23)	*Edit section as follows:* "Implement BMPs to reduce or prevent material tracking at the end of each working day and implement BMPs on-site in preparation of a forecasted storm event".
17	Good Housekeeping - Material Storage	Section VIII.H.1.a.iv (pg 23)	Cover all stored industrial materials, when not in use for at least 14 days, that can be readily mobilized by contact with storm water;
18	Good Housekeeping – Outdoor Storage	Section VIII.H.1.a.v (pg 23)	*Add the new item to this section.* For facilities with outdoor storage or stockpiles subject to on-going use and/or mechanized activity, alternate BMPs are acceptable in order to meet storm water goals and prevent disruption of operations.
19	Good Housekeeping – Run-on Diversion	Section VIII H.1.a.vii (pg 23)	Diverting flows from non-industrial areas at existing facilities will be impractical and potentially costly at many facilities. Flow diversion should only be considered where the cost of the diversion is commensurate with the water quality benefits and in full consideration of other environmental impacts.
20	Atmospheric Deposition: Level 3 Imposition of Numeric Effluent Limits	Section XVII.D (pg 41)	In the introductory paragraph to Section XV11. D, POLB suggests deleting "the discharger shall" and replacing that language with, "the following will apply." XVII. D.2. Language should be modified as follows: "2. The quantity of pollutants in a facility's stormwater discharge that results from background conditions, atmospheric deposition, run-on, or any natural disaster (such as forest fires), does not count toward the exceedance of an NAL or NEL."
21	Monitoring requirements Inspection Triggers - General	Section IX (pg 28)	Section IX should explicitly state that inspections and visual observations are required only during daytime scheduled operating hours. Additional clarification should be added for facilities that stop operations during

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			rain events: these facilities should not be required to conduct monitoring or inspections during these events. An additional consideration for monitoring is the safety of monitoring personnel. If scheduled operating hours are during night time, visual monitoring and/or inspection may not be possible, simply due to visibility and may not be safe. The IGP should provide this clarification. Once the Qualifying Storm Event definition is finalized, it should be applied to all visual observation and inspection requirements.
22	Monitoring requirements Inspection Triggers – Pre-storm	Section IX.C.4 (pg 29) and Section IX.C.6 (pg 30)	See proposed inspection program below for a full discussion of this topic. Generally, we request that the IGP provide workable guidance for facility inspections. Specific questions that are raised by the draft IGP include: - What is the trigger for the pre-storm inspection? - What is the objective of the pre-storm inspections? - Can weekly and pre-storm inspections be combined? - Can daily and pre-storm inspections be combined? - Should pre-storm inspections be eliminated since the QSP will already be doing daily and weekly inspections? POLB strongly recommends basing pre-storm inspection triggers on a reliable predictor, such as the NOAA forecast. Because the NOAA forecast provides both probability of rain and predicted amount of rain, either or both of these factors may be used as inspection triggers. We are concerned that waiting for a storm event to become a QSE will cause unnecessary burden on the Industrial QSP due to the uncertainty of storm events. It is better to use a definite predictor for storm based monitoring. We ask that the State Water Board reconsider the large increase in required inspections and consider developing a streamlined program

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			that meets the permit objectives and is efficient for dischargers to implement.
23	Sampling and Analysis requirements Missed Storm Events	Section X.A and X.G pg 30	Permit language should be modified to clarify the consequence of missing the first qualifying storm event for a quarter. The draft Industrial General Permit language appears to imply that all subsequent events during that quarter must be sampled. Revise language to say, "*Dischargers who fail to sample the first qualifying storm event of a quarter shall sample the next qualifying storm events that occurs during the quarter.*"
24	Monitoring Methods and Exceptions Qualified Combined Samples	Section XI.2 (pg 32) Section XII.B (pg 35)	This is the first introduction of "qualified combined samples". This concept needs to be defined in Appendix K or introduced earlier, or refer to where this is discussed. It is unclear as to whether the combined samples must be of similar volume or weighted based on flow rates, flow totals, surface area, or other parameter? Within the CGP, a concept of weighting the individual samples based on the proportion of the flow or the area of the site they represent is being introduced into SMARTS now. This concept has some merit, but if it will be used in the IGP it should be detailed and discussed during the permit development. There are concerns about the stipulation that only laboratories are allowed to combine samples. Some dischargers have qualified laboratory staff and may prefer to combine samples in-house. A set of protocols and a Standard Operating Procedure reference complete with QA/QC should be given to maximize consistency in sampling techniques. There is a requirement for dischargers to collect samples from all drainage areas. Some sites have structural obstacles in place that prevent sampling of each individual drainage area before combining with offsite discharges. How will situations like these be addressed?
25	Monitoring/inspection		As proposed, the draft IGP will significantly increase the inspection and monitoring

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	Frequency		burden on facilities without providing a comparable benefit to water quality. The number of inspections under the existing permit is estimated to be approximately 40. By contrast, the number of inspections expected under the proposed IGP is approximately 450. This is an increase of approximately 1,150% As an alternative, we propose the following suggested Routine Inspection Program that would use a combination of documented monthly inspections and quarterly SMARTS reporting as the backbone of the inspection program. Specific elements of the proposed Routine Inspection Program include: - Annual pre-storm inspection to be completed by September 15th, which documents inspection and corrective actions (if needed) for all areas that contain potential pollutant sources. (NOTE: quarterly pre-storm inspections may be more likely to be accepted.) - Monthly documented inspections to meet requirements of Section VIII.H.a, b, and d - SMARTS should be programmed to send an inspection and reporting reminder email each month to the QSP assigned to each project - Weekly, undocumented inspection, to meet the requirements of Section VIII.H.1.a, b, and d - Quarterly reporting to SMARTS to certify that all undocumented weekly inspections were completed In addition to the proposed Routine Inspection Program, we have developed an alternate Event-Based Inspection Program. This proposed program, which uses some of the lessons learned from the CGP event-based inspection program, would consist of the following: - Sampling only for storm events when the noaa.gov website predicts greater than 0.25-inch of rain for the event with a minimum 50% probability. - Where noaa.gov predicts a small volume event, sampling is not required

