

**From:** Caterini, Rose  
**Sent:** Tuesday, October 23, 2012 12:24 PM  
**To:** Biggs, Carolyn  
**Subject:** FW: Farming in toxic PFOS contaminated Ditch 1, Hamilton International Airport (update)  
**Attachments:** 120713soybeans.JPG; 121016good.JPG; 121016harvested.JPG

**From:** Joe Minor  
**Sent:** Sunday, October 21, 2012 02:58 PM  
**To:** clerk@hamilton.ca; Scremin, Frank <fscremin@flyhi.ca>; info@flyhi.ca <info@flyhi.ca>;  
Minister.moe@ontario.ca <Minister.moe@ontario.ca>; ag.info.omafra@ontario.ca  
<ag.info.omafra@ontario.ca>; Ted McMeekin, MPP; info@npca.ca <info@npca.ca>  
**Subject:** Farming in toxic PFOS contaminated Ditch 1, Hamilton International Airport (update)

Where are the soybeans from the toxic PFOS contaminated ditch at the Hamilton International Airport?

TIME SENSITIVE MATERIAL: PLEASE RESPOND ASAP

This is a working document. As I find out more information, it will be added to the end as supplemental information. If there are any errors, please send the data that substantiates the claim of an error and I will correct the relevant sections.

To: All Members of Hamilton City Council c/o the Clerk, the private sector operator of Hamilton International Airport, MOE, OMAFRA, NPCA, others

Please include this message in the official (public released) communications for Council.

I am requesting the public's assistance in finding the soybean crop that was harvested from the toxic contaminated Ditch 1a at the Hamilton International Airport. If you know anything about this crop please let me know.

The approximate location of the crop in question was:

43.162825°, -79.941780° (you can paste these coordinates into Google Earth)

This location is just inside the airport fence, north of Airport Road near the southwest corner of the Hamilton International Airport.

This crop was harvested sometime between July 13th, 2012 and October 16<sup>th</sup>, 2012. Please see attached photos: "120713soybeans" and "121016harvested".)

The concern is that this crop was planted in a location that was known to be badly contaminated with PFCs (including PFOS and PFOA). More details about why this is a concern will follow, but I want to get this request for information out now.

In summary:

Upstream of where this crop was grown is the highly contaminated fire fighting practice pad at the Hamilton International Airport. When there is precipitation, it washes PFOS/PFOA out of the pad. The heavily contaminated water and suspended sediments then travel down Ditch

1 (where the soybeans were planted). What isn't trapped there proceeds downstream to the Welland River and Lake Niapenco (Binbrook Conservation Area). The levels of contamination are so high that the turtles and carp 9 kilometers downstream are the most heavily PFOS contaminated turtles and carp in the world.

The crop that was harvested was planted directly in the path of this heavily contaminated flow of PFOS/PFOA. While surrounding slopes were also planted, the crop on the slopes largely failed due to the drought this summer. A significant portion of the harvested crop only grew because it was growing in the contaminated water and wet soil in the bottom of Ditch 1a.

I do not know why this crop was harvested, because I had previously repeatedly expressed concerns about farming in this badly contaminated ditch.

I first raised this concern during a face to face meeting with Mr. Scremin (Hamilton International Airport) on May 5th, 2011.

I then put these concerns in writing and sent them to Mr. Scremin (HIA), the City, and the MOE on May 11th, 2011:

"Farming. The fields around the practice site are still being farmed (e.g., soybeans). Hopefully the resulting crops are not contaminated, but this needs to be checked. The greatest concern would be for the fields south of the practice pad (along the contaminated creek). I am assuming that these fields are not irrigated from either surface water (e.g., the retention ponds) or groundwater (the well casings). If the fields are not irrigated, the question is how much of the surface soil is contaminated (or not) from shallow water movement along the clay layer. Hopefully the bulk of the contamination is contained by the berm and is released mostly down the creek. Since the sediments in the bottom of the creek (e.g., 43.164101°, -79.941295°) are likely to be contaminated, any equipment that crossed the shallow creek channel could have spread PFOS up the adjacent slopes."

