March 10, 2010 – Presented by Don Tanner

COLLECTION OPTIONS AND THE MARKETS FOR AG WASTES

Collection Options

Primary Considerations:

- **What** – tonnage, size/volume of materials, handling issues
- **Where** – what type of locations (or combination of locations) are potentials logistically
- **When** – on-going, seasonal, combination of both

Collection Options

1. Municipal site collection
2. Return to Retail
3. Mixed model – municipal and retail
4. Single stream collection blitz
5. Combined stream collection blitz
6. Mobile farm pickup
7. Mobile farm pickup – reverse distribution
8. Private collection and disposal

Challenges common to all Options

- Level playing field – fairness for stewards that participate
- Voluntary or Mandatory – how do you ensure all ‘Stewards’ are playing their part
- Who pays – Is it a fee at retail on top of the cost of the product or are the costs of the program incorporated in the selling price?
- Recycling markets - some materials are hard to find

Option 1 - Municipal Site Collection

Benefits

- Used for pesticide containers for over 20 years – farmers very familiar
- Very good geographic coverage
- Often plenty of space available

Challenges

- Less convenient for farmers than return to retail, but not new to them
- Site management is paid through municipal taxes
- Some of these sites may no longer exist in the future

Collection Options

Municipal Sites

Option 2 – Return to Retail

Benefits

- Hundreds of agricultural retailers in the province – very good coverage
- Used for pesticide containers in Saskatchewan for many years
- Farmers already going to these sites regularly
- Good geographic coverage