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			- Requirement to document non-discharging events will be met by completing an event log in SMARTS during quarterly reporting - Pre-storm inspection documentation shall be uploaded to SMARTS during the first quarterly reporting.
26	Field Measurements	Section X.H Table 1 (pg 32) Section X.K (pg 32) Section XI Table 4 (pg 34)	The requirement for conducting pH and specific conductance measurements is not consistent in the various noted sections of the permit. Further these descriptions appear to preclude the use of stationary sampling equipment installations and use of certified laboratories for pH and specific conductance analyses. Table 1 and Section X.K in the draft IGP limit dischargers to using calibrated portable instruments for analyzing pH and specific conductance in the field. However, Attachment D, Item 15 states that dischargers may conduct field analyses if they have properly trained personnel, implying that field analysis for pH or specific conductance is optional. Table 4 further indicates that calibrated pH paper is an approved test method. However, it is noted that a calibrated stationary device that is permanently installed at the point of discharge or the ability to transport the sample to a State certified laboratory for analysis within the required hold time would also meet the intent of this requirement. Requiring field analyses for pH and specific conductance using calibrated equipment will require significant additional training for staff that is traditionally not qualified to perform instrument calibration and field testing. And, while the hold time restrictions associated with pH analyses may warrant field analysis for this parameter, there is no real value in requiring specific conductance to be measured in the field. We suggest consideration be given to simply requiring the discharger determine the most appropriate method for their site to ensure that pH analysis is performed within the required hold time and eliminating the requirement for field analysis of specific conductance.
27	Test Methods and Detection Limits	Section XI Table 4	Several parameters listed in Table 4 identify only one approved test method, rather than both the EPA and the equivalent Standard Method. Many laboratories

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		(pg 34)	are certified only to one method for a given parameter. This restriction will reduce the number of laboratory options available to dischargers, particularly in remote areas where options are severely limited. The Test Method column of Table 4 should be modified to include both the EPA and the equivalent Standard Method. Additionally, the detection levels for several parameters are inconsistent with the test methods identified and are well below levels achievable by several state certified laboratories. For example, the method detection limit for oil and grease using EPA method 1664 is 1.4 mg/L; however, Table 4 of the Draft IGP identifies a detection limit of only 1 mg/L. Because detection levels vary with test methods and most of the parameters identified in Table 4 can be analyzed using both the EPA or an equivalent Standard Method, a numeric detection limit should not be specified in the permit.
28	QSD/QSP	Section I.50 (pg 8)	Use of the same terms ("QSD/QSP") as used in the Construction General Permit (CGP) will likely lead to confusion. Training for Industrial SWPPP activities will be different than that for Construction SWPPP activities. Suggest referring to these qualified parties as "Industrial Qualified SWPPP Developer/Practitioner" (IQSD/IQSP) to distinguish them from those qualified for CGP SWPPP activities. Also, below we are suggesting two levels of QSP training. Suggest referring to these as "IQSP-1" and "IQSP-2" or similar to distinguish between the two levels.
29	QSD Pre-Requisite Certifications/Registrations	Section VII. B.1.b (pg 16)	The list of "registrations for certifications" required for an IQSD is very limiting, and the proposed certifications will not necessarily ensure that SWPPPs are developed correctly or result in programs that adequately control stormwater discharges. Also, many individuals who have the proposed certifications do not have experience with industrial operations, pollutant sources, or stormwater and environmental management activities. For example, civil PEs in California are not specifically trained in stormwater quality management and it is only through voluntary continuing education or experience that they develop this expertise. Similarly, California geologists do not undergo training in stormwater quality management and are unlikely to have experience in the management of industrial

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			sources of stormwater pollution., although a PGs or PEs expertise would be relevant to SWPPP development if it included the design of infiltration BMPs and/or ground water monitoring. Registered landscape architects and professional hydrologists may have very little experience with industrial sites outside of the design or retrofit of landscape based practices. POLB suggests that the State reconsider the list of pre-requisite professional certifications. Unlike the recent experience with the CGP, there are not many professional certifications that specifically address industrial storm water management as there were for erosion and sediment control. However, for some sectors, such as landfills, a professional in erosion and sediment control might be very appropriate. In lieu of the currently-defined list of required certifications, we suggest the permit language be revised to reflect one of the options provided below. It is suggested that the State Water Board-sponsored Industrial General Training Team (referenced in Section I, page 8, Item G. 50) be tasked with choosing one of these options and developing the specific details (such as defining the required relevant education and experience discussed in option #2). : 1) In lieu of defining a list of pre-requisite certifications, the appropriate qualifications for an Industrial QSD should be determined by the completion of the state-sponsored or approved training program and examination. The training program would focus on the requirements of the permit, and provide exposure to a variety of industrial discharge conditions/situations. The examination should be comprehensive and detailed, and include practical applications, such that, in order to pass, examinees will have to combine their personal experience and skills with the knowledge they gain from the training program. 2) In lieu of defining a list of pre-requisite certifications, POLB suggests replacing the proposed list with language that requires Industrial QSD

