Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

August 5th, 2014

Jeanine Townsend, Clerk of the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Electronic Submission: commentletters@waterboards.ca.gov

Subject: Comment Letter – Trash Amendments

Contech Engineered Solutions appreciates this opportunity to comment on the Draft Amendments to Statewide Water Quality Control Plans to Control Trash released for public comment by the State Water Resources Control Board in June 2014. We share your concern regarding the harmful impact of trash and preproduction plastics in our streams and oceans and we support the development of the Proposed Trash Amendments as an important step toward protect our local water bodies. To improve the effectiveness of these Amendments, please accept the following comments which are generally organized by the relevant section of Appendix D. Most comments also apply to similar sections of Appendix E but to reduce redundancy they are not repeated with references to Appendix E.

Trash Amendments Comments

1. **"Zero trash" is the only defensible water quality objective**
   Appendix D, Section II.C.5

   The narrative water quality objective stated here should be replaced with the numeric water quality objective of zero trash to reflect the fact that receiving waters have no assimilative capacity for trash. There are no legal findings presented to support the selection of any other standard. The zero trash objective contained in the Los Angeles area Trash TMDLs has been tested and upheld by the Fourth Appellate District Court. Although there are technical challenges to eliminating all trash entering jurisdictional waters, properly designed and maintained full capture systems are established means of eliminating the discharge of trash from municipal separate storm sewer systems.

2. **Extend requirements beyond priority land uses**
   Appendix D - Section III.I.6

   The level of control provided in these trash amendments is not sufficient to meet the narrative water quality objective proposed for the Ocean Plan since trash control is not required for non-priority land uses. These areas do generate trash, albeit generally at lower levels than priority land uses. These amendments essentially shield dischargers from having to control trash from these land uses by defining compliance with the water quality objective as treatment of priority land uses only. This is unacceptable. Preferably, the water quality objective for trash would be satisfied only for areas adequately treated by Track 1 and Track 2 controls. Other "non-priority" areas would not escape coverage but treatment there would be de-prioritized in favor of a focus on high priority areas.

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

3. **Confirm that treatment of public and private storm drains is required**
   Appendix D - Section III.I.6

   Trash discharge from private inlets has been a blind spot in Los Angeles area TMDLs and in trash control requirements in the San Francisco Bay area. Baseline trash loading information has been collected for a variety of land uses in both regions, however in all cases, catch basins in public streets adjacent to the land uses were monitored exclusively, not catch basins in on private land. Likewise, virtually all retrofit activity has occurred on public inlets. Although control of discharge from private drains may be more challenging, MS4 operators and NPDES permittees clearly have responsibility for the quality of water exiting the MS4 regardless of its source. They also have the authority to extend treatment requirements to private land owners who discharge to the MS4. The use of the term "in their jurisdiction" in Track 1 should not be misconstrued to limit jurisdictional responsibility to inlets owned and operated by the jurisdiction.

   This issue is important because many priority land uses are characterized by large facilities with multiple inlets located on private land that connect to the MS4 via a connector pipe, for example, shopping malls, apartment complexes, industrial parks and schools. Track 1 does not differentiate between public and private drains, instead referring to "all storm drains". Please confirm that this includes storm drains on private property.

   This creates a challenge for MS4 owners and operators who must secure and exercise the legal authority to compel private land owners to retrofit their inlets and to provide ongoing demonstration that adequate inspection and maintenance is provided. Alternatively, MS4 operators could install and operate regional facilities that receive runoff from private sites. In this case, a method of securing capital improvement project and operation and maintenance funding from private land owners may be required.

4. **Avoid backsliding in areas with existing trash regulation**
   Appendix D - Section III.I.6.a

   Section III.I.6.a seems to provide dischargers with existing trash control requirements that are more stringent than the proposed provisions with a less stringent compliance option. For example, the 15 Los Angeles area TMDLs set a trash reduction target of zero trash. Applicability in Los Angeles region is addressed in the "Applicability" section, but section III.I.6.a should be modified to state: "Only programs with less stringent existing trash control requirements would be deemed in compliance with the prohibition of discharge if they are consistent with section III.L.2." Where more stringent standards already apply, for example as part of an NPDES permit incorporating local TMDLs, they must remain in place to avoid backsliding.