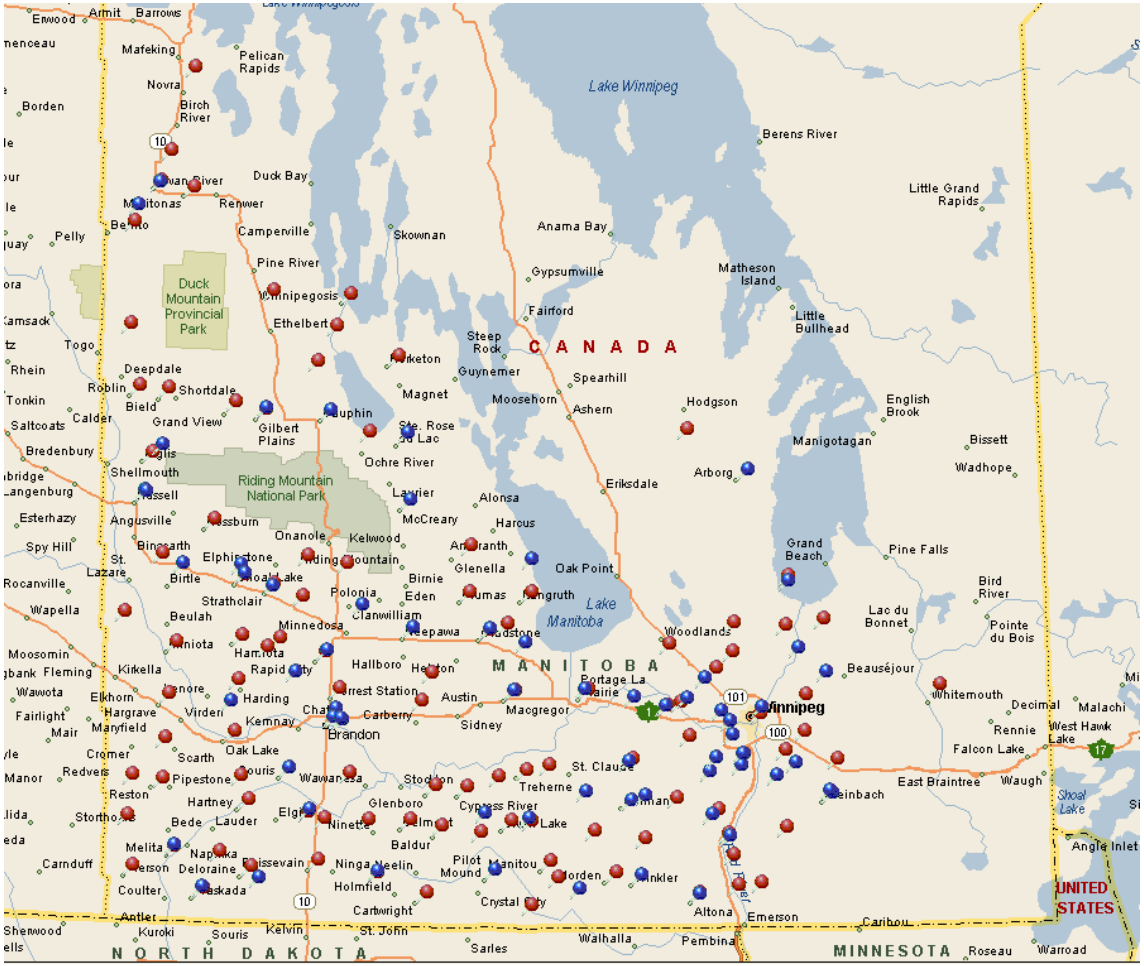
Challenges

- Space could be problematic for some materials
- Bio-security could be an issue for some materials
- Retailers could object to collecting materials they didn't sell
- Collection incentive may be required

Collection Options

CAAR Member Ag Retailer Sites

Collection Options



- Municipal Sites
- CAAR Member Ag Retail Sites

Option 3 – Mixed Model (Municipal/Retail)

Benefits

- Flexibility to fit products into appropriate location
- Improved access for some farmers
- Allows for reduction in municipal sites over time…or vice versa for retailers

Challenges

- Similar to options 1 and 2
- Retailers who don't participate may have unfair advantage over those that do
- Overall collection/transportation cost may increase

Option 4 – Single Stream Collection Blitz

Benefits

- Similar to CleanFARMS' obsolete pesticide collection program
- Used successfully in Moose Jaw for grain bags
- Good for products that are:
  - Bulky; or
  - Generated only at certain times of the year (i.e. grain bags); and
  - Can be stored on the farm until the collection blitz

Challenges

- Need collection site with appropriate space
- Blitzes can result in more material collected than can be managed

Option 5 – Combined Stream Collection Blitz

Benefits

- Economy of scale – can share administration costs

Challenges

- If retail sites are used – may object to collecting materials that weren't sold at that location

Option 6 – Mobile Farm Pickup

Benefits

- Scheduled pickups and ‘on-demand’ service
- UK and New Zealand use model for bale/silage wrap, twine, pesticide containers, etc.
- Convenient to farmers

Challenges

- Approx. 19,000 farms in the province - this would be very expensive

Option 7 – Mobile Farm Pickup via Reverse Distribution

Benefits

- Similar to Option 1, but uses companies already delivering products to the farm (i.e. feed and seed delivery)
- Convenient to farmers

Challenges

- Wastes may not be available at the same time as the new product delivery
- It is unlikely that all the Ag wastes could be picked up in this manner
- Companies would need some type of incentive to participate

Option 8 – Private Collection and Disposal

This is the current ‘status-quo’

Benefits

- No changes required by anyone

Challenges

- Landfills are filling up and some may close soon
- Many waste products already unsafely burned or buried
- Poor environmental management practices by farmers
- Poor stewardship by industry
- End of life costs borne by farmers and unfairly distributed (i.e. tipping fees at landfills vary substantially)

Key Messages

1. CleanFARMS is actively pursuing solutions for management of agricultural waste
2. In Manitoba, many agricultural waste materials are being buried or burned;
3. Farmers believe that proper management and stewardship of agricultural waste is important;
4. A combination of different types of sites could be the most efficient collection network for the products

Markets for Ag Wastes

CleanFARMS™

Corrugated Cardboard

Boxboard

Paper Laminates

Old Corrugated Cardboard

Location

- Mills located in Minnesota, Ontario and Quebec

Strength

- Very mature market
- Capacity of mills to take recycled material is high
- OCC prices vary from $100 to 135/tonne (net of freight cost)

Challenges

- Distance to markets means higher costs than those provinces with mills nearby

Boxboard

Location

- Mills located in Minnesota, Ontario and Quebec

Strength

- Very mature market
- Capacity of mills to take recycled material is high
- Boxboard prices vary from $10 to 70 (net of freight cost)

Challenges

- Distance to markets means higher costs than provinces with mills

Laminates

Location

- Mills recycling OCC (Minnesota, Ontario and Quebec) accept a small amount of laminates in the overall stream

Strength

- Very poor market
- Can be blended in with OCC, but to a maximum of 1% by weight only