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			applicants demonstrate a specified level of relevant education and experience. The education and experience can be demonstrated during the application process for the Industrial QSD course or examination. This would be similar to the processes currently used by other professional certification programs. The definitions of "relevant education and experiences" would be developed by the stakeholder group or the Industrial General Permit Training Team. Should the State Water Board want to maintain a list of pre-requisite registrations or certifications, POLB suggests this requirement be limited to facilities in higher levels on the corrective action tiers. The State Water Board's stakeholder group should investigate potentially relevant certifications and identify the ones that should be included in the final permit. POLB suggests that the following professional certifications be additionally considered: • Certified Professional in Storm Water Quality (CPSWQ) – EnviroCert International • Certified Professional in Erosion and Sediment Control (CPESC) – EnviroCert International • Registered Environmental Assessor I or II (REA) – Department of Toxic Substances Control • Certified Hazardous Materials Manager CHMM – Institute of Hazardous Materials Management • Industrial Waste Treatment Plant Operator – California Water Environment Association • Environmental Compliance Inspector – California Water Environment Association • Certified Municipal Separate Storm Sewer System Specialist (CMS4S) – EnviroCert International. Notwithstanding professional registration or certification, the State Water Board

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			should maintain the requirement for training and testing potential Industrial QSDs as stormwater control is a multi-disciplined process and knowledge of pollution prevention techniques beyond a specific field is necessary. The Industrial General Permit should include a statement that services such as engineering or landscape architecture must be performed by an appropriately licensed professional. The clarification should be expanded to note that not all aspects of SWPPP development necessarily constitute a specific professional service, e.g., that while a SWPPP may include a Civil Engineer designed feature, the whole SWPPP as a matter of course does not constitute the practice of civil engineering.
30	Level 2 & Level 3 Reports Require Civil PE Certification	Section XVII.C.8 and C.8 (pgs 40-41)	A professional civil engineer is required to certify all reports for Level 2 & Level 3. Suggest providing some clarification as to what needs to be certified. This requirement may be interpreted as a certification of the commitment of the facility to implement/install as prescribed in the report, or a certification that the BMPs described were developed in accordance with standard practice. If the intent is to certify the commitment, then the LRP is the appropriate person or entity to certify the report. Page 41 of the permit indicates the "Level 2 NAL Exceedance Evaluation Report" must include a schedule for completing required structural and/or treatment controls. Page 42 says, "All submitted reports described in this subsection must be certified by a California registered professional civil engineer." It does not seem efficient or necessary for a civil PE to certify the entire report, including the commitment to a schedule by the facility. Suggest revising the language such that an IQSD needs to supervise submittal of all reports, but a professional civil engineer must conduct and certify all engineering work as described in the Professional Engineers Act (Bus. & Prof. Code Section 6700, et seq.).
31	Total Maximum Daily Load (TMDL) Requirements	Finding 54 (pg 8)	*POLB recommends that Finding 54 be deleted and the following language should be included in a new Findings section I.*

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			The only findings referencing Total Maximum Daily Loads (TMDLs) in the draft Industrial General Permit are findings 42 and 54, neither of which fully addresses the relationship between TMDLs and the IGP. Finding 42 is about the USEPA benchmarks and finding 54 is in a section of findings concerned with sampling, monitoring, reporting, and record keeping. Since previous industrial general permits pre-dated the adoption of TMDLs across the state, this permit should provide a set of findings explaining TMDLs and their relationship to the Permit. **Total Maximum Daily Load (TMDL) Requirements** XX. TMDLs are numeric calculations of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL is a sum of the allowable loads of a single pollutant from contributing point sources (the waste load allocations, or WLAs) and non-point sources (load allocations, or LAs), plus the contribution from background sources and a margin of safety. Discharges from the industries covered by this permit are considered point source discharges. In accordance with 40 CFR 122.44(d)(1)(viii)(B), NPDES water quality-based effluent limitations (WQBELS) shall be consistent with the assumptions and requirements of TMDL WLAs. This Order is consistent with applicable WLAs and LAs that have been adopted by the Regional Water Boards and approved by the Office of Administrative Law and the USEPA as of the date of this Order. XX. Many industries will be subject to multiple TMDLs. WLAs and LAs for many TMDLs are assigned to multiple stormwater dischargers, or across multiple industrial sectors, or both, with no specific mass loads assigned to individual dischargers. Due to the nature of stormwater discharges, and the typical lack of information on which to base numeric WQBELs, federal regulations (40 CFR 122.44(k)(2)) and this Order allow for the implementation of BMPs to control or abate the discharge of pollutants from stormwater.

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			XX. This Order requires industries subject to this permit to comply with all adopted and approved TMDLs for which they have been assigned a WLA as of the time the permit is adopted. Compliance may include, but not be limited to, implementation of BMPs and control measures contained in TMDL implementation plans. This Order does not contain TMDL-specific monitoring requirements. Since TMDL monitoring may be shared by multiple dischargers, it is best coordinated at the Regional Water Board level. TMDL monitoring requirements will be addressed by the Regional Water Boards as part of their TMDL-related implementation activities. For stormwater discharges to waters for which there is an EPA approved or established TMDL, industry is not required to monitor for the pollutant for which the TMDL was written unless the Regional Board informs the industry, upon examination of the applicable TMDL and/or WLA, that a facility is subject to such a requirement consistent with the assumptions of the applicable TMDL and/or WLA. The Regional Board's notice will include specifications on which pollutant to monitor and the required monitoring frequency. These requirements, including the requirement to implement BMPs contained in the TMDL implementation plans, are expected to be sufficient to implement the WLAs in each TMDL for which an industry has been assigned a WLA.
32	Atmospheric Deposition	Finding 46 (pg 7)	Finding 46 as written is confusing; it could be interpreted to mean that only atmospheric deposition from natural disasters would be considered. This is inappropriate in areas of the state with significant air pollution problems. Finding 46 should be modified to address background/offsite sources. We suggest the following language to replace the existing Finding language: "46. Pollutants in stormwater discharges caused by background conditions, atmospheric deposition, run-on, or by any natural disaster, including forest fires, do not apply toward any NAL corrective action trigger determinations."

