



Questions Submitted for 5/19 Technical Meeting

Questions from Corleen Iarnnazzi (Hampden Resident)

- 1) At the first meeting, they kept saying it was close to a mile from residents. 3500 feet is really .66 of a mile which in my mind is barely more than ½ mile or at the least close to 3/4 mile. I would like to know where the measurements were taken. From the building to a property line? I have been out in that area in the winter time on skis and snowshoes and it isn't far so I would like to know the details behind the measurements.**

During the referenced Public Informational Meeting, representatives from MRC, Fiberright, and CES were trying to be consistent about the distance of approximately 3,500 feet between the southern corner of the processing building to the nearest residential home on Main Trail. Attendees within the audience mentioned distances and attempted to characterize the distances relative to a mile. The distance of 3,500 feet is 0.66 of a mile or about 2/3 of a mile. The site design is still underway, but the location of the facility is not anticipated to change much. The distance of the facility to residences and other items must meet the setback requirements of the Solid Waste Management Regulations (SWMRs) and applicable Town ordinances. The SWMRs require a minimum distance of 500 feet to the nearest residence. To help put this distance in context, the PERC facility is approximately 2,200 feet to the nearest Hampden residence and less than 1,000 feet to Orrington residences.

- 2) In the Technology Review of the Fiberright Process by the Forest Bioproducts Research Institute, it says possibility of accepting pulp or paper mill sludge to supplement MSW ...what kind of toxins will be released in the air? Does this material qualify under the minor source Air Emission license that they are requesting in the near future?**

Under the MRC/Fiberright proposal, there is no plan to accept pulp or paper mill sludge. If MRC and Fiberright want to consider additional types of waste, they would need to go through a separate permitting approval process before the Maine DEP.

- 3) In addition to question 3, what type of air emission license does the PERC facility have and what kind of chemicals are released into the air? Does it effect Acadia National Park?**

PERC has been issued a Major Source (Part 70) License (A-355-70). Major Source licenses are provided on the Maine Department of Environmental Protection's (MDEP) website (<http://www.maine.gov/dep/air/licensing/major-source-list.html>). PERC is licensed to emit the following pollutants:

Pollutant	Ton per year
PM	31.5
PM10	25.4

SO2	105.1
NOx	599.2
CO	315.0
VOC	63.1

Before receiving its license PERC demonstrated that their emissions would not violate Maine Ambient Air Quality Standards or Class I (Moosehorn & Acadia) and Class II Increments.

On request, the MRC can ensure that additional questions about the PERC facility are directed to the private owners or operator of the PERC Facility for responses. Note that the private owners and operators of the PERC facility are not involved in the Fiberight project.

- 4) Also in that same review, it says Proximity to Acadia National Park and Moosehorn Preserve could raise air emissions concerns. Acadia National Park is more than an hour from our house...what about the air emissions in Hampden? I would like a list of chemicals that would be released in the air from Fiberight.**

The Peer Review Study was performed prior to determination of the current design and scope of proposed Fiberight operation. In the time that has elapsed since the publication of the Peer Review Study, Fiberight has continued to refine the process and the necessary equipment to handle the MSW that will be generated by the MRC communities. Current emission estimates are much less than the emissions that would trigger regulatory concerns with Acadia National Park or Moosehorn Preserve. Based on the lower emission estimates, Fiberight will be applying to the Maine DEP for a Minor Source License rather than a Major Source License. In order to qualify to be considered a Minor Source, Fiberight will need to demonstrate that their emissions will be below the following threshold values:

- Less than 50 tons per year of VOC (volatile organic compounds)
- Less than 10 tons per year of any single Hazardous Air Pollutant (as defined in the Maine DEP regulations at [<http://www.maine.gov/dep/air/toxics/overview.html#What>])
- Less than 25 tons per year of all Hazardous Air Pollutants combined
- Less than 100 tons per year of PM (particulate matter), PM10, PM2.5, SO2, NOx, or CO
- Less than 100,000 tons per year of greenhouse gases in terms of CO2 equivalents (CO2e)

Emission calculations are underway and will be included in the air emission license application to be available in June. In accordance with the Maine DEP regulations, the calculations in the application must demonstrate that the emission from the facility are below the applicable thresholds and will not have an unreasonable adverse effect on air quality.