This concern, raised twice a year and a half ago, appears to have been ignored because the next year a new crop was planted in Ditch 1. So I sent my concerns in writing again (to the City and the MOE) on May 26th, 2012:

"It appears that FARMING IS TAKING PLACE both near and IN THE TOXIC CONTAMINATED SITE ITSELF. ... Since data from the Ontario Ministry of the Environment indicates that Ditch 1 is in fact part of the toxic contaminated site (PFOS is present at toxic levels), farming in the toxic contaminated site at the Hamilton International Airport raises several concerns.

First, by plowing in the ditch and then out onto adjacent farmland, PFCs/PFOS are being spread over the farmland.

Second, by disturbing the toxic contaminated Ditch 1, migration of PFCs/PFOS may have been increased (either to surface water, or ground water, or both).

Third, by allowing farming to take place in a toxic contaminated site, whoever is responsible for the regulation of local agriculture is risking serious damage to the reputation of the quality of Hamilton's local agricultural production.

I do not know what was planted, but I do hope it was not a food crop.

Since I first raised concerns about farming in/near the toxic contaminated site at the Hamilton International Airport about a year ago, it appears that once again my concerns have been ignored.

At a minimum, some responsible government agency (MOE? Agriculture?) needs to establish buffers around the toxic contaminated zones (including Ditch 1). I am shocked that this has not already been done. The fact that this area was contaminated with PFCs/PFOS has been known to regulators either since the 80s (when the toxic materials were first sprayed on the site) or at least since April 2010 (when the operators/regulators "remembered" what had happened at the airport). The public was told about this mess in March 2011 (not by the operators/regulators, but by me). The fact that farming is still being allowed in the toxic contaminated site is inexcusable.

Hamilton needs to move rapidly to ensure that buffers are established around the toxic contaminated zones. The reputation of Hamilton's agriculture is at stake."

I am asking for the public's assistance with two things:

) Does anybody know what was done with the crop that was harvested from the toxic contaminated Ditch 1a?

) Does anybody know what it would take to get reasonable buffers established around Ditch 1?

If you can help with either of these, please let me know.

Thanks,

Joe Minor

#### SUPPLEMENTAL INFORMATION

The soybean crop was harvested from the toxic PFOS/PFOA contaminated Ditch 1a sometime between July 13<sup>th</sup> and October 16<sup>th</sup>, 2012. The harvest could have been either of the soybeans themselves (possibly for food), or of the nutrient plants (for animal feed, e.g., silage). Since PFOS biomagnifies up food chains, either type of harvest could be a concern.

Ditch 1a is highly contaminated with PFOS/PFOA, because it is the main conduit between the source of the contamination and the significant contamination that extends from Ditch 1a for more than 50 km downstream (1,2).

In fact, the first (publicly released) sample data that established that the airport was the major source of the PFC pollution to the Welland River was collected not by regulatory authorities, but rather by a volunteer member of the general public. The sample was collected from Ditch 1 just a few meters downstream from where this crop was planted/harvested (4). (The Ministry of the Environment would later label this location "Ditch 1a"). The sample was collected at N 43.16274° W 79.94191°. This sample was submitted to a certified testing laboratory and the Certificate of Analysis **RESULTS OF ANALYSES OF SEDIMENT** was:

Perfluoro-1-Octanesulfonate (PFOS) 170000 ng/kg

Perfluoro-n-Octanoic Acid (PFOA) 4600 ng/kg

The Ontario Ministry of the Environment later released its data for "Ditch 1a" and "HIA Pond" (3). "Ditch 1a" is

just a few meters downstream of where the crop was planted/harvested, while the "HIA pond" is about 380m upstream. The MOE reported that the sediment in Ditch 1 was contaminated with 230000 ng/kg of PFOS at Ditch 1a and 1011000 ng/kg at the HIA Pond. The MOE concluded its report (3) with the following statement:

"Existing PFOS contaminated sediment within the Welland River should be considered a potential source of PFOS because when sediments are disturbed they can be re-introduced into the water column and result in uptake by aquatic organisms." (3)

The Hamilton International Airport fire fighting practice pad is the source of significant PFOS contamination that extends for more than 50 km downstream (1,2). The harm done by disturbing the contaminated sediments increases exponentially as one approaches the source of the contamination. In the entire 50 km zone of contamination, there is less than a half kilometer that is closer to the source of contamination than the location where this crop was planted/harvested. The crop planted/harvested upstream of Ditch 1a therefore ranks in the 99+ percentile as the worst place to be planting/harvesting a crop. In fact, since there are huge areas of significantly less contaminated zones off to the sides of the contaminated watercourse (even at HIA), then planting in this location gets a mark of less than 1% for intelligence.