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33	Atmospheric Deposition: Level 3 Imposition of Numeric Effluent Limits	Section XVII.D (pg 41)	In the introductory paragraph to Section XV11. D, POLB suggests deleting "the discharger shall" and replacing that language with, "the following will apply." XVII. D.2. Language should be modified as follows: "2. The quantity of pollutants in a facility's stormwater discharge that results from background conditions, atmospheric deposition, run-on, or any natural disaster (such as forest fires), does not count toward the exceedance of an NAL or NEL."
34	Atmospheric Deposition: Acid (Low pH) Precipitation	Finding 46 (pg 7) and Section XVII.D.2. (pg 41)	Based on stormwater runoff monitoring records at a school bus maintenance facility in Northern California, the pH in the precipitation falling on the site in November 2010 was determined to be 5.65 (which is outside the range for the proposed pH NAL). This indicates that acid rain or atmospheric deposition may at times cause the pH NAL trigger to be exceeded. Rainfall pH data from the National Atmospheric Deposition Program also indicates the pH of rain falling in most areas of California well below 6.0 historically (http://nadp.sws.uiuc.edu). If the Level 1 trigger is exceeded because of the pH in the runoff, there should be a procedure for the permittee to: • Demonstrate that there is no operational source through testing of on-site runoff and the precipitation falling on the site; and Avoid being required to take Level 2 Corrective Actions if the pH NAL is exceeded because of low pH in the precipitation falling on the site or atmospheric deposition during a subsequent reporting year (rather than an operational source).

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35	Natural Background: Natural background is currently not acknowledged in the discussion of the Numeric Action Levels (NALs), Numeric Effluent Limits (NELs), and Corrective Actions in the Draft IGP	Section XVII, pages 38-43	Like the USEPA Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), the IGP should acknowledge natural background. Industries should not be subject to corrective actions or monitoring for exceedances of NALs or NELs caused by natural background. Following the first 4 quarters of NAL monitoring (or sooner if the exceedance is triggered by less than 4 quarters of data if the average concentration of a pollutant exceeds a NAL or a NEL value, and the industry determines that the exceedance of the NAL is attributable solely to the presence of that pollutant in the natural background, industry is not required to perform corrective action or additional background monitoring, provided that: • The average concentration of the NAL monitoring results is less than or equal to the concentration of that pollutant in the natural background; • Industry documents and maintains with the facility/project SWPPP, the supporting rationale for concluding that NAL exceedances are in fact attributable solely to natural background pollutant levels. This supporting rationale must include any data previously collected (including literature studies) that describe the levels of natural background pollutants in stormwater discharge; and • Industry notifies the State Water Board on its final quarterly NAL monitoring report that the NAL exceedances are attributable solely to natural background pollutant levels. The following definition of natural background should be included in Appendix K: "Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity at a site, or pollutants in run-on from neighboring sources which are not naturally occurring."
36	Natural Background	Section XVII, (pgs 38-43)	Background specific conductance is not considered in relation to Level 1 and Level 2 Corrective Actions. Based on stormwater runoff monitoring records for a school

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			bus maintenance facility in Southern California, the specific conductance NAL may be exceeded when the runoff also includes shallow rising groundwater that comingles with the storm runoff leaving the site. In Southern California this has been experienced in the La Mesa-Spring Valley vicinity. The specific conductance concentration in shallow groundwater in Southern California is often much greater than the proposed specific conductance NAL (200 umhos/cm). Further, in most cases, the pH in the potable water supply serving the facility will be much higher than the 200 umhos/cm NAL (e.g. the specific conductance in the City of San Diego potable water supply in 2009 averaged between 902 and 960 umhos/cm). If the Level 1 trigger is exceeded because of the specific conductance in the runoff, there should be a procedure for the permittee to: • Demonstrate through the results of on-site specific conductance testing of the runoff and rising groundwater that there is no operational source; and Avoid being required to take Level 2 Corrective Actions if the specific conductance NAL is exceeded during a subsequent reporting year and is not caused by an operational source.
37	Corrective Action Tiers and Off-Ramps	Section XVII, (pg 43), new item	POLB objects to the manner in which the draft Industrial General Permit sets NALs and NELs, and thus to the entire permit approach to tiered corrective action. If another tiered corrective action approach is adopted appropriately, it must contain provisions that allow corrective action based on triggers or events to end when the triggers have been resolved through specified certifications or subsequent sampling or performance shows conditions have changed appropriately
38	Level 3 Imposition of Numeric Effluent Limits	Section XVII.D.2 (pg 41)	Delete Level 3 Corrective Action entirely; the numeric effluent limits must be eliminated. The "off ramps" for suspension of numeric effluent limits, and emergency

