

Metal Recyclers WQ Standards Committee

Technical Subcommittee

Compliance and Monitoring System

Preamble

The Regional Water Quality Control Board, the operators of scrap metal recycling facilities, and Orange County Coastkeeper share the goal of reducing water pollution from recycling facilities. In the past, the regulatory approach to this water pollution problem has not included a clear description for operators of how to achieve this goal in a way that will be effective, efficient, and compliant. The approach described here focuses on practical steps to reduce pollutant loads significantly and to comply with the law.

The working group of industry, environmental advocacy, and regulatory representatives who developed this proposal considered the efficacy of numeric effluent limits, the costs and effective limits of currently available treatment technology, the operation and maintenance challenges of reliance on treatment, and the load reductions that might be achieved through non-treatment BMPs that reduce runoff volumes or initial exposure of stormwater to pollutants. .

The working group agreed that the most valuable outcome is the reliable and substantial reduction of pollutant load, and that promoting the use of runoff volume reduction is the most desirable strategy. Preventing polluted runoff is expected to be more reliable and—in the long run--less expensive than relying on treatment alone to remove pollution from stormwater. The working group also acknowledged, however, that many facilities face site constraints that will prevent the achievement of standards through pollution prevention alone. Therefore, the working group intends to promote the use of prevention first, backed up by the use of treatment to the extent needed. This will be achieved through the iterative implementation of volume and exposure reducing strategies, the use of appropriately sized treatment using proven technology, and coordinated monitoring to validate effectiveness and ensure compliance. While the approach is iterative, it is also expected that facilities operators will think strategically about their site from the beginning of the process.

The working group expects, based on an evaluation of existing Southern California scrap metal yards, that the use of pollution prevention and treatment described herein will reduce the mass loading of metals in stormwater runoff from these yards by no less than 80%, even before the institution of numeric discharge limitations, which will occur during this permit cycle. The working group further hopes and expects that the achievement of significant load reductions through this program will be acknowledged by the Regional Board in the event of the implementation of any future TMDL for constituents being addressed by this program, such that additional load reductions may not be required from participants in this program unless all other sources are already doing all that is practicable.

Several key assumptions were used to simplify the approach to enhance its implementation. These simplifying assumptions were developed by the working group specifically because of the belief that a simpler approach would be more widely implemented, and that industry-wide implementation would produce the greatest load reductions. Therefore, the standard for accounting for load reduction through pollution prevention and the sizing of treatment control will be based on land

area, using rainfall-runoff relationships and baseline pollutant loads developed in advance for the region. Indicators have been identified in order to simplify monitoring. The approach also builds in an incentive for pollution prevention, in the form of a credit applied to numeric monitoring data based on areas from which polluted discharge was eliminated by pollution prevention management practices. An alternative compliance standard based on a facility's mass load reduction will be developed from data collected during the first years of this permit, as described in the Enhanced Monitoring Program description.

Compliance

An operator covered by the metal recycling industry regional general stormwater permit shall:

PHASE 1

1. By October 1, 2011, complete the following actions:
 - Pave unpaved industrial areas that contribute to off-site stormwater discharge with concrete or asphalt;
 - Consolidate any discharge from the site to as few points as possible, preferably one central point;
 - Develop, implement, retain on site, and annually review a rain-event action plan setting forth preparations to be made when rainfall > 0.1 inch with a 40% probability is forecasted and contingencies should especially challenging weather conditions occur;
 - Implement a sweeping schedule and procedures (and acquisition of adequate equipment if not already available); and
 - Documented employee training in the operation and maintenance of all BMPs selected and installed according to the requirements below.
2. In addition, by October 1, 2011, where feasible¹ select among and install the following early-action BMPs² to reduce or eliminate surface discharges of stormwater from industrial areas³ to a receiving water or municipal separate storm sewer:
 - Measures to isolate industrial areas from contact with rainfall and runoff;
 - Removal, painting, or coating of contaminating building materials;

¹ Feasibility shall be analyzed by considering opportunities offered and constraints imposed by the site to implement each early-action BMP listed and shall be documented in the signed report to be submitted to the Regional Board pursuant to Phase 1 step 6.

² The committee will develop standard procedures to specify and design early-action BMPs based on the criterion of preventing polluted runoff from 95% of the average annual runoff.

³ See the glossary in Attachment B for the definition of industrial area.

