SciencesPo
ÉCOLE DE JOURNALISME

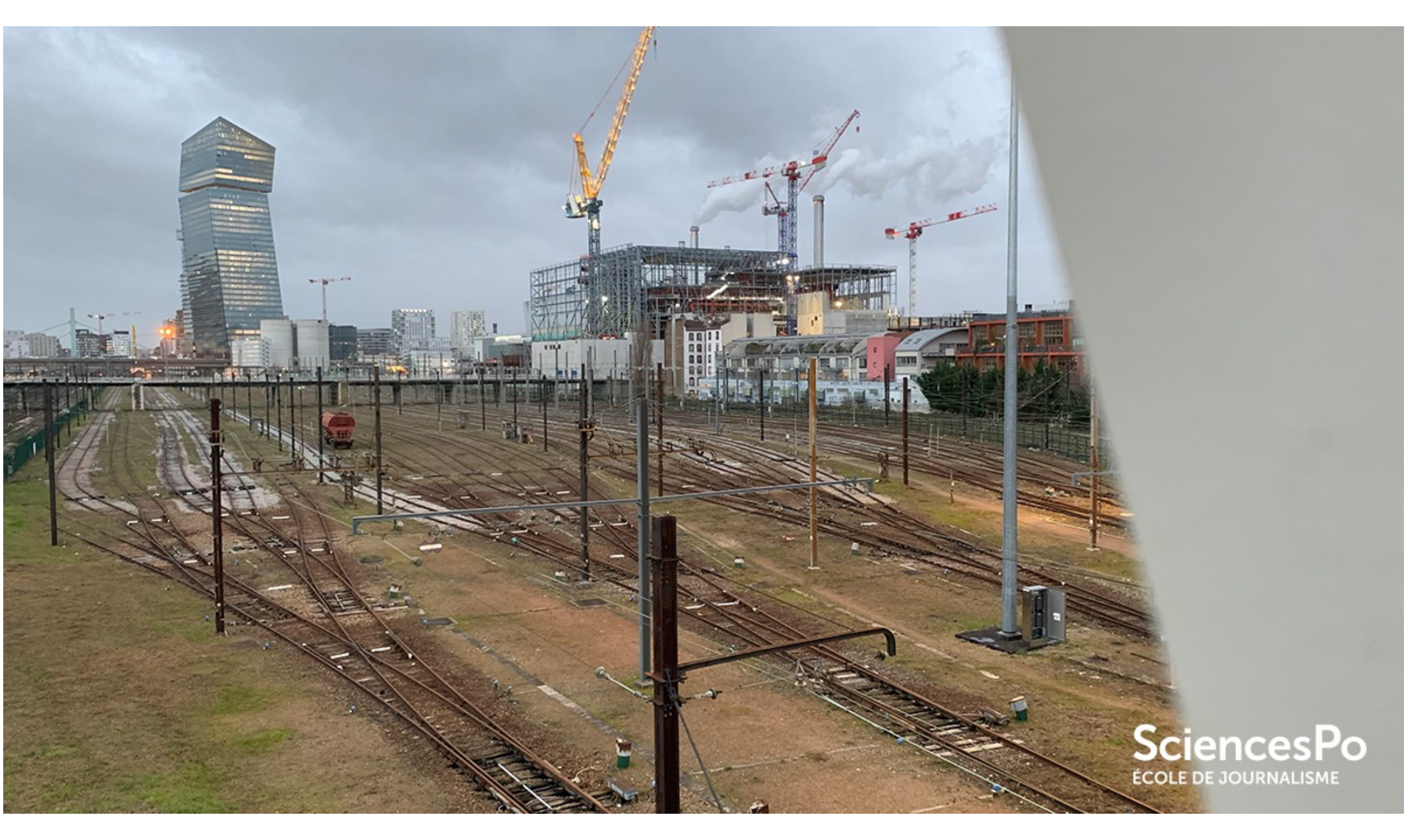
Présidentielle 2022 – French Election 2022

Le site des étudiants de l'École de journalisme de Sciences Po pour couvrir l'élection présidentielle française.

The fumes of wrath: in a Paris suburb, the largest waste incinerator in Europe could be poisoning locals

« Précédent / Suivant »

École de journalisme de Sciences Po / 19 avril 2022 / Investigation



The two chimneys of Ivry-sur-Seine's waste incinerator have been releasing their white fumes into the sky of Paris for more than 50 years. Now, after a study uncovered "exceptionally high" levels of certain pollutants around the plan, locals wonder if the fumes have been poisoning them.