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			conditions and natural disasters are ineffective and inadequate, and cannot substitute for correcting the error in setting these NELs. See the attached Legal Comments for further discussion.
39	Numeric Action Levels May Be Premature; They Must not be Virtual Effluent Limits	Section X, pgs 32 and 24	Because the use of "action levels" is not built upon a firm legal basis, use of numeric values as benchmarks or "action levels" must be very carefully and clearly defined in an NPDES permit. Such numeric values cannot serve as or be converted into NELs. NELs can only be established and implemented through the legally required procedures for the developing NELs and including NELs in NPDES permits.
40	Sampling for Parameters Causing or Contributing to Existing Exceedances of Water Quality Standards (WQS)	Section IX.H.4 (pg 31)	The Draft permit requires that dischargers must sample for "Parameters indicating the presence of pollutants that may be causing or contributing to an existing exceedance of a WQS in the facility's receiving waters." The statement, as currently written is overly broad and would result in industrial dischargers monitoring for constituents that are not related to their industrial processes (i.e., bacteria). Additionally, the intent of collecting data on such parameters could be easily misunderstood. The draft Fact Sheet states: "The monitoring program requirements are designed to provide useful, cost-effective, timely, and easily obtained information to assist dischargers to identify pollutant sources, implement corrective actions, and revise BMPs." That statement, as well as the acknowledgement in the 2004 draft General Permit that numeric effluent limits cannot be scientifically supported in this permit make the intended use of data on such parameters very clear, although not in one location in the permit. Therefore, the permit should include a clarification that data collected as a part of the proposed analytical monitoring program is only intended to be used for assessing the adequacy of a facility's SWPPP and BMPs. POLB recommends that the language be clarified as follows: "Parameters

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			indicating the presence of pollutants that may be causing or contributing to an existing exceedance of a WQS in the facility's receiving waters. Such parameters are limited to only site- and industry-specific pollutants that are under the direct control of the discharger and that can reasonably be expected to cause or contribute to an exceedance of water quality standards in an impaired body of water. Data on parameters linked to existing exceedances of WQS is to be used solely for assessing the adequacy of a facility's SWPPP and BMPs, and not for determinations of cause or contribution."

Technical Memorandum

To	**James Vernon (Port of Long Beach)**		
From	**Tim Simpson, AMEC** **Matt Lentz, AMEC**	Cc	**Chris Stransky, AMEC**
Tel	**(949) 642-0245**		
Fax	**(949) 642-4474**		
Date	**April 21, 2011**		
Subject	**Pier T Cost Estimate – Draft Industrial General Permit Compliance**		

Per your request, AMEC Geomatrix Inc. (AMEC) has prepared a cost estimate for storm water sampling and inspections at the Total Terminals International (TTI) facility located at 301 Hanjin Road, Long Beach, CA. These costs were developed to help the Port of Long Beach (Port) understand the probable costs associated with compliance with California's current Draft Industrial Storm Water General Permit (Draft IGP) for a typical port terminal. The TTI facility is 381 acres, has 26 outfalls, and is used for handling general cargo containers.

ESTIMATED COSTS

Based on our review of the draft IGP and GIS maps and documents related to the TTI facility, implementation of the following sampling and analysis and inspection tasks will be necessary for compliance with the draft IGP:

- Task 1 – Revision of Compliance Documents
- Task 2 – Collection, Analysis, and Reporting of Runoff Samples
- Task 3 – Terminal Contractor Inspections

Task 1 – Revision of Compliance Documents

This task consists of revisions to TTI's compliance documents, including a site reconnaissance to assess onsite industrial activities, sampling locations, method of sampling, and access/safety requirements. In addition, we have included costs for a Qualified SWPPP Developer (QSD) to revise TTI's Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Implementation Plan (MIP). We have assumed significant changes to TTI's SWPPP will not be required. The MIP will describe the sampling collection and handling procedures including sample preservation and holding time requirements, the analytical suite, quality assurance/quality control (QA/QC) procedures, and data quality objectives. For this task, we will also develop a site-specific health and safety plan. Additional costs were included to purchase and install an on-site rain gauge under this task.

Task 2 – Collection, Analysis, and Reporting of Runoff Samples

This task will consist of collecting and analyzing samples from the TTI facility. In accordance with the Draft IGP, samples must be collected from all discharge locations (total of 26 over 381

acres) and a subset of the samples can be composited at the laboratory prior to analysis. We assumed twelve total samples for analysis each quarter based on outfall tributary areas that were substantially similar. To allow for collection of representative samples, we have assumed samples will be collected at each accessible outfall using a peristaltic pump from land and inaccessible monitoring locations would be collected from a vessel. To collect the samples within a four-hour period, at least two teams of two sampling personnel will be required. One team will collect samples from the vessel and one team will be located on land with the peristaltic pump. Field staff will complete visual observations and field measurements at each monitoring location. We have included additional hours assuming one false start event per year. Within 30 days of obtaining the results, the results will be reported using the State Water Board's Storm Water Multi-Application and Report Tracking System (SMARTS).

Task 3 – Terminal Contractor Inspections & Training

The Draft IGP requires several inspections including daily inspections for outdoor material/waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes. For the TTI facility, we assumed daily inspections would be required 365 days per year and each inspection would take approximately two hours to complete. We assumed the terminal contractor daily inspection would include observations at the container yard, crane maintenance facility, cranes, rail yards, wash racks, and fueling locations. The proposed IGP also requires weekly, quarterly, pre-storm, and during storm inspections. We have assumed these inspections would be combined with the daily inspection. We added labor costs for the inspections requiring additional observations. For example, weekly inspections require observations at each storm water discharge location, drainage area, conveyance system, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. For these costs, we assumed terminal contractors will perform the inspections. We also assumed the terminal contractors will require training. We assumed three terminal contractors would be required to attend the Qualified SWPPP Practitioner training program. We have assumed ten staff would be required to attend a site-specific training.