5. **Full capture system approval process must be improved**
   Appendix D – Section III.L.1.b.(1)

   The Los Angeles Regional Water Quality Control Board has approved some full capture systems on the basis that they have screen aperture sizes of 5 mm or less and that they have ample hydraulic capacity in a half occluded condition to pass the one-year peak flow rate. Evaluation on these simple criteria is inadequate since it ignores operation and maintenance feasibility and does not ensure that captured trash

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

is retained without resuspension between maintenance events. It should also be noted that the San Francisco Regional Water Quality Control Board has taken the position that they have NOT certified any devices. They did provide a list of devices that would qualify for funding under a specific grant, but that is not a certification.

Field observations of trash removal systems relying on a perforated metal screen deployed perpendicular to the dominant flow path show that these systems are prone to clogging as trash and debris is pinned to the screen by the force of flow moving through the screen. When the screen is blocked by trash and debris it becomes a hydraulic barrier and runoff is backed up in the collection system and overtops the screen as if it were a solid weir. In many cases this leads to bypass at influent rates far below the design flow rate and with small amounts of trash and debris present. Worse, many systems are designed such that bypass flows are routed through the trash storage area which causes resuspension and export of previously captured trash when screens clog or during high-flow events. To ensure reliable performance of full capture systems, the following improvements to the certification process are recommended:

- Prohibit the use of on-line trash control devices that direct peak flows through the trash storage area unless they are cleaned out after each significant storm event (<0.25" depth); or specify that full capture systems must retain trash in an off-line configuration where peak flows are diverted upstream of the trash storage area.
- Require in-field demonstration that trash control systems can capture and retain trash at the design treatment flow rate. Alternatively laboratory demonstration of trash capture and retention may be demonstrated using an influent stream containing a representative mix of gross solids including sediment, organic debris and trash.
- Document the maintenance procedures and frequency required to maintain adequate trash removal and retention at the design flow rate. Include this information in any full capture certification.
- Require an initial inspection frequency of monthly or after each significant event greater than 0.25" in depth for the first year with maintenance performed when screens are 25% clogged or when trash loads have accumulated to 25% of capacity for on-line storage systems or 75% for off-line storage systems. Based on observations during this period inspection frequency may be extended, but should occur at twice the frequency that maintenance is required.

Prior to acceptance by the State Board, an independent audit of the effectiveness of previously certified full-capture BMPs in Los Angeles is needed per the requirements above and with particular focus on the actual operation and maintenance burden imposed by each type of system. To receive credit for full capture system treatment, maintenance efforts must be adequate to ensure that devices continuously have capacity to remove and retain 5 mm particles from the one year storm.

6. Los Angeles area trash TMDL requirements should not be undermined Appendix D – Section III.L.1.b.(2)

Although not explicitly stated, this section seems to allow Los Angeles area permittees to reduce the scope of their trash control efforts to focus only on priority land uses. This is unacceptable since it

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

contradicts the clear direction given in the Trash TMDLs that the goal of zero trash discharge be attained.
By their own accounting, most Los Angeles permittees are on track with their full capture retrofits or other strategies to comply with the Trash TMDLs. What is needed in the region however, is a focused look at the adequacy of current maintenance efforts. In some high trash load generating areas of the Los Angeles and Ballona Creek watersheds, maintenance on a per storm basis is needed to avoid premature bypass and resuspension of previously captured trash due to the type of full-capture systems selected. Also, very few private drains in the Los Angeles area have been retrofitted with full capture systems.

7. **Implement Full capture systems where feasible**
   Appendix D – Section III.L.2.a.(2)

   This section should be amended to require permitting authorities electing to pursue Track 2 to implement full capture systems where feasible, prior to consideration of other controls.