One morning in February, Saskia Berthod, 50, received a message from her partner in the family's WhatsApp group they share with their two children, with a link to an article titled "Exceptionally high dioxin levels around the Ivry-Paris XIII incinerator." When she read it, she was thunderstruck: it took her days to process the gravity of the news.

For 17 years, Berthod has been living with her family in a residential neighborhood in Ivry-sur-Seine, a quiet suburb southeast of Paris and less than two kilometers from Europe's largest waste incinerator.

Twelve years ago, Berthod's partner, David Quesemand, decided to build a small wooden coop in their backyard, big enough for three hens, to get rid of their organic waste and enjoy homegrown eggs. They have since eaten eggs at least once a week – and more frequently for her eldest, 18-year-old son, who "only knows how to cook an egg," Berthod said.

That February morning, in the text, Quesemand told her that they had been poisoning themselves. "It was very violent," Berthod said. Often, she would look at the incinerator's fumes from her window. She tried to reassure herself: the wind was blowing the fumes away, so maybe her family would not be affected. "I told myself, we'd been turning a blind eye for years. I was mad at myself, more than at this incinerator."

Revealed in the Le Monde article Berthod received from her partner, a study commissioned by the local environmental group 3R Collective (Reduce, Re-use, Recycle), that has been opposing the incinerator for more than a decade, found "exceptionally high" concentrations of dioxins within a three-kilometer radius around the plant – an area home to 365,000 people. Dioxins are toxic chemicals known to cause cancers and diabetes and are among the pollutants found in waste incinerator fumes.

Carried out by Dutch NGO ToxicoWatch, the study measured levels of dioxins on eggs from private coops – including Berthod and Quesemand's – that were up to 5 times higher than the European legal limit on food safety. "I was happy to offer our eggs for an environmental study – a lot less happy about the result," Quesemand said.

If these eggs had been produced in professional poultries, they would have been too polluted to be put on the market. The study also detected concentrations of dioxins on trees and moss in the area that were among the highest measured by ToxicoWatch in Europe.

Waste incineration has been used for over a century as a simple, efficient way to get rid of domestic waste all over the world. However, recent cases reveal this method might not be as safe as portrayed by waste management companies, even with the addition of special filters since the 1990s. Last year, a similar case of dioxin pollution around a former waste incinerator in Lausanne, Switzerland, made headlines throughout Europe. Soil measurements performed after high levels of dioxins had been discovered throughout the city established a clear link with the now closed incinerator.

In Ivry-sur-Seine, corporate documents that contain monthly averages of dioxin emissions previously unavailable to the public, were accessed by Sciences Po's Journalism School (EDJ), and reveal inconsistencies in the management of the plant, in at least two instances.

When she read the news article about the study in Ivry, Berthod immediately thought of her son: "I thought 'shoot…when he eats eggs, he doesn't eat just one, but two.'"

"When we heard the news," she added, "we stopped eating our hens' eggs overnight."

Gone with the wind, stuck in the soil

Dioxins are a type of organic pollutant that can form in the chimneys of waste incinerators when the temperature is between 250 and 400C. The Ivry furnaces burn waste at 900C—high enough to eliminate dioxins—but the temperature decreases when the ovens are stopped for maintenance purposes, or during incidents.

Once released into the air, dioxins naturally settle into the soil, which can then remain polluted for decades. There, they are transferred into the food chain—say, when a hen is pecking on the ground — where they are absorbed in fat components, like egg yolks.

Although dioxins' detrimental effects on health are widely acknowledged – the World Health Organization (WHO) classifies them as "known human carcinogens" – little is known about the health risk posed by waste incinerators.

A rare 2005 study from France's Public Health Agency found that women who had been heavily exposed to the fumes of waste incinerators in the 70s and 80s were 6% more likely to develop cancer in the following decade, while men were 23% more likely to get myelomas, a rare bone marrow cancer.

The issue of waste incineration has remained largely unaddressed in the run-up to the presidential elections, as France – which is home to 127 waste incinerators, including 15 in Ile-de-France, the region surrounding Paris – readies for the second round.

The only time waste incinerators were mentioned by one of the candidates during the first round campaigns was by Green presidential candidate Yannick Jadot. In March, Jadot held an improvised campaign event near the Ivry-sur-Seine plant, where he told Le Parisien of the need to "put an end to these industrial aberrations which take part in the destruction of our environment."