Attachments:

Table 1 – Summary of Estimated Costs

Table 2 – Detailed Summary of Inspection, Monitoring and Training Requirements

Table 1
Cost Estimate For Storm Water Monitoring and Inspections at the TTI Facility

Task 1 - Revision of Compliance Documents

This task consists of revisions to TTI's compliance documents, including a site reconnaissance to assess onsite industrial activities, sampling locations, method of sampling, and access/safety requirements. In addition, we have included costs for a Qualified SWPPP Developer (QSD) to revise TTI's Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Implementation Plan (MIP). We have assumed significant changes to TTI's SWPPP will not be required. The MIP will describe the sampling collection and handling procedures including sample preservation and holding time requirements, the analytical suite, quality assurance/quality control (QA/QC) procedures, and data quality objectives. For this task, we will also develop a site-specific health and safety plan. Additional costs were included to purchase and install an on-site rain gauge under this task.

Principal Engineer	2	hours	@ 250.00	$	500.00
Senior II Engineer/Scientist	16	hours	@ 185.00	$	2,960.00
Project II Engineer/Scientist	16	hours	@ 135.00	$	2,160.00
Project Engineer/Scientist	90	hours	@ 110.00	$	9,900.00
Equipment/Other Costs					
Rain Gage	2	systems	@ 750.00	$	1,500.00
Vessel & Fuel	2	days	@ 410.00	$	820.00
Vehicle	2	days	@ 75.00	$	150.00
Confined Space Entry and monitoring equipment	2	days	@ 250.00	$	500.00
				$	**18,490.00**

Total Task 2 Cost: **$18,500.00**

Task 2 - Collection, Analysis, and Reporting of Storm Water Samples

This task will consist of collecting and analyzing samples from the TTI facility. In accordance with the Draft IGP, samples must be collected from all discharge locations (total of 26 over 381 acres) and a subset of the samples can be composited at the laboratory prior to analysis. We assumed twelve total samples for analysis each quarter based on outfall tributary areas that were substantially similar. To allow for collection of representative samples, we have assumed samples will be collected at each accessible outfall using a peristaltic pump from land and inaccessible monitoring locations would be collected from a vessel. To collect the samples within a four-hour period, at least two teams of two sampling personnel will be required. One team will collect samples from the vessel and one team will be located on land with the peristaltic pump. Field staff will complete visual observations and field measurements at each monitoring location. We have included additional hours assuming one false start event per year. Within 30 days of obtaining the results, the results will be reported using the State Water Board's Storm Water Multi-Application and Report Tracking System (SMARTS).

Task 2.1 - Collection of Samples [4 events]

Senior II Engineer/Scientist	80	hours	@ 185.00	$	14,800.00
Project II Engineer/Scientist	100	hours	@ 135.00	$	13,500.00
Project Engineer/Scientist	100	hours	@ 110.00	$	11,000.00
Field Technician	200	hours	@ 85.00	$	17,000.00
Peristaltic Pump	8	days	@ 75.00	$	600.00
Water Quality Meter	16	days	@ 75.00	$	1,200.00
Misc. Supplies	8	days	@ 200.00	$	1,600.00
Hotel	8	days	@ 150.00	$	1,200.00
Vessel & Fuel	8	days	@ 410.00	$	3,280.00
Vehicle	16	days	@ 75.00	$	1,200.00
				$	**65,380.00**

Task 2.2 - Analytical Costs

Analytical Suite (TSS, pH, SC, O&G, Metals, TOC)	48	samples	@ 240.00	$	11,520.00
Additional Constituents (Benzo(a)pyrene, Chrysene)	48	samples	@ 130.00	$	6,240.00
		Costs per event:		**$**	**17,760.00**

Task 2.3 - Analytical Reporting on SMARTS

Senior II Engineer/Scientist	4	hours	@ 185.00	$	740.00
Project II Engineer/Scientist	16	hours	@ 135.00	$	2,160.00
		Costs per event:		**$**	**2,900.00**

Total Task 2 Cost (4 events): **$86,000.00**

Task 3 - Terminal Contractor Inspections & Training

The Draft IGP requires several inspections including daily inspections for outdoor material/waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes. For the TTI facility, we assumed daily inspections would be required 365 days per year and each inspection would take approximately two hours to complete. We assumed the terminal contractor daily inspection would include observations at the container yard, crane maintenance facility, cranes, rail yards, wash racks, and fueling locations. The proposed IGP also requires weekly, quarterly, pre-storm, and during storm inspections. We have assumed these inspections would be combined with the daily inspection. We added labor costs for the inspections requiring additional observations. For example, weekly inspections require observations at each storm water discharge location, drainage area, conveyance system, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. For these costs, we assumed terminal contractors will perform the inspections. We also assumed the terminal contractors will require training. We assumed three terminal contractors would be required to attend the Qualified SWPPP Practitioner training program. We has assumed ten staff would be required to attend a site-specific training. A detailed summary of the inspection and training reuirements in the draft IGP is included as Table 2.

Terminal Contractor Inspections	850	hours	@ 96.80	$	82,280.00
Terminal Contractor QSP Training	48	hours	@ 96.80	$	4,646.40
Terminal Contractor Training Program Costs	3	QSP	@ 550.00	$	1,650.00
Terminal Contractor Port Training	20	hours	@ 96.80	$	1,936.00

