How to Improve Water Quality in the Rio Grande/Rio Bravo

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Water Quality Challenge of the Rio Grande/Rio Bravo

• Both Mexico and the United States agree that the quality of the Rio Grande/Rio Bravo should be improved

• The two nations have delegated to the IBWC/CILA responsibility over basin water quality

• IBWC/CILA does not have the authority or funds to manage water quality on their own

• There are five barriers to improving water quality in the basin
Barriers to Water Quality Improvement

• Two sovereign nations with different water quality standards
• Five separate states involved along with federal agencies
• A large number of water quality stakeholders: towns/cities, farmers/irrigation districts, industries, other water users
• Rapid economic and population growth along much of both sides of the border
• Poverty along both sides of the border
Water Quality Solutions are Known

• Collection of urban wastewater through sewerage systems
• Treatment of sewerage to reduce contaminants discharged to river
• Prevention of non-point source wastewater discharges from septic systems and farm runoff
Water Quality Problem

- Fundamental challenge to Mexico and US: no one water quality problem but a series of local problems along the river
- Solutions require cooperation among multiple stakeholders along river
- Neither Mexico nor the US has the authority, money or will to coerce stakeholders, so they will need to involve them in a solution
Fiction of a Water Quality Standard

• Mexico, the US and Texas have distinct water quality standards
• There is a close-to-zero likelihood of a common water quality standard
• One water quality standard is not necessary for quality improvements
• IBWC/CILA respond to local political agreements rather than national expectations
# Nuevo Laredo Treatment Plant

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Adopted Value</th>
<th>Mexican Standard Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DO</strong></td>
<td>&gt; 2.0 mg/l</td>
<td>4.0 mg/l</td>
</tr>
<tr>
<td><strong>Ph</strong></td>
<td>6.0 to 9.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Fecal coli</strong></td>
<td>200 col./100 ml*</td>
<td>-</td>
</tr>
<tr>
<td><strong>S. Solids</strong></td>
<td>20 mg/l*</td>
<td>75 mg/l*</td>
</tr>
<tr>
<td><strong>BOD(5)</strong></td>
<td>20 mg/l*</td>
<td>75 mg/l*</td>
</tr>
</tbody>
</table>

*: as a 30-day average value
# Discharge Standards of IBWC/CILA

<table>
<thead>
<tr>
<th>IBWC Minute</th>
<th>Location</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>264/274</td>
<td>Mexicali/Calexico</td>
<td>neither Mexico nor US</td>
</tr>
<tr>
<td>270/283</td>
<td>Tijuana/San Diego California</td>
<td></td>
</tr>
<tr>
<td>298</td>
<td>Outside Tijuana</td>
<td>Mexico</td>
</tr>
<tr>
<td>279</td>
<td>Nuevo Laredo/Laredo</td>
<td>US</td>
</tr>
</tbody>
</table>
Water Quality Standard Cases

Minute 264 (1980): exceeds MX standards, not US
Minute 274 (1987): no standards, just $
Minute 270 (1985): only contact recreation standards
Minute 183 (1990): meet California standards
Minute 298 (1997): meet Mexican standards
Minute 279 (1989): meet US and Texas standards
Voluntary Steps to Resolve Local Water Quality Issues

• Identify what stakeholders perceive are the water quality problems within their reach
• Ask stakeholders what they are willing to do to improve water quality
• Work with IBWC/CILA, federal and state agencies to quantify outcomes of stakeholder voluntary actions to water quality
• Develop initial watershed management plans based on planned actions
• Help stakeholders find financing and technical assistance to achieve voluntary outcomes
Regulatory Steps if Voluntary Actions Do Not Suffice

• None of the bi-national, federal or state agencies have much leverage over local stakeholders

• Regulatory actions will require carrots, not sticks

• Regulatory actions will require decades

• Conditions will worsen rather than improve due to opportunity costs of delay