The MOE also measured PFOS contamination of water at locations "Ditch 1a" and "HIA Pond". Ditch 1a (immediately downstream of where the crop was planted/harvested) was contaminated with 8600 ng/L of PFOS. The HIA Pond was contaminated with 49,000 ng/L of PFOS. In its report (3), the MOE noted that these were toxic levels of PFOS. The airport operator, the City, and the MOE all allowed a crop to be planted in a Ditch that was contaminated with toxic levels of PFOS. The City and the MOE allowed this crop to be harvested even though they had been warned that the crop had been planted in a location containing toxic levels of PFOS. How much lower than 1% should the intelligence score be lowered for these additional failures?

In 2011, the MOE conducted a review of the remedial measures proposed by the private consultant paid by the private sector airport operator (see reference 5). The review included a discussion of the area of Ditch 1 where the crop was (later) planted and harvested:

"Treatment of on-site contamination of surface water in the pond; sediment in the tributary that the pond discharged to; and sediment in on-site tributaries located along the southern and western edges of the property which showed impact are considered "secondary" contamination and remedial options will be investigated after the training pad and pond are remediated. I'm not really satisfied with this as a) the water in the pond can be dealt with at the same time as groundwater is being treated, and b) the on-site ditches will still be contributing PFOS from sediment to surface waters which will be moving off-site. It is likely that cementing the bed of the tributaries won't be an acceptable option, but the proponent should at least investigate the potential of redirecting flow from these tributaries (which is essentially stormwater runoff from the airport property as the tributaries start on the HIA property) so that contaminated waters do not move off-site." (5)

The MOE reviewer felt that the area where the crops were later planted/harvested was so contaminated that it needed some remedial action attention. The reviewer felt that the potential for this area to "contribute PFOS from sediment to surface waters" was high enough that remedial action for this very spot should not be delayed. Nowhere did the reviewer propose that dragging farm equipment across the contaminated zone (multiple times), planting a crop, & harvesting a crop were remedial actions. To the contrary, these actions would exacerbate the problems highlighted b, both MOE reviews (3,5).

IT WOULD BE VERY EASY TO DO BETTER

You don't have to look far to see how this could have been done better – all you have to do is turn around and look across the road.

Please see photo “121016good”. This photo is taken from the same location as the other two. To take it all I had to do was turn around and look across the road downstream along Ditch 1 (outside the airport fence). Please note the nice buffer around the stream bed.

Contrast this with what occurred where the soybean crop was planted inside the airport fence (photo “121016harvested”, looking upstream along Ditch 1). Notice that farm equipment was drug across toxic contaminated Ditch 1, and soybeans were planted (then harvested) in the wet channel.

So, the commonsense practice of leaving a small buffer around the toxic contaminated Ditch 1 is being followed downstream of the airport (where it is less contaminated), while in the airport (where it is more contaminated) soybeans were planted and harvested out of the Ditch itself. If the airport (and the City and the MOE) could only use the same care and caution around toxic contaminated Ditch 1 on the airport grounds as is used across the road from the airport, then I wouldn't be bothering you with this information.

#### References

) “Highly elevated levels of perfluorooctane sulfonate and other perfluorinated acids found in biota and surface water downstream of an international airport, Hamilton, Ontario, Canada”. DeSolla, DeSilva, and Letcher. **Environment International** 39:19-26, 2012.

) “Guide to Eating Ontario Sport Fish, 2011-2012”. Ontario Ministry of the Environment. 2011.

) “PFOS in the Welland River and Lake Niapenco”. Craig Fowler, Ontario Ministry of the Environment. March 8, 2012.

) Certificate of Analysis. PFOS in sediment. JOB #: B148335. Sample collected 9:18AM, April 9<sup>th</sup>, 2011. Report date April 20, 2011. Maxxam Analytics.

) MEMORANDUM RE: HIA PFOS Limited Subsurface Investigation. Review for surface water issues with regard to the remedial options for PFOS at the Hamilton International Airport, Hamilton. Ontario Ministry of the Environment. August 5, 2011. (Note: in the Table “ng/L” should be “micrograms/L”.)