Total Task 3 Cost: **$90,500.00**

Total Estimated Costs, Tasks 1 - 3: **$195,000.00**

TABLE 2

TTI FACILITY - TERMINAL CONTRACTOR INSPECTIONS

Permit Section	Task or Inspection Type	Estimated Number Per Year	Estimated Time to Complete Task	Cost per Hour or per Unit[1]	Total Cost For Inspection	Notes/Assumptions
INSPECTIONS - Fact Sheet E.1 - Order Section VIII.H.1.d - Order Section IX.C.5	- Inspect and clean outdoor areas and Equipment that may come into contact with industrial materials or wastes (Order p. 24) - Documentation of Non-Discharging storm Events. Document storm events that do not produce a discharge but that occur before a monthly visual monitoring (Order p. 30).	365	2	$ 97	$ 70,664	TTI operates 365 days/year requiring 365 daily inspections; We assumed it will take 2 hours for a terminal contractor to conduct and document the daily inspection requiring visual observations at "any outdoor material/waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes." We assumed the inspector would need to drive around the entire 381 acre facility to observe the container yard, crane maintenance facility, cranes, rail yards, wash racks, fueling locations, etc. The costs do not include hours for cleaning the outdoor areas and equipment. We assumed that the weather would be monitored prior to the inspection and QSE/non-QSE would be documented on the field form.
INSPECTIONS Fact Sheet E.2 & E.1 - Order Section VIII.H.1.h - Order Section IV.B.5, VII.B, IX.B.1 - Order Section IX.C.5	- Quarterly Inspections (Order p. 26) - Annual Comprehensive Site Compliance Evaluation (ACSCE) (Order p. 27)	4	0.5	$ 97	$ 194	Order requires visual inspections on a quarterly basis of all areas of industrial activity and associated potential pollutant source areas. The inspection is conducted to ensure the SWPPP addresses significant changes to the facility's operations or BMP implementation procedures. For this task, we have assumed significant changes would not occur on a quarterly basis at a cargo handling facility. We have assumed the daily inspections conducted above would be used to document the inspection. To ensure the SWPPP addresses the current operations or BMP implementation procedures, we have assumed the inspector would also review the SWPPP after the inspection. We have assumed the inspector would spend 1/2 hour reviewing the SWPPP after each quarterly inspection and documenting the findings on a field form.
INSPECTIONS - Fact Sheet E.1 - Order Section VIII.H.1.a	- Inspect weekly all outdoor areas associated with industrial activity, storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs (Order p. 23). Non-storm water discharge (NSWD) visual monitoring (Order p. 29)	52	2	$ 97	$ 10,067	Assumed it would take an 2 hours to observe the 26 outfalls, conveyance systems, and perimeter areas impacted by off-facility materials or storm water run-on at this 381 acre facility. Assumed the waste handling/disposal areas would be documented on the daily inspection form; Assumed 52 inspections/year. Assumed once per quarter, an NSWD visual monitoring form would also be filled out.
INSPECTIONS - Order Section IX.C.4 - Order Section IX.C.6	- Pre-Storm Inspections (secondary containment areas and storm water drainage areas (Order p. 29 and 30)	4	1	$ 97	$ 387	The draft permit indicates that this requirement is for "any anticipated storm event." We have assumed a pre-storm inspection record will be filled out when there is measurable rain in the forecast. Based on historical rain gauge data, there are approximately 16 events each year. We assumed the majority of observations could be documented on the weekly form since it requires similar observations. For this item, we assumed an extra 4 inspections will be performed during weeks with 2+ rain events.
INSPECTION & SAMPLING ANALYSIS - Order Section XI.2 - Order Section IX.C.1 - Order Section IX.C.2 - Order Section XII.A.4 - Order Section I.F.49 and I.I.54 - Order Section V.E - Order Section XI	- Sampling 303(d) water bodies (Order p. 8 & 15) - During storm sample collection (Order p. 30) - During storm visual observations (Order p. 28, 29) - Equipment Purchase/On-site rain gauge (Order p. 15) - Reporting on SMARTS (Order p. 35)	Not Included - See Table 1				The costs for sample collection and during storm observations are included in the cost estimate to monitor 26 Outfalls using grab sampling methods (Table 1) and automated sampling (Table 2). We have assumed storm water is discharged during the storm event and no contained water will be discharged.
INSPECTION & SAMPLING ANALYSIS - Order Section IX.C.1 - Order Section IX.C.3	- During storm visual observations (Order p. 28, 29)	8	1	$ 97	$ 774	Assumes a during storm visual observation form will be completed each month. We removed the four months when visual observations would be recorded during the sampling program.
SAMPLING ANALYSIS - Order Section XI.3.	Report the hardness value of the receiving water (Order p. 32)	4	0.5	$ 97	$ 194	Requirement for dischargers subject to Section XV. Assumes POL8 facilities will be subject to Section XV based on the Dominguez River TMDL and source of metals from various sources including truck tires/brakes. We assumed hardness data will be accessible online.
TRAINING[3] - Order Section VII.B.3.	Qualified SWPPP Practitioner (Order p. 16)	3	N/A	$ 550	$ 1,650	Assumes 1 staff will be required to attend the QSP training from the TTI facility. Based on the construction training program, the QSP training program costs $550 (not including staff time).
		9	16	$ 97	$ 4,646	Assumes a 3 terminal contractors will attend a two day training program.
TRAINING - Order Section VIII.H.e	Employee Training Program (Order p. 24)	10	2	$ 97	$ 1,936	Assumes 10 terminal contractors will attend a POL8 training or site specific training.

Estimated Costs For Year 1[4] $ 90,500

Estimated Costs After Year 1[2,3,4] $ 88,900

Notes

1. An hourly rate of $96.8/hour was used based on the terminal contracted labor rate.
2. We assumed the SWPPP update by a QSD would not be required after year 1.
3. We assumed the QSP training would not be required after year 1.
4. These costs do not include corrective action items such as non-compliance reporting, additional monitoring, or installation of structural and/or treatment controls.

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Technical Memorandum

To	**James Vernon (Port of Long Beach)**		
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Date	**April 21, 2011**		
Subject	**Storm Water Treatment System Cost Estimate**		

In response to potential requirements to meet Numeric Action Levels (NALs) in the recently releases draft Industrial Activities Storm Water General Permit (draft IGP), the Port of Long Beach asked AMEC Earth & Environmental (AMEC) to evaluate the feasibility and potential costs of using currently available treatment technologies to treat storm water runoff from the Ports to below the applicable NAL levels for metals, particularly copper and zinc.