Challenges

- Generates lots of ‘residue’ during recycling, requiring disposal

Agricultural Films

Markets

Ag Films (Bale/Silage Wrap, Greenhouse Film, Mulch Film)

- There are at least three processors who currently accept these materials for recycling:
  - (1) Merlin Plastics (BC and Alberta)
    - Aggressively pursuing all available waste Ag plastics
    - Alberta plant has the capacity to process 2500 tonnes per year (Vancouver facility has a capacity of 5000 tonnes)
    - The waste films need to be baled and dirt/organics contamination is not to exceed 5% by weight
    - Price paid is $100/tonne + a $50/tonne freight allowance --- this implies net revenue of approximately $80 to $100 per tonne

Markets

- **Ag Films (cont'd)**
  - (2) Poly-America (USA)
    - One of the largest manufacturers of heavy duty plastic bags for residential and commercial use
    - All four of their US plants accept waste Ag film for recycling --- closest plant is in St. Paul, Minnesota
    - The waste films are used in the production of construction film
    - Demand fluctuates with the demand for this end product
    - Price paid is approx. $50/tonne --- net revenue would be neutral to slightly positive
  - (3) NextLife (USA)
    - Two facilities in the US that currently accept waste Ag films --- closest is in Frankfort, Kentucky
    - Due to freight cost, net revenue would be negative

Grain Bags

Markets

- **Grain Bags**
  - There are now two Canadian processors who are taking these bags back for recycling:
    - Merlin Plastics
      - Participated in a Saskatchewan collection pilot in the spring of 2010 that collected 50,000 pounds of bags over a single weekend
      - Have used this as a 'springboard' to develop markets for the recycled material
      - Pricing and material spec is the same as for the other Ag Films
    - Crown Shred & Recycling
      - Established recycler in Saskatchewan
      - Just recently began accepting used grain bags from farmers
      - Considering a new plant dedicated to grain bags and, potentially, other Ag films

Ag Twine

Markets

- **Ag Twine**
  - Bridon Cordage / Gopher Plastics
    - Large manufacturer of Ag twine located just outside St. Paul, Minnesota
    - Began recycling waste twine into new twine approximately three years ago
    - Annual capacity of approximately 2700 tonnes per year --- currently running at 50 to 60% of capacity
    - Dirt/organics contamination spec --- they prefer a maximum of 5%, but 7-8% is tolerable
    - Moisture is the real issue
    - Price paid is $175/tonne (net of freight costs)

Net Wrap

Markets

- **Net Wrap**
  - Normally made from polypropylene, but can contain small amounts of other plastics like nylon
  - Merlin Plastics is looking for this waste material as well
  - Max. dirt/organics contamination spec of 5% may be more difficult to meet
  - Same pricing and expected net revenue as Ag films and grain bags

Seed & Feed Bags

Markets

- **Seed Bags**
  - Paper:
    - Largest percentage of these are used for canola and corn seeds
    - Residual contamination with herbicide and, in some cases, insecticide as well
    - Recycling is not an option
    - Incineration is most likely to be the preferred method of disposal (expensive @$2.00 per kilogram!)
  - Polyethylene
    - Generally used for cereal crop seed (pesticide contamination not an issue)
    - Can be recycled at Merlin's facility in Alberta:
      - Same contamination spec
      - Same pricing

Markets

- **Feed Bags**
  - Paper:
    - Split between plastic lined and unlined
    - Those with a plastic lining are difficult to recycle (same issues as paper laminates)
    - The unlined bags might be acceptable blended in with the boxboard
  - Polyethylene
    - Can be recycled at Merlin's facility in Alberta:
      - Same contamination spec
      - Same pricing

Markets - Summary

Material	Recyclable ?	Revenue ($/tonne)	% Recyclable
OCC	Y	100-135	91
Boxboard	Y	10-70	
Laminates	N	0	
Ag Films	Y	0-100	100
Grain Bags	Y	80-100	100
Net Wrap	Y	80-100	100
Seed Bags			
- Paper	N	(2000)	0
- Poly	Y	80-100	100
Feed Bags			
- Paper	?	?	?
- Poly	Y	80-100	100

Key Messages

1. CleanFARMS is actively pursuing solutions for management of agricultural waste
2. In Manitoba, many agricultural waste materials are being buried or burned;
3. Farmers believe that proper management and stewardship of agricultural waste is important;
4. A combination of different types of sites could be the most efficient collection network for the products
5. Processors are available to take almost all of the materials