Passaic Trading in Practice

Passaic Trading Symposium
July 15, 2008
USEPA Targeted Watershed Grant Program

Rutgers
The State University of New Jersey

Cornell University
How will trading work in practice?

We can tell you…

• *How* to apply the trading formula
• *When* trades can be made
• *What* the duration of the trade can be
• *When and how* trades will be verified

But we can’t tell you…

• *What* is the price of P
Why not?

- Unlike Long Island Sound trading program, the state is **not** setting a fixed price on P and is **not** a middleman in the transaction.
- It’s up to Passaic dischargers to determine the price.
- We do not anticipate a large exchange market, but rather a few significant bilateral deals.

…… *more to come later from Dr. Greg Poe*
10 steps to Passaic Trading

1. Are you a Category 1 or Category 2 discharger? (Check Table 5-4)
   - Only Category 2 dischargers are eligible to buy phosphorus allowances.
2. Which management area are you in? Check the Passaic Trading Framework to find out which management areas you can trade with.
3. Which point source zone are you in?
   - If you’re in the Lower Passaic Zone 1 or 2, or trading with either of those zones, then trades are calculated on a seasonal basis (May-Oct)
   - Otherwise, trades are calculated on an annual basis (Jan – Dec)
4. What is your allocation? (Check Table 5-4)
5. How many kg/yr of TP do you expect to discharge? Is that number greater or less than your allocation?
10 steps to Passaic Trading

6. Who do you want to trade with?
7. What is the trading ratio between you and the facility you want to trade with?
   (Check Table 5-7)
8. Apply the trading ratio (choose the ratio of seller to buyer in Table 5-7) to convert the actual TP sold into equalized kg bought
9. What balance will you have after trading?
   (Apply the trading formula)
10. See Examples in Appendix 2
Example Trade # 1
Inter-MA trade, Pompton selling to Upper Passaic

- **Buyer:** Hanover SA STP (located in Whippany Zone)
  - Load discharged = 2902 kg (hypothetical)
  - Anticipated Actual Discharger Flow = 2.07 MGD; (average of 2005-2007 Discharger flow, Table 5-4)
  - Allocation = 0.4 mg/l * Anticipated Actual Discharger Flow = 1144 kg/yr (Table 5-4)
  - **Balance** = Allocation – Load discharged = - 1758 kg

- **Seller:** Two Bridges SA (located in Two Bridges Zone)
  - Load discharged = 815 kg (hypothetical; assumes 0.1 mg/l LTA of TP)
  - Anticipated Actual Discharger Flow = 5.79 MGD; (average of 2005-2007 Discharger flow, Table 5-4)
  - Allocation = 0.4 mg/l * Anticipated Actual Discharger Flow = 3200 kg/yr (Table 5-4)
  - **Balance** = Allocation – Load discharged = 2385 kg

- **Trading ratio = 0.63** (Table 5-7)
- Hanover needs to buy 1758 kg
- Two Bridges can sell 0.63 *2385 kg = 1502 *equalized* kg
- Two Bridges new balance = 2385 kg – 2385 kg = 0 kg
- Hanover new balance = -1758 kg + 1502 kg = - 256 kg
  - Hanover must still buy 256 kg from other sellers
- Note: Buyer must always be Category 2 discharger
Example Trade #2
Inter-MA trade, Upper Passaic selling to Lower Passaic

- **Buyer:** Verona Twp STP (located in Lower Passaic Zone 2)
  - Summer discharge = 1554 kg; winter discharge = 5803 kg (hypothetical)
  - Anticipated Actual Discharger Flow = 2.37 MGD; (average of 2005-2007 Discharger flow, Table 5-4)
  - *Summer Allocation* = 0.4 mg/l * Anticipated Actual Discharger Flow = 655 kg/season (Table 5-4)
  - *Summer Balance* = Summer Allocation – load discharged = -899 kg

- **Seller:** Parsippany-Troy Hills SA (located in Whippany Zone)
  - Because buyer is in Lower Passaic MA, Parsippany-Troy Hills needs to make seasonal trade.
  - Summer discharge = 850 kg (hypothetical; assumes 0.1 mg/l LTA of TP)
  - Anticipated Actual Discharger Flow = 12.56 MGD; (average of 2005-2007 Discharger flow, Table 5-4)
  - *Summer Allocation* = 0.4 mg/l * Anticipated Actual Discharger Flow = 3472 kg/season (Table 5-4)
  - *Summer Balance* = Summer Allocation – load discharged = 2,622 kg

- **Trading ratio = 0.39** (Table 5-7)
- Verona needs to buy 899 kg for summer period
- Parsippany-Troy Hills can sell 0.39 *2305 kg = 899 *equalized* kg for summer period
- Parsippany-Troy Hills new summer balance = 2622 kg – 2305 kg = 317 kg
- Verona new summer balance = -899 kg + 899 kg = 0 kg
- Note: Buyer must always be Category 2 discharger
• Indication from NJDEP that there will be one year period to negotiate trades, have them approved and written into permits
• Duration of trade determined by buyer and seller
  – From one year to duration of entire permit
• Verification
  – Note that calculations in example trades based on anticipated loads; still need to do verification
  – Done annually at end of each trading period
  – Simple – all that’s needed is 2 tables (allocations and trading ratios) and DMR data
# Trade verification form

## FOR SELLER

<table>
<thead>
<tr>
<th>Facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allocation (kg)</td>
<td></td>
</tr>
<tr>
<td>2. Actual TP load discharged (kg)</td>
<td></td>
</tr>
<tr>
<td>3. Actual qty. kilograms TP sold to</td>
<td>actual kg sold to</td>
</tr>
</tbody>
</table>

If facility has sold to more than one buyer, repeat Line 3 information for each additional buyer on lines below:

3a.  
3b.  
3c.  
3d.  

4. Trading ratio (seller to buyer)

If facility has sold to more than one buyer, repeat Line 4 information for each additional buyer on lines below:

4a.  
4b.  
4c.  
4d.  

*5. Equalized qty. kilograms TP sold to | (Multiply Line 3 by Line 4) equalized kg sold to |

If facility has sold to more than one buyer, repeat Line 5 information for each additional buyer on lines below:

5a.  
5b.  
5c.  
5d.  

6. Balance | (Subtract all information in items 2 and 3 from Line 1). |

* Verify that ‘equalized kg sold to ___’ in Line 5 matches ‘equalized kg purchased from ___’ in Line 5 of BUYER form.

## FOR BUYER

<table>
<thead>
<tr>
<th>Facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allocation (kg)</td>
<td></td>
</tr>
<tr>
<td>2. Actual TP load discharged (kg)</td>
<td></td>
</tr>
<tr>
<td>3. Equalized qty. kilograms TP purchased from</td>
<td>equalized kg purchased from</td>
</tr>
</tbody>
</table>

If facility has purchased from more than one seller, repeat Line 3 information for each additional seller on lines below:

3a.  
3b.  
3c.  
3d.  

4. Balance | (Add all information in Items 1 and 3, then subtract Line 2). |

* Verify that ‘equalized kg purchased from ___’ in Line 3 matches ‘equalized kg sold to ___’ in Line 5 of SELLER form.
Verification what-ifs

• What if buyer or seller comes up short at end of trading period?
  – Three possibilities
    • Extra allowances available from other sources
      – Have a pre-approved contingency plan ready to use in case this happens
      – NJDEP allows retroactive trading in this instance only
    • No extra allowances available
      – Liable party penalized through offset in following period and/or fine

• Surplus allowances cannot be banked