Based on our review of numerous studies and our experience in treating storm water runoff from industrial sites, there does not appear to be a currently available treatment technology with the demonstrated ability to consistently treat storm water from industrial sources to below several of the proposed NALs, particularly for copper and zinc. Based on our experience and discussions with equipment vendors, we believe a "treatment train" consisting of media filtration followed by ion exchange is a treatment approach with a responsible potential to reduce metals to below the proposed NAL values. Although we could not identify actual data confirming that a media filtration/ion exchange treatment train was capable of consistently achieving NALs, we used this treatment train approach as the basis for estimating costs that could be incurred to comply with requirements to treat runoff from the Port to below the applicable NALs.

The remainder of this memorandum summarizes our assumptions and presents our estimate of costs to treat runoff from the Ports using a media filtration/ion exchange-based treatment train approach.

The conceptual storm water treatment system design is based on design storm data obtained from the Los Angeles 2006 Hydrology Manual, tributary and storm water discharge point information for the Ports' properties, and hydrologic calculations performed to assess flow rates and volumes. Costs were then applied to the design, construction, operation and maintenance of the systems. The table below summarizes estimated costs related to the initial capital costs, land use, and operations and maintenance (O&M) of the systems. The "Total Costs" column includes the initial capital costs, and the 5-year total cost (not the Net Present Value) for the land required to house the treatment equipment and for O&M of the treatment systems.

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Table 1. Estimated Costs Related to the Initial Capital Costs, Land Use, and Operations and Maintenance (O&M) of the Systems

Design Storm	Capital Cost	Annual Land Use Cost	Annual Operation and Maintenance Cost	Total Costs (during 5 year permit term)
85th Percentile	$150,000,000	$1,600,000	$15,180,000	**$234,000,000**
2-yr 24-Hr	$201,000,000	$3,200,000	$15,180,000	**$293,000,000**
5-yr 24-Hr	$283,000,000	$3,200,000	$15,180,000	**$375,000,000**
10-yr 24-Hr	$355,000,000	$3,200,000	$15,180,000	**$447,000,000**
25-yr 24-Hr	$451,000,000	$3,200,000	$15,180,000	**$501,000,000**
100-yr 24-Hr	$582,000,000	$8,000,000	$15,180,000	**$698,000,000**

A summary of background information and assumptions used in developing the conceptual design and costs estimates is provided below. Detailed calculations used in the development of the cost estimates have been developed and are provided in the accompanying spreadsheets (Attachment 1). These cost estimates are based on a number of recent quotes from suppliers/ vendors and AMEC's experience installing similar systems in the Los Angeles Area.

Tributary Areas and Design Storm Assumptions

To understand storm water discharge from the Port properties, the drainage areas and storm water discharge points for the Port was evaluated. Based on available GIS data, the Port occupies approximately 3,380 acres and has 230 storm water discharge points. For cost estimating and conceptual treatment system design purposes, we assumed that each storm water discharge point received flow from approximately 14.7 acres of impervious area. Design rainfall depth was obtained from The Los Angeles 2006 Hydrology Manual for selected return periods ranging from the 85th percentile event (required under Los Angeles new development standards) to the 100-Year, 24-hour storm event (see Table 2 below). For each design storm a conceptual BMP system (treatment train plus storage facilities) was sized based on expected peak flow rate and 24-hour runoff volume calculated using the Hydrology Manual Time of Concentration (Tc_Calculator) software.

Table 2. Conceptual Treatment System Requirements

Design Storm	Inches of Rainfall[1]	Design Storm Peak Flow Rate (GPM)	24-Hour Runoff Volume (Gallons)	Number of Treatment Systems at Each Outfall	Total Number of Treatment Systems
85th Percentile	0.75	1,127	270,000	2	460
2-yr 24-Hr	2.0	3,326	700,000	2	460
5-yr 24-Hr	3.0	5,821	1,100,000	2	460
10-yr 24-Hr	3.7	7,599	1,310,000	2	460
25-yr 24-Hr	4.6	10,036	1,600,000	2	460
100-yr 24-Hr	5.8	13,600	2,100,000	2	460

1. The 2006 Los Angeles Hydrology Manual Isohyet Maps were used to determine the inches of rainfall for the specific Design Storm.

Conceptual Treatment System Design

The conceptual treatment system consists of a pretreatment system (oil/water separator and clarifier), enhanced sand media filtration system, and a final resin polishing system. To meet treatment flow rate capacities for systems currently available, storm water storage tanks are also included as part of the system. We assumed a maximum flow rate of 420 gallons/minute for the system based on the largest commercially available enhanced sand filter system identified (Stormwater Rx). Detailed calculations and assumption used in the development of treatment system design are included on the spreadsheets provide in Attachment 2. The number of storage tanks necessary and the configuration/number of treatment units necessary were based on the volume and flow rate calculations for each of the specific design storms.

Costs Assumptions

Costs estimates developed were based on publically available data, equipment vendors, and AMEC's experience designing and installing storm water treatment systems in industrial applications. Capital costs developed include costs to purchase the pretreatment, media filtration, and resin polishing systems, storage tanks, and pump stations, as well and the engineering and installation costs of the systems. In addition to the capital costs, annual O&M cost estimates were developed that include the removal and replacement/regeneration of media. Average estimated land use costs (provided by the Port) associated with appropriating land for the construction and operation of the treatment systems and the potential lost rental value of the land were also incorporated. Detailed calculations related to the costs are included on the spreadsheets include in Attachment 1.