8. **Flexibility is needed in pursuing Track 1**
   Appendix D – Section III.L.2.a

   This section requires permittees to select either Track 1 or 2. Although not expressly stated, it seems that this decision is intended to be made once based on mitigation approaches selected for the entire drainage network under the jurisdiction of the permittee. Considering the likelihood that there will be at least one location in each jurisdiction where full capture systems are infeasible, this interpretation will push virtually every jurisdiction into Track 2.

   A better approach would be to allow the jurisdiction to select Track 1 or Track 2 on a catchment by catchment basis with a requirement that full capture systems be installed where feasible. Alternatively, a Track 1 could include an allowance of up to 5% of area treated by non-full capture systems.

9. **Update Reference**
   Appendix D – Section III.L.2.b

   The reference in this section to Chapter III.I.6.a should be corrected to reference Chapter III.I.6.

10. **Full capture systems are not effective preproduction plastic controls**
    Appendix D – Section III.L.2.c

    This section seems to offers industrial permittees a path to compliance with the narrative trash objective that is based on installation of full capture systems. This is surprising given the fact that preproduction plastics are typically smaller than 5 mm in diameter and will not be controlled by full capture systems. Since industrial sites are listed among the priority land uses that are covered in section III.L.2.a, full capture controls or equivalently effective controls would already be required. This section must be amended to require additional controls that are effective for preproduction plastics.

    For example, the CDS system is available with standard screen apertures of 1.2 mm, 2.4 mm, and 4.7 mm. The 2.4 mm screen has been used extensively in California and is the default standard in several

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

other states. The hydraulic and pollutant removal capabilities of this system for trash as well as fine sediment and oil and grease are well documented. To ensure that systems are installed that actually address preproduction plastics, the following change is recommended:

- Replace "full capture systems" with "preproduction plastic capture systems" in section III.L.2.c.(1) and specify that such systems must remove and retain particles 2.4 mm and larger during the peak flow rate generated by the 1-year storm.
- Replace references to "full capture systems" elsewhere in section III.L.2.c with "preproduction plastic capture systems".

11. Compliance timeline is appropriate for Track 1 compliance
Appendix D – Section III.L.4.a.(3)

The 10 year final compliance time line is appropriate for those permittees that select the full-capture option considering the complexity of identifying, designing, permitting and constructing storm drain retrofit projects.

12. Compliance timeline should be shorter for track 2
Appendix D – Section III.L.4.a.(4)

The 10 year final compliance time line should be shortened to 7 years for those permittees that select track 2. Since many of the non-full capture solutions can be implemented without new capital improvement projects the time line can be shorter. For example increasing street sweeping, enforcement and public education can be done quickly. A shorter time line also incentivizes selection of the full capture track which provides more trash capture certainty. Controls selected under either track should be undertaken in the context of a broader compliance plan such that redundant controls are avoided and maximum leverage is gained toward satisfying other water quality goals.

13. Catch basin scale controls should be designed for short duration rainfall intensities
Appendix I – Definition of Terms, Full Capture System

Trash control devices installed at individual storm drain inlets will be grossly undersized relative to the peak one-year flow rate if sized using the one-year, one-hour rainfall intensity. To produce an accurate result, the Rational Method equation requires that a rainfall intensity be selected with a duration equal to the time of concentration for the drainage area. Individual catch basins typically serve small drainage areas with times of concentration of 5 minutes or less. Around the state, the peak 5-minute, one-year rainfall intensity is typically between 3 to 5 times the 1-hour, one-year rainfall intensity and therefore produces peak flow rates 3-5 times larger. Therefore inlet scale retrofits are likely to be undersized by a factor of at least 3 by the current criteria.

At the other end of the size spectrum, large regional controls may be installed in catchments with times of concentration longer than 1 hour. The longer time of concentration, combined with the tendency for high intensity rainfall to occur in localized cells that are smaller than the catchments served by large regional systems, would result in oversizing of large regional systems.