According to an analysis carried out by Franceinfo with the help of The Shifters—an NGO dedicated to uncovering France's energy transition—Jadot's programme on waste sorting is the only that comes "close" to France's environmental commitments from the 2015 Paris Agreement.

A war on words

Every year, close to a quarter of a million tons of domestic waste transforms into the white fumes of the two furnaces of Ivry's 53-year-old incinerator. The unsorted trash comes from the homes of people living in one of 15 nearby municipalities, including most of Paris, which are the operating grounds of Syctom, the public body responsible for sorting domestic waste in the Paris area. The trash is then sent to the Ivry plant where it is burned.

On the day the ToxicoWatch study was published, Syctom issued a reaction statement, which reads: "Syctom treats environmental questions with great caution, uses the best available technologies and acts in full compliance with rules, in the fullest transparency." Referring to the study's conclusions, it also noted that "the link between the incinerator and the performed dioxin analyses is notably not established", suggesting that pollution could have come from other sources.

Anne Connan, secretary of the 3R Collective, does not deny that the study is "very limited." As a small NGO with limited resources, they focused on a strategy that was "within their reach", Connan said. "It was meant to alert," Connan explains. "When we did it, we didn't really know if we were going to find anything. And actually, we did, and that's precisely what's problematic."

Connan's house, where she has been living for 26 years, is less than 500 meters from the incinerator. "The perception in the neighborhood is that this incinerator doesn't work as well as what we're being told," Connan said. "I often wake up around 3-4am having trouble breathing because there's something acrid in my throat, and many people are telling us the same thing."

The chimneys and fumes of the incinerator can be seen from afar while walking in Ivry-sur-Seine – like here in a nearby street close to Connan's home, on March 21.

Ten days later after it released its statement, Syctom published a YouTube video in which its technical services' general director, Pierre Hitzberger, further minimised the incinerator's responsibility. He explained that "the maximal dioxin concentrations found by the (ToxicoWatch) foundation refer to coops that are not under the plant's dominant winds."

Nathalie Chèvre is an ecotoxicologist at the University of Lausanne, where she studies the negative effects of pollutants on the environment. "You can always argue that the causal relationship does not exist", Chèvre explained, but "an incinerator, especially before filters were set up, clearly was an important source of dioxins." The Ivry plant was equipped with such filters, which are used to treat the incinerator's fumes, removing most—but not all—of the dioxins, in 2005.

"Before 2005, we had a black, greasy dust that was characteristic," Connan confirmed. "Now, it's almost whitish – but there's still a lot of dust." Prior to 2005, the incinerator's fumes had been freely emitting from the plant's two chimneys for 36 years. Since dioxins can remain in the environment for centuries, this could have contributed to the high levels of dioxins found around the plant today.

But waste incinerators are not the only source of dioxins, which can be found in most industrial processes involving combustion, Chèvre added – even in cars' exhaust gas. The only way to be certain of the pollution's origin, Chèvre said, is to analyse the soil, which provides a precise map of the extent of the pollution, while making sure that the pollutants found in the soil match those from the incinerator's fumes.

Health officials performed such measurements in Lausanne, where a waste incinerator located close to the city center had been burning trash until 2005. Their analysis uncovered a polluted area spanning over almost 19 square kilometers. Dioxin levels decreased when moving away from the incinerator's location. The map was then used to provide sanitary recommendations to locals – including whether homegrown vegetables and eggs were safe to eat.

"We thought that we'd solved the problem by putting filters on incinerators," Chèvre concluded. "We'd forgotten that dioxins last for hundreds of years, and that the issue is far from being solved."

"A great commotion"

Five days after the Ivry study was published, the Ile-de-France Regional Health Agency issued a statement recommending "as a precautionary and prudential measure the non-consumption of eggs and more generally animal products from coops located in close proximity to the incinerator", which includes Paris's 12th and 13th districts, Ivry-sur-Seine, and the nearby cities of Charenton-le-Pont and Alfortville. "The Agency will ask the opinion of toxicology experts on the situation", the statement read, and the support of France's national Health and Food Safety Agencies to "assess the local and regional situations."

But residents in the area are afraid for their families' health, Connan said: "They cannot overlook that it's causing a great commotion among the population."

