Meeting TMDL Requirements in the Industrial Stormwater Program

2018 National Stormwater Roundtable
Source Identification

TMDLs require identification of all sources.

- Industrial and Municipal WWTP
- Atmospheric and Stormwater
- Agricultural

Complex models are developed to anticipate actual loads and potential reductions.
Sediment Impacts

Requires use of Best Available Technology (BAT)
Maryland has issued several individual and general permits with TMDL requirements included.

- **Individual and WWTP Permits** require monitoring and verification of certain wasteload allocations established by a TMDL.
- **Industrial General Permits** follow EPA MSGP format.
- **MS4 Stormwater Permits** address treatment to the MEP.

We will cover specific examples of how General Permits are used to address the Chesapeake Bay and local TMDLs.
Most stormwater loads are identified in aggregate, not on a site by site basis. However the permit provides site specific requirements.

2.2.2 Discharges to Water Quality-Impaired Waters.

...If you discharge to an impaired water with an EPA-approved or established TMDL, EPA will inform you whether any additional measures are necessary for your discharge to be consistent with the assumptions and requirements of the applicable TMDL and its wasteload allocation, ...

We address this by site specific registration letters.
Industrial General Permits

- 1235 Operators - Industrial (SW)
  - Larger Facilities require Additional work.

- 312 Operators - Mineral Mine, Asphalt and Concrete Plants (MM)
  - Process Water with WLA for Some Sites

- 190 Operators – Marina (MA)

- 41 Operators - Coal Mine (CM)

- 22 Operators – Seafood Processors (SE)
General Permits with dewatering have numeric limits for TSS.

- At the time of registration, we assign specific monitoring and limits (tons/year) for a facility to ensure they do not exceed their WLA.

- If there is no WLA, we ensure we have monitoring and flow data that allows us to monitor their operation.
Outfalls Information: (Attach a separate list if necessary)

<table>
<thead>
<tr>
<th>Outfall ID</th>
<th>Benchmark Table(s)</th>
<th>Effluent Limitations Table(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>A-1, A-2, C-1, D-1, E-1</td>
<td>A-3, AD.C-1, E-4, E-5</td>
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<tr>
<td></td>
<td>E-2</td>
<td>J-1, J-2</td>
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<tr>
<td></td>
<td></td>
<td>J-3</td>
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<tr>
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<td>J-4</td>
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<td>J-5</td>
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<td></td>
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<td>J-6</td>
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<tr>
<td>001</td>
<td>A-1, A-2, C-1, D-1, E-1</td>
<td>A-3, AD.C-1, E-4, E-5</td>
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<td></td>
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<td>J-6</td>
</tr>
</tbody>
</table>

* Identical Outfalls

* Flow (GPD)
The facility is registered for the following discharges:

**Outfall Specific Benchmark Monitoring and/or Limits for Outfall 001:**
Your registration is subject to Benchmark Monitoring and Numeric Limits as specified below. If you need to update these, send in an updated NOI and a new registration letter will be provided.

### Table J-1 Sector J1 Benchmarks Sand and Gravel Mining (SIC 1442-1446) and Stone and Minerals (SIC 1411, 1422-1429, 1481, 1499)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark</th>
<th>Units</th>
<th>Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>100</td>
<td>mg/L</td>
<td>1/quarter</td>
<td>Grab</td>
</tr>
</tbody>
</table>

### Table J-2 Numeric Limits for dewatering and/or process water discharges at crushed or broken limestone mining facilities (SIC 1422)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Effluent Limit</th>
<th>Units</th>
<th>Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>REPORT monthly avg, and daily maximum</td>
<td>gpd</td>
<td>1/month</td>
<td>Measured</td>
</tr>
<tr>
<td>pH (daily maximum)</td>
<td>6.0 - 9.0</td>
<td>s.u.</td>
<td>1/month</td>
<td>Grab</td>
</tr>
<tr>
<td>pH (monthly average)</td>
<td>6.5 - 8.5</td>
<td>s.u.</td>
<td>1/month</td>
<td>Grab</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS) - Dewatering Only</td>
<td>15 monthly avg, 31 daily maximum</td>
<td>mg/L</td>
<td>1/month</td>
<td>Grab (a)</td>
</tr>
</tbody>
</table>
Due to the average flow rate of discharge identified in your NOI from Outfalls 001 to Upper Monocacy River, a water impaired for Total Suspended Solids, coverage under this permit must meet the following special condition(s):

- The calendar year load of total suspended solids shall not exceed 11.4 tons per year

Within 30 days of this letter, submit a notice signed by an authorized person (per Part III.D.2 of the permit) certifying S.W. Barrick and Sons, Inc. - Barrick Quarry’s acceptance of the aforementioned special condition(s), withdraw your application, or the Department may have to deny coverage under this General Discharge Permit and require you to obtain coverage under an individual NPDES permit.
TMDL Allocations to SW

• The Chesapeake Bay Program extensively modeled urban runoff, and determined loading for segments of the watershed.

• Treatment using approved stormwater BMPs was found to reduce nitrogen, phosphorus and sediments with specific removal efficiencies.

• A 20% restoration (of untreated impervious surfaces) was initially implemented as MEP in MS4 permit, as a pace to achieve TMDL goal.

• We mirrored this requirement for industrial stormwater.
Industrial SW Portion of TMDL

2% of Regulated Impervious Surfaces
Industrial Stormwater

Restoration Requirement.

• This was implemented on facilities larger than 5 total acres (about 30% of facilities).

• This requires a calculation of impervious surfaces and evaluation of existing stormwater treatment.

• This then requires restoration of 20% of the untreated surfaces.
Restoration Options

• Accounting Guidance Practices (Draft or 2014)
  – Most Popular Examples: Street Sweeping, replacing pavement with green space or Retrofiting Existing Stormwater Ponds.

• Design Manual or Proprietary Practices
  – Examples: Green Roof or Cisterns

• Equivalent control measures
  – Achieve reduction of 5.4 lbs total nitrogen (TN) per year is equivalent to restoration of one acre of impervious surface area.
  – New controls required for erosion and sediment control or reduced use of fertilizer.
  – New controls to achieve the benchmarks for nitrogen
  – Reducing an existing TN load allocation (Important for WWTP)

• Off-Site
Facility SWPPP Map Example

Salt Storage
Shop
Cistern
Admin Building
Bioretention

Add to SWPPP:
Industrial impervious area.
Untreated impervious area.
Untreated impervious area subject to Chesapeake Bay restoration requirements.

Runoff Direction
Industrial Activity
Non-industrial Activity
Restoration Challenges

• Clear Status Reporting for significant number of facilities.

• Complex concepts = Compliance Assistance Burden.

• Compliance options.

• Consideration of trading.

• Evaluating potential next steps.
Questions?

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