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

Ignoring catchment hydrology in favor of uniform use of the 1-year, 1-hour rainfall intensity creates inequity in the percentage of annual flow treated by regional controls and inlet scale controls. To correct this inequity, the full capture definition should be amended as follows:

- Catch basin scale controls must be sized using the peak one-year, five-minute rainfall intensity
- For devices serving multiple the rainfall intensity corresponding to the actual time of concentration for the contributing catchment must be used.

14. Minimum levels of inspection and maintenance must be specified
Appendix I – Definition of Terms, Full Capture System

Trash reduction success following Track 1 hinges on adequate maintenance of full capture systems. To ensure that systems are functioning as designed, they should initially be inspected after every significant storm event (>0.25" depth) until experience justifies a less frequent schedule. Where 25% of the screen is occluded the screen should be cleaned. For those systems storing trash in an on-line configuration, trash should be removed when it reaches 25% storage capacity. For those systems storing trash in an off-line configuration, trash should be removed when it reaches 75% of storage capacity. The local Regional Board should perform periodic spot checks to ensure accuracy and adequacy of reported maintenance information.

15. Updated criteria for certification of full capture systems is needed
Appendix I – Definition of Terms, Full Capture System

Full capture system – The last sentence of this section allows the Executive Director of the State Water Board to decline certification of some full capture systems certified by the Los Angeles Regional Water Board. This is encouraging since some of the certified devices are unable to capture and retain trash with the required effectiveness (100% removal for the 1 year storm) at feasible maintenance levels. More information regarding criteria for accepting or rejecting full captures systems should be given to allow entrepreneurs and engineers information needed to create the next generation of trash controls. Simply reverting to the failed approach of considering only the screen aperture size and modeled flow rates gives system designers little incentive to consider operational feasibility, especially if maintenance enforcement is weak.

16. "Vortex separator system" is a misleading term
Draft Report - Section 5.1.3
The term "vortex separation system" has been used in Trash TMDLs and related documents as a generic term for the CDS system which is a proprietary system marketed by Contech Engineered Solutions, LLC. The CDS system has been used in California for over 15 years and at thousands of locations nationally. There are approximately 10 other vortex separation systems available in the market, none of which were part of the trash TMDL development process and none of which have been certified as full capture systems by the Los Angeles Regional Water Board. These systems are typically used in California as pretreatment upstream of infiltration, detention and filtration systems. Continuing to use

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

the term "vortex separation system" is misleading in that it seems to include those systems without screens that do not meet the full capture system standard.

Where it is being used in a historic context, the actual product name should be used in lieu of "vortex separation system", for example in references to the Calabasas CDS system used to develop baseline trash loads. Also where "vortex separation systems" are called out as an approved full capture system by the Los Angeles Regional Water Board, the trade name CDS should be used.

17. **Recognize multiple benefits of full capture systems where appropriate**
Draft Staff Report - Section 5.1.3

Although trash control is the focus of these amendments, it is noteworthy that some full capture systems provide significant ancillary benefits. For example, the CDS system is unique among trash controls in that it has spill storage and sediment removal capabilities that are well documented in field studies and should be noted in Section 5.1.3. In addition, these important ancillary benefits should be considered in any cost/benefit analysis and may play a significant role in meeting other pollution control objectives either by removing particulate bound pollutants of concern directly or by significantly extending the useful life of downstream filters, infiltration systems, biotreatment systems and other BMPs.

We thank you again for the opportunity to provide our comments and we ask that the State Water Board carefully consider them. We would like to reiterate our support of the State Water Board's process of engaging stakeholders during the development of the Proposed Trash Amendments.

If you have any questions, please contact me.

Sincerely,

Vaikko P. Allen II, CPSWQ, LEED-AP
Director - Stormwater Regulatory Management

CONTECH Engineered Solutions
2550 Bonmark Dr., Ojai, CA 93023
Phone: 310-850-1736
vallen@conteches.com
www.contech-cpi.com