Berthod and her partner considered moving out of Ivry-sur-Seine. Berthod had just inherited her mother's suburban house—which also comes with a garden—in Malakoff, another city bordering Paris, located 8 kilometers west of Ivry. But even this, Berthod explained, would not have solved the problem: "In Ile-de-France, you're never far from an incinerator, and Malakoff is not far from the one in Issy-les-Moulineaux", which stands another 6 kilometers to the west. "Above all, we have to stop eating our hens' eggs, or outright go live in the Creuse [a rural area in France] – and even then, it would be best to analyse the soils if we wanted to do some gardening", Berthod added.

Berthod's family takes soil from their garden to cover their coop's floor – which could be how their hens were contaminated. They also eat homegrown vegetables from their garden – but here, the story gets more complicated. "We don't really know if vegetables absorb dioxins", Chèvre explained. "Dioxins are absorbed by fat components, and vegetables are mostly made up of water, so it would be surprising to find them there."

After the findings in Lausanne, the health authorities issued precautionary measures regarding cucurbits, a plant family including squash, pumpkin and zucchini. In the most polluted areas, where the dioxins concentration stood above 100 nanograms per kilogram of soil, it recommended not consuming these vegetables – even though Chèvre said she could not find any scientific proof that they absorb more dioxins than others.

In the end, what matters is long-term exposure to contaminated food. "If you occasionally eat vegetables from your garden, it's not a big deal," Chèvre explained. "But if you eat homegrown vegetables and eggs every day, that's when you need to start thinking about it twice."

More questions than answers

A mere 500 meters from Berthod's house lie Ivry-sur-Seine's workers' gardens, a green haven whose makeshift sheds and neatly demarcated plots span over 7 hectares (17.29 acres) in the moats of a 17th-century military fort. There too, the study came as a shock – but the gardeners appear less worried.

"We're asking ourselves questions," acknowledged El Hadj Djenandar, a 68-year-old high school biology teacher who was granted a plot at the gardens a year ago. "The incinerator has been around for a very long time, gardeners here have been eating products from their gardens for a very long time… And there have never been any proven cases of cancer," Djenandar explained. "So, who to believe? I don't know."

Djenandar said he was reassured when he saw a cardboard notice, signed by one of Ivry-sur-Seine's deputy mayors, displayed in the gardens. The sign recommends thoroughly washing vegetables before eating them, which he already did.

El-Hadj Djenandar, 68, standing in his gardening plot in Ivry-sur-Seine's workers gardens, on March 27.

One afternoon in March, in Djenandar's plot, his family has set up homemade snacks for an afternoon mint tea—from homegrown mint and spices—to enjoy with their gardening neighbor. Françoise Billaud, 58, was born in Ivry-sur-Seine, where she has lived her entire life.

The conversation quickly shifted to the incinerator, as Billaud shared memories of her youth in the then-industrial town of Ivry. Billaud remembered seeing the incinerator, which was inaugurated when she was five, being built. She could "see the black smokes, and there weren't any filters." Back then, Billaud said, the area around the incinerator was an industrial zone, with factories. Housing came later: "and now, inevitably, it looks odd." Billaud is "absolutely not worried" about dioxins. "I was born in it anyways! And either way, we receive some pollution every day," she said.