Questions from Bill Lippincott (Hampden Resident)

- 1) **In the University of Maine Technology Review of the Fiberight Process, Appendix E: Site Infrastructure and Permitting Considerations by James Atwell, P. E. of Sevee & Maher Engineers, December 2014, the opening paragraph states:**

"The available information on the Fiberight facility to be built in Maine is very limited. We do not have a detailed process flow diagram or a materials balance that is necessary to estimate the air, solid waste and wastewater emissions from the proposed facility. Therefore, it is not

possible to reach definitive conclusions regarding the specific permitting requirements that might be necessary for a full scale Fiberight facility to serve the MRC communities.”

When will a detailed process flow diagram and a materials balance to estimate the air, solid waste and wastewater emissions from the proposed facility be ready and available to the public for review?

The materials requested have been under development for several months, and several revisions of draft versions have been circulated among the technical members of the project development team and the MRC. The materials will be finalized and provided in license applications currently scheduled for mid-June, at which time the final version of the materials will become public information.

2) Further along in Appendix E, James Atwell comments re:

By-Products/Wastes:

“Information provided by Fiberight seems to indicate that the process is self contained and that there are no by-products that must be managed.

However, without detailed process flow diagrams and a mass balance, it is not possible to confirm these claims. Based on past experience with similar processes, there are several points in the Fiberight technology where byproducts, or waste materials, are expected to be produced that would require treatment and or management. For example:

Liquids from the unit processes, as well as liquids/wastewater from general washdowns will require treatment. Even though Fiberight indicates that wastewater emissions would be low, or non-existent, our experience is that impurities build up in the system over time and these impurities must be purged from the system. This liquid waste would require some form of treatment.”

Can Fiberight describe the form of treatment they plan to use?

Process water effluent is proposed to be treated at the City of Bangor Waste Water Treatment Plant (WWTP). Fiberight has provided process water effluent quality and quantity information to the Bangor WWTP for their review. Based on the outcome of this review, if pre-treatment of Fiberight’s process waste water is necessary, a pre-treatment agreement will need to be established between the City of Bangor and Fiberight and if necessary pre-treatment facilities will be installed at the Fiberight processing plant.

3) Re Wastewater: “Assuming that there will be some liquid waste produced by the Fiberight technology, some provision for treatment/management will be required. Specific requirements cannot be determined without more detailed information on the quantity and character of the wastewater”

When will Fiberight be able to give more detailed information about the quantity and character of the wastewater?

Fiberight has prepared effluent quantity and quality information for the process wastewater. This information has been provided to the Bangor WWTP for review. This information will be submitted as part of the MDEP license applications which is scheduled to be available for public review by mid-June.

- 4) **Re Air Permit: “Even if the waste processing portion of the facility does not exceed air permit threshold limits, the power generation portion of the project may require an air permit. Based on the estimated emissions from the facility, a determination will be made to determine if the facility would be permitted as Major Source under Chapter 115 (and related Federal Regulations). If certain thresholds are met, it may also be necessary purchase emission offsets for NOx, VOCs, PM10 and CO.**

Is it possible the facility will generate air emissions of NOx, VOCs, PM10 or CO that exceed federal thresholds? How likely is that on a scale of 1-10?

There is 2 MW of power generation proposed for the site, which is included in order to meet the power needs of the facility itself. Preliminary facility-wide emissions estimates are less than the threshold amounts provided below. With 1 being the least likely possibility of Fiberight exceeding the Minor Source threshold values or needing to purchase offsets, the probability is 1.

- Less than 50 tons per year of VOC
- Less than 10 tons per year of a single Hazardous Air Pollutant
- Less than 25 tons per year of all Hazardous Air Pollutants combined
- Less than 100 tons per year of PM, PM10, PM2.5, SO2, NOx, or CO
- Less than 100,000 tons per year of greenhouse gases in terms of CO2 equivalent (CO2e)

Because project emissions will be below all applicable Minor Source thresholds, there is no need to purchase any emissions offsets of any kind.