- Diversion of runoff from non-industrial areas away from industrial areas;
 - Extraction of runoff from surface discharge by infiltration (while avoiding groundwater contamination), evaporation, and/or harvesting for consumption (e.g., in a shredder, sent into a local reclaimed water system, used for dust control);
 - Collection of stormwater for discharge to the publicly owned treatment works (POTW), if and only if the plant reclaims treated water for reuse or infiltrates and/or evaporates it during the wet season;
3. By October 1, 2011, identify any industrial area that will continue to discharge stormwater to a receiving water or municipal separate storm sewer after installation of the early-action BMPs. If this discharge includes runoff from any area with significant exposure to phase-separated oily material, isolate and treat that area's runoff with an appropriate oil-water separator per Attachment A.
 4. Begin planning for advanced media filtration¹ or equivalent to treat the discharge. Phase 2 contains the standards for designing treatment. A recycler may elect to install treatment during Phase 1 but is not obligated to do so until Phase 2, no later than October 1, 2012. (Note: The committee strongly prefers maximum possible use of the early-action BMPs in preference to treatment, because of their often lower cost and certain ability to eliminate all industrial pollutant discharge, while treatment can only reduce pollution by a not entirely predictable amount. Nevertheless, the committee recognizes that most recyclers will not be able to eliminate all discharge and should begin the process of planning for treatment during Phase 1.)
 5. By October 1, 2011, develop a surface discharge monitoring plan for any surface stormwater discharge that occurs, over and above monitoring required by the industrial stormwater general permit, according to this committee's guidelines.² Conduct the monitoring program throughout the 2011-2012 wet season.
 6. Regularly and appropriately perform the specified actions and operate and maintain all installed BMPs, as verified in a signed report to be submitted to the Regional Board by June 30, 2012.

Proper performance of these steps conveys presumption of not causing or contributing to water quality standards violations through the 2011-2012 wet season.

PHASE 2

1. By April 30, 2012, assess BMP performance over the preceding wet season. If there has been no discharge from storm events within the design criterion described below, or if there have been no exceedances of benchmarks or CTR criteria in any discharge monitored, the operator

¹ See the glossary in Attachment B for the definition of advanced media filtration. The committee will develop standard procedures to specify and design this treatment system.

² See the Enhanced Monitoring Program below. The Enhanced Monitoring Program will include sampling protocols and quality assurance requirements, and will set forth the use and limitations of other sources of data, including permit-required sampling.

may elect to bypass the remaining steps in this phase. If a discharger failed to submit the report described in Phase I section 6, the discharger will be in compliance with the permit if no sample from runoff from the site exceeded relevant benchmarks or CTR criteria for dissolved metals.

2. By June 30, 2012, select and design treatment for any surface discharge from exposed industrial areas not eliminated by the early-action BMPs.¹ The required treatment shall consist of advanced media filtration or equivalent, as standardized by this committee,² designed and operated to treat $\geq 95\%$ of the average annual runoff volume from exposed areas not eliminated by the early action BMPs.
3. By October 1, 2012, install the selected additional early-action BMPs and/or treatment equipment and provide documented training of employees to operate and maintain new BMPs.
4. By October 1, 2012, revise the surface discharge monitoring plan with regard to the site revisions in the preceding year. Conduct the monitoring program throughout the 2012-2013 wet season.
5. Regularly and appropriately perform the specified actions and operate and maintain all installed BMPs, as verified in a signed report to be submitted to the Regional Board by June 30, 2013.

Proper performance of these steps conveys presumption of not causing or contributing to water quality standards violations through the 2012-2013 wet season.

¹ If early-action BMPs are partially successful but do not eliminate runoff, the discharger will consider a proportionally smaller area to have been fully addressed by those BMPs for purposes of the computation in Phase 3. Thus, if in infiltration basin receives runoff from an entire site but cannot fully satisfy the design criterion, it will be considered to eliminate the runoff from that area for which its capacity would meet the design criterion.

² See the glossary in Attachment B for a definition of advanced media filtration. The committee will develop standard procedures to specify and design this treatment system.

PHASE 3

1. By April 30, 2013, and again by April 30, 2014, assess BMP performance over the preceding wet season. For discharges from recyclers that have fulfilled the Phase 1 and 2 requirements,¹ BMP performance will be assessed by a comparison of the post treatment runoff water quality to discharge quality requirements (DQRs) developed by the committee.²
2. For facilities that have not fulfilled the Phase 1 and 2 requirements, the operator is in compliance with the permit if all sample results from that facilities' discharge are below the CTR criteria and benchmarks for pollutants for which DQRs were developed.
3. For facilities that have fulfilled Phase 1 and 2 requirements, BMP performance will be assessed as follows. The geometric mean for each facility will be calculated for each of the DQR constituents using all the discharge results from the prior wet season from that facility. If a facility has multiple discharge points, area-weighted averages of the geometric means will be calculated using the relative tributary area for each discharge point. In addition, a credit will be applied to the geometric mean for implementation of the early action BMPs (Phase 1 section 2). For example, if a discharger installs non-polluting roofs over 25% of its operational area, the geometric mean for that facility will be reduced by 25% to arrive at an "adjusted" geometric mean. This credit will be applied based on area addressed without regard to whether the BMP was implemented before the adoption of this permit. If the adjusted geometric mean for one or more of the target constituents is above its respective DQR, BMP performance is deemed insufficient and the discharger is required to prepare and implement a corrective action plan to address the DQR exceedance.
4. A corrective action plan must identify the reasons for the exceedance and the specific improvement actions to be taken to meet the DQR, including a time schedule for completion. The corrective action plan must be submitted to the Regional Board and will be a public record. Failure to take actions identified in the corrective action plan will be a violation of the permit.

¹ Fulfilling Phase 1 and 2 requirements means completing all of the actions in Phase 1 section 1, installing and maintaining the early action BMPs in Phase 1 section 2 where feasible, and installing, operating and maintaining the advanced media filtration or equivalent technology described in Attachment B, as specified by this committee and documenting all of these actions in the signed reports to be submitted to the Regional Board pursuant to Phase 1 step 6 and Phase 2 step 5.

² The DQRs will be established for those pollutants associated with the recycling industry in the Multi-Sector General Permit and for dissolved lead, copper, and zinc per the California Toxics Rule (CTR) by compiling the post treatment results of all advanced media filters identified for this purpose in the Enhanced Monitoring Program and for each result, comparing the post -treatment analytical results to the CTR criteria for lead, copper and zinc, and MSGP benchmarks for the other pollutants. Post treatment data used in the development of DQRs is expected to be from within the Santa Ana Region during the wet seasons after October 1, 2011, but if agreed by the Enhanced Monitoring Program participants, can also include post treatment data from the areas of Regional Boards 4 or 9, and may pre-date October 2011 if a discharger had implemented advanced media filtration as defined herein. Using the results of these calculations, the DQRs will be based on one of the following:

1. If the 75th percentile of post treatment analytical results is less than the CTR (lead, copper and zinc) or benchmark (aluminum and iron), then the DQR will be the CTR or benchmark; or
2. If the 75th percentile of post treatment analytical results is above the CTR (lead, copper and zinc) or benchmark (aluminum and copper), then the DQR will be the calculated 75th percentile result.

5. In addition, if any composited result from a single storm event exceeds the DQR by 4X or more (single event exceedance), the discharger must investigate the cause of the exceedance, including whether the treatment system was inappropriately operated or maintained, incorrectly sized, or otherwise failed to function as expected or was by-passed. The discharger must complete a report on this investigation within 30 days of receiving the data from that storm and must submit it electronically to the Regional Board and to the Enhanced Monitoring Program (EMP) participants.
6. For facilities that have fulfilled the Phase 1 and 2 requirements, the facility is in compliance with the permit, which conveys presumption of not causing or contributing to water quality standards violations through the following wet season if: (1) the adjusted geometric mean for each target constituent is below the DQR, and/or (2) for any geometric mean or single event exceedance of a DQR, a corrective action plan or report of investigation, respectively, is prepared and implemented.
7. After April 2014, the Regional Board may consider adoption of the DQRs as enforceable numeric performance standards within this permit. Discharger performance would continue to be compared to DQRs annually each April, using an adjusted geometric mean for each pollutant as described in Phase 3 section 3 above. The Regional Board will consider making the DQRs enforceable in a public meeting at which it may also consider evidence regarding the dischargers' level of implementation of the Phase 1 and 2 BMPs, the implementation costs, and water quality data. Upon making the DQRs enforceable, the Regional Board will send a letter to each discharger covered by this permit reminding them that, in the future, exceedances of the DQRs will constitute violations of the permit and will be subject to enforcement.
8. During May 2014, the participants in the EMP will recommend to the Regional Board a feasible pollutant mass load reduction standard. The methodology will be developed by the EMP participants as described below. The Regional Board will consider adoption of the mass load reduction standard as a part of this permit in a public meeting. If the Regional Board approves the load reduction standard, it will thereafter be an alternative compliance standard, such that failure either to achieve the load reduction standard or to meet all DQRs as described above will be a violation of the permit.
9. New facilities that begin operation during the term of this permit and are covered by it will be required to meet the requirements of this program at the same time as other covered facilities. For example, a facility that begins operation during the third year of this permit must start off with the Phase I BMPs implemented and advanced media filtration installed.

Enhanced Monitoring Program (EMP)

This committee will commission a monitoring program. The objective of the enhanced monitoring program is to develop a general profile of metal recycling water quality before treatment and the results that can be achieved through the use of a combination of best management practices and available treatment technologies. Specifically the project will document the performance characteristics of the Storminator and Stormwater Rx treatment systems including frequency distributions of these systems influent and effluent. This data is intended to be used to develop Discharge Quality Requirements (DQR) for all scrapyards in the project area. In later years the monitoring program may extend to cover any additional treatment options subsequently identified by the committee.

The program will commence by analyzing existing pre-and post-treatment data to identify gaps to be filled in the enhanced monitoring. Most pre-treatment data are from the existing permit monitoring program and are not thought to be of much value for the purpose. Some data on the committee's specified standard treatment are available but must be reviewed for usability based on quality control considerations. It is proposed that the analysis of data needs be completed by March 31, 2011 for use in designing the EMP. The EMP participants will also consider, in designing the program, the effect on the influent data of the varying use of pretreatment or other BMPs at different sites.

The monitoring project will collect water quality data from stormwater from six representative scrapyards selected from a pool of scrapyards in the project area that includes San Bernardino, Riverside, and Orange County's with advanced treatment systems. A minimum of 159 samples that will include 24 samples from each scarparyard plus 15 quality control samples will be collected over a period of two to three years beginning in December 2010. It is estimated that samples will be collected during four storms per year. Samples will be collected from a variety of storms (heavy/moderate/light) that will be representative for the project area. Multiple samples may be collected from individual storms provided that there is a six hour break between rain events.

Samples will consist of first flush and/or time proportional composite samples representing 75% of the hydrograph of a rain event from the inlet and outlet of the final treatment system at the project yards. Grab samples will be collected by trained personnel following standard operating procedures from metered pumped flow through the treatment systems. The composite samples collected will be analyzed at a state certified commercial lab for the following constituents:

1. Chemical Oxygen Demand
2. Total Suspended Solids
3. Hardness.
4. Oil and Grease
5. Total metals (Aluminum, Copper, Iron, and Zinc)
6. Dissolved metals (Copper, Lead, Zinc)

A decision will be made after three seasons and at 3-year intervals thereafter on the need for additional enhanced monitoring, depending on the adequacy of the database on the standard treatment and the need to investigate new technologies. The statistical frequency distributions of treatment system performance will be adjusted upon the completion of each additional monitoring episode.

The EMP will also support the development of a pollutant mass load reduction standard. The intent is to provide an alternative test of compliance so that facilities with varying constraints and opportunities for implementing pollution prevention and varying circumstances of flow and influent loading will all have a realistic likelihood of reliably attaining compliance, but without obviating the built-in incentive within the DQR scheme for pollution prevention strategies.

The EMP participants will develop a method of fixing a baseline pollutant load from unimproved facilities. The mass load reduction standard will be determined by comparing baseline pollution loads from facilities to the loads discharged from representative facilities that have fulfilled Phases 1 and 2.

Generally,

Load = Concentration x Volume

Load Reduction = (Concentration_{baseline} x Volume Reduction) + (Concentration_(baseline – treated) X Volume Treated)

The mass load reduction standard will be developed using data collected by the EMP. Compliance with the standard will be determined using discharger data for that facility, but to use this compliance method, the discharger will have to adhere to data collection standards that will be determined by the EMP that may include training and certification requirements for data collectors.

For purposes of meeting the load reduction standard and for gaining a credit for early action BMPs to adjust a facility's geometric mean in Phase 3 section 3, facilities that implemented BMPs before the beginning of this permit that conform to the definitions herein will be credited for those BMPs just as if they were implemented during Phase 1 or 2.

One approach that the EMP participants may consider is the development of a variable load reduction standard, such that a discharger with higher pollution concentrations in its treated discharges would have to show higher overall load reduction to meet the load reduction standard than would a discharger who almost meets the DQRs. For example, the basic load reduction standard might be requiring that the overall load reduction at least equal the median (50th percentile) treatment load reduction demonstrated by the EMP. But then, if a site's geometric mean for a constituent was 2x the DQR, then the load reduction standard would be the 70th percentile of the EMP demonstrated treatment load reduction.