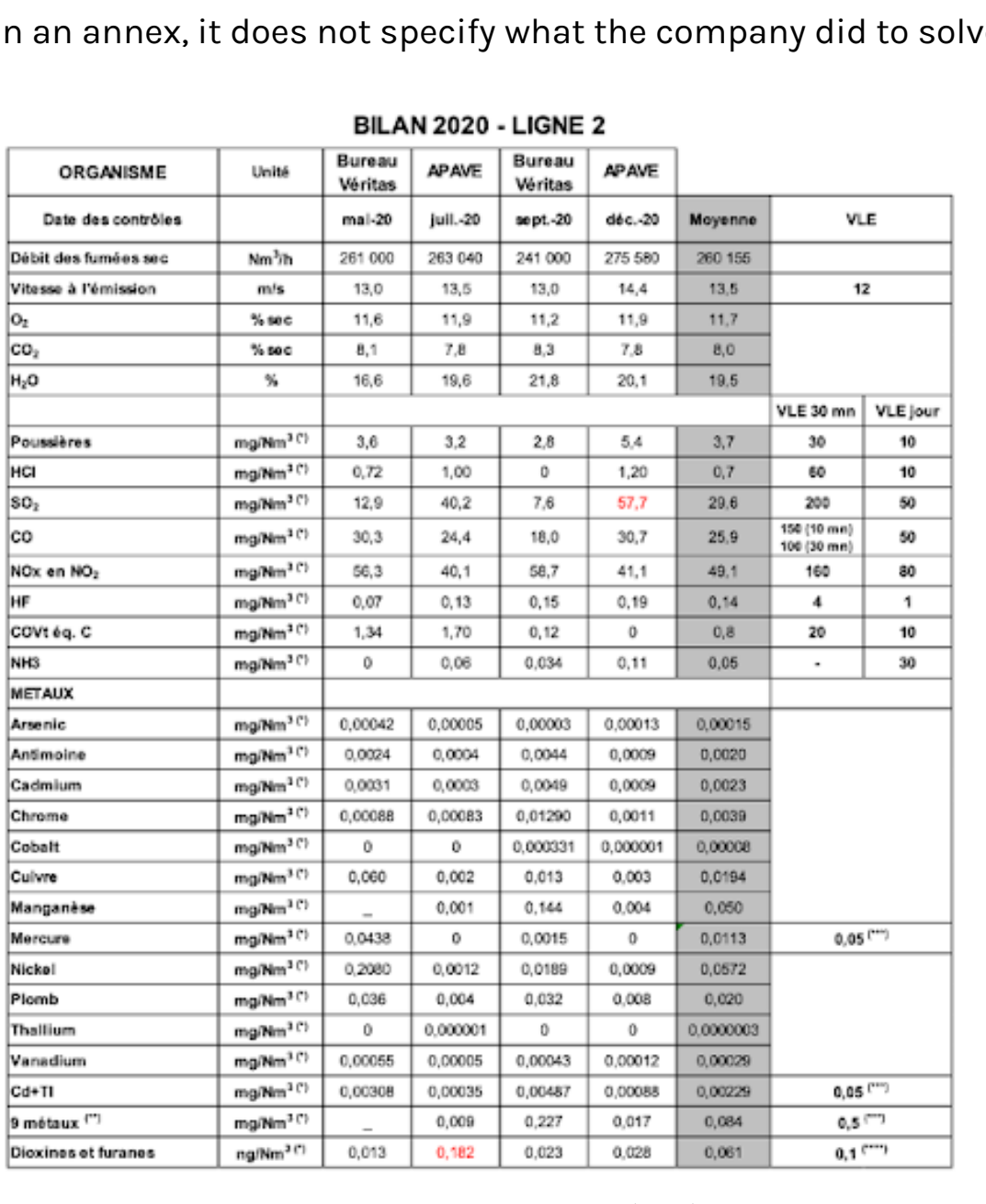
Just the beginning?

For Connan, though, the study uncovering the eggs' pollution is just the beginning: she suspects that there are major dysfunctions in the monitoring of the Ivry plant. Syctom, which owns the Ivry plant, and French utilities giant Suez, which operates it, regularly publish yearly reports on the controls carried out at the plant – both by the two companies themselves, as part of a self-surveillance mechanism, and by independent bodies. But, according to Connan, there are major discrepancies in what the company reports, and the reality.

"Every time there is an incident, we see it. The next day, people come to us and say, 'we were coming back from the cinema, and ended up in a thick black fog,'" Connan explains. "And then, we look at the numbers, and we say, 'this day, this happened,' and we're being told there's nothing to see."

For years, the 3R Collective has been asking to access the incinerator's raw data, to track, in real time, the dioxin emissions from the incinerator's chimneys. On February 25th, Syctom partially answered their request, by sending more than 2,000 pages of files to their offices. These documents, which contain monthly averages of dioxin emissions previously unavailable to the public, were accessed by Sciences Po's Journalism School (EDJ), and reveal inconsistencies in the management of the Ivry plant, in at least two instances.

First, in July 2020, independent measurements carried out by the French company Apave, specialized in risk assessment, discovered during a 6-hours test that the levels of dioxins emitted by the incinerator were above the legal limit. In 2010, the European Parliament had passed a bill introducing limitations for dioxin emissions in the air, which were capped at 0.1 nanograms per cubic meter of air. But that day, dioxin levels measured in one of the incinerator's chimneys stood at 0.182 nanograms – almost twice the legal limit. Although the incident is mentioned in Suez's 2020 yearly report, in an annex, it does not specify what the company did to solve the issue.



BILAN 2020 - LIGNE 2

ORGANISME	Unité	Bureau Véritas	APAVE	Bureau Véritas	APAVE			
Date des contrôles		mai-20	juil.-20	sept.-20	déc.-20	Moyenne	VLE	
Débit des fumées sec	Nm^3/