- 5) **We heard at the last public meeting about the Fiberight proposal that there could be an announcement soon regarding financing of various Fiberight projects, including the Iowa plant. If a financing of the Fiberight project is not complete by June, could that mean a delay in breaking ground on the Iowa plant beyond June? How would that affect the timetable for the Hampden project? What is the probability that the Hampden facility will not be ready to operate by 2018?**

Fiberight presently has two well-respected, experienced entities competing to finance and construct the project. We have commissioned new equipment for installation in our Virginia plant to match design basis for Hampden. We anticipate our Iowa project will be on line in 2016, but we do not anticipate that changes in that schedule would delay the timetable for the Hampden facility. We further have two private projects, as well as a project in the United Kingdom that may be constructed and operational in early 2017. We consider these projects to be back-up reference projects to the Iowa project. Thus with quality sources of finance, and several backup projects in place with similar design basis to Hampden, we believe the probability that the Hampden project will be unable to operate by 2018 to be extremely low.

Questions from Barbara Veilleux (Penobscot County)

1) What specific items would not be accepted at the Fiberight facility?

The Fiberight facility will accept the same MSW stream that the Charter Municipalities have historically delivered to the PERC facility. The Fiberight facility would not accept the same items that are not accepted under the existing PERC waste disposal agreements. The PERC agreements exclude the following items from the definition of Acceptable Waste: 1) construction/demolition debris; 2) liquid wastes or sludges; 3) abandoned or junked vehicles; 4) Hazardous waste; 5) dead animals or portions thereof or other pathological wastes; 6) water treatment facility residues; 7) tree stumps' 8) tannery sludge; 9) waste oil; 10) white goods and 11) waste which in the reasonable judgment of the facility operators based on a visual inspection at the time of delivery could, if processed, result in damage to the facility, interruption of normal facility operations or result in extraordinary processing or maintenance costs.

2) How will they deal with items that are exempted but end up in the trash stream? (ie; small propane tanks, etc.)

The waste receiving and handling process as well as the Primary and Secondary Sorting Systems provides for multiple opportunities to identify and remove non-processible items from the incoming waste stream. Immediately after the trash is deposited on the tipping floor, either a loader or grapple type materials handler will spread the waste to make a first inspection of the delivered materials for non-processible items. The material will then be stockpiled in the tip floor storage area prior to being fed to the Primary Sorting System. The trash will be deposited on an inclined feed conveyor which transfers to a QC Sort conveyor where sorters will remove any non-processible items prior to the material being introduced into the Primary Trommel. In the trommel any items larger than 16-20" will pass through the trommel and be routed to a shredder via another QC Sort Station where any additional non-processible materials can be removed for disposal. Lastly, the material that passes through the trommel 16-20" opening passes over a fines separation screen where any material over 2" is directed to the pulper feed tipping floor which gets fed to the pulper. This material is manually fed to the pulpers, so again a loader or grapple operator will be looking for any non-processible items for removal prior to loading the pulper feed conveyors. Any non-processible items that pass through the pulper are screened again on a material separation screen which separates 2/3 dimensional objects such that any non-processible items that make it this far into the process will be removed in the Secondary Screening Process.

3) How will plastic bags and film be processed?

The films and plastic bags contained in the waste stream are removed downstream of the pulping process in which the pulped biomass has been removed leaving the majority of the recyclables, including the films and plastic bags. The stream is passed over a material separation screen which separates the 2-dimensional (2-D) objects (i.e. un-pulped cardboard and paper, films and plastic bags) from 3-dimensional (3-D) objects (i.e. plastic containers, etc.). The segregated 2-D stream is fed to a sorting line where the un-pulped cardboard and paper is removed and returned to be re-pulped. At the end of the sort line, the films and plastic bags are removed via a vacuum hood and collected for baling and transferred off site for sale as recyclable film.

Questions from Sarah Lakeman (NRCM)

1. Explain how Fiberight adheres to the solid waste management hierarchy if there is zero incentive to reduce and reuse?

The MRC business arrangements will use unprecedented measures to provide the municipalities and their residents with incentives for waste reduction and waste re-use. Individual towns will not need to provide any guaranteed annual tonnage or GAT (GAT) to Fiberight and will not be exposed to any penalties for delivering less waste than had been guaranteed. Rather, the municipalities will have a positive right to continue or expand and waste reduction, re-use or recycling programs that they are to conduct. To the extent that guarantees are provided to support the financing, they will be provided by the MRC, which will insulate individual municipalities from GAT shortfall penalties precisely to avoid disincentives for waste reduction and re-use programs. The nature of the guarantee to be provided by the municipalities will be in the form of an exclusive obligation to deliver waste collected under their control to Fiberight and not to any competing facility.

2. Explain the indoor air quality and the emissions from the facility. What happens to the toxics (like mercury) that may exist in some of the waste?

The waste handling, pulping and wash areas will be ducted to a set of wet scrubbers, continually pulling air from those areas. The scrubbers will remove any excessive moisture, dust and the organics present in the air in those areas. The result of continually pulling air from these areas will normally impart a slight negative pressure in the building targeted to be on the order of 0.1 inches WC.

Any toxic materials contained in items that are not removed in the front end waste receiving/handling and sort systems could potentially be released into the downstream wet process. Toxics that are released into the back end wet process will be removed from the biomass in the wash system effluent and the biomass pulp in the pre-treatment system purge with these streams being processed in the AD Feed Prep System Dissolved Air Flotation (DAF) unit and removed in the DAF sludge stream. The sludge is dewatered utilizing a fine cloth belt press with the solids that contain any of the toxics, sent to a secure landfill for disposal.

The Fiberight facility provides Fiberight and the MRC with a unique opportunity to work with its towns to ramp up efforts to divert toxics from the waste stream and would seek support in those efforts from entities having experience and appropriate expertise in this area.

3. Would you support a policy that all towns/businesses etc. that send material to Fiberight must do what they can to pull out as much recycling and organics as possible before sending waste to your facility?

Regarding recycling, those decisions will be made at the local level and not by Fiberight or the MRC. Every town has different needs and circumstances. Towns that seek to continue or expand their diversion programs can do so. All towns can take comfort that an increasing amount of the materials not being source separated for recovery now will be recovered by Fiberight

Regarding organics, towns can continue their existing programs to compost yard waste, encourage home composting, etc; however, it would not make sense for those towns to divert organics to a different facility that would compete with Fiberight.

- a. **I understand that you would accept source-separated recycling and organics. Would there be a fee-structure that incentivized source-separation?**

Obligating source separation of organics rather than processing them through the Fiberight system would be a poor resource utilization choice that would undermine the waste management hierarchy rather than support it. The fee structure associated with source separated recycling would be set at a level to encourage more source separated recycling than is currently done.

The municipalities, not Fiberight, will decide on whether to continue, expand or discontinue source-separation programs.

- 4. What kinds of education will you be doing to encourage towns to source separate and remove toxics from the waste stream?**

This is still under consideration. Fiberight and the MRC prefer to have Fiberight accept MSW with a minimum of toxics content: however, we are committed to accept the same breadth of materials that PERC accepted. Part of program will be working with municipalities to encourage separation and proper management of materials that should not be delivered to Fiberight. We are open to working with MRRRA and any other organization that shares this goal.

Work will continue with towns to educate residents and businesses on the importance of avoiding the entry of toxics into the waste stream.

- 5. In your opinion, is a single stream facility more effective at processing recyclable commodities than a dirty MRF? (That's actual recycling, not diversion)**

The Fiberight process for recycling is not a dirty MRF. The point at which source separated recyclables enter the Fiberight process will be comparable to the performance of a stand-alone single sort processing facility.

- 6. How many people would Fiberight employ?**
 - a. **Are these mostly upper level/lower level jobs?**
 - b. **How do these jobs compare with the jobs at PERC? Would you try to hire PERC employees who would be losing their jobs?**

Fiberight will employ between 65 and 70 people at the site. The facility will require a mix of management/supervisory positions as well as a range of both entry level and experienced hourly positions. Entry level positions will be compensated in excess of \$45,000/year, technical and supervisory positions in excess of \$60,000 /year, with some scientific and managerial positions earning over \$100,000/year.

Fiberight intends to offer and advertise positions in the immediate area first, noting that in addition to waste experience we are interested in those with pulp and paper industry experience.

- 7. Can the “fibers” from the organics processing be used in soils that grow food? If I were a farmer, I would prefer compost that wasn’t contaminated with potentially hazardous material.**

The Fiberight process will not produce compost. We agree with your assessment that quality control and contamination of product at many traditional composting facilities is a serious issue leading to large volumes of compost that are unmarketable in the food chain and are either used in low-grade landscaping applications or are eventually landfilled, which is an inefficient use of resources. We would much prefer to process organics into hydrocarbon fuels and products that reduce the consumption of fossil fuels.

- 8. I understand that Fiberight must collect 150K tons of waste in order to become economically viable, and the MRC communities generate about 185K. Have you estimated the tons of currently source separated recycling and organics from MRC communities that would potentially go to Fiberight? Please explain.**

At this point, the MRC and Fiberight assume that NONE of the currently source separated recycling and organics from MRC communities would go to Fiberight. Whether or not that happens will be a decision of the local municipality, not by the MRC or Fiberight.

Encouraging source separation of organics for delivery to Fiberight would be a waste of resources and lead to more environmental impact, not less environmental impact. To date, the diversion rate for area communities that have implemented single-stream recycling is quite low and it is difficult to predict what rate of diversion gain to expect and whether towns will stay with their existing service providers or switch to Fiberight. We do expect diversion increases as programs expand and mature.

- 9. Are you actively trying to sign other towns, outside of MRC, into long-term contracts with Fiberight? Which communities have you reached out to?**
a. When is the deadline for contracts signed with Fiberight to move forward?

Our focus is to provide a replacement system for the MRC communities and other communities in the region that have historically used PERC. We have reached out to all of these communities. Also, the MRC has historically had an open door policy for any Maine municipality interested in joining, as evidenced by the growth in membership from 1991 to the present. The MRC has presented at the MRRRA conference and elsewhere to appeal to all Maine municipalities. Practically speaking, there are many cities and towns in southern Maine that are much closer to other facilities that will not come to the Fiberight facility or join the MRC – but they are welcome if interested and if capacity is available. The deadline hasn’t been set in stone to the day, but the deadline looks to September 1 or October 1, 2016.

- 10. For the MRC, what other types of facilities and waste management options have you considered (aside from the Argyle landfill option)? Did any of those options include expansion of recycling and composting infrastructure?**

The MRC has been investigating a wide variety of waste management systems and technologies since 2007. Please be aware that the MRC serves a very rural and spread-out service territory that is quite different in character from southern Maine. Less than half of the waste in MRC towns is collected through curbside collection. Much travels long distances in containers or trailers, or sometimes in packer trucks that also serve as the point of waste drop-off.

The MRC has investigated single-stream recycling and decentralized composting strategies, but these strategies do not appear to be best for the municipalities in our service territories. Single-stream recycling works best with regular curbside collection service, strong public educational support, and use of large containers – but many of our towns do not have curbside collection and cannot support the cost of extensive public education efforts or large bin distribution. Composting is a valuable strategy for managing yard waste, because little additional space or equipment is required. Adding food waste to yard waste compost requires additional equipment and operational strategies, including security and animal control, which diminishes the overall value. Moreover, compost does not have sufficient value to justify transportation costs over long distances.

So far as technology search, in 2013, the MRC issued a Request for Expressions of Interest, which it advertised nationally, to solicit proposals from technology vendors across the US. MRC received and considered 15 proposals from around the world. The responses presented three levels of diversion: 10% to 20% with mixed waste processing; 30% to 50% by adding anaerobic digestion and 75% to 85% with advanced organics processing. The responses included a wide variety of approaches that included dirty MRFs, regional anaerobic digestion facilities, mixed-waste composting, gasification, pelletization, and other approaches. Some vendors with technologies that might have been attractive did not respond simply because Maine is too small or too remote for their approaches – and the MRC did not want to procure a facility that would be too big for Maine. After extensive evaluation, the Fiberight facility was selected as being the best match for the MRC. More information on this process is available on the MRC web site.

The Argyle landfill option was part of an integrated approach to bring the Fiberight technology to Maine. We sought to publically own and control disposal capacity, which has been the policy goal of the State of Maine since 1989, but it has yet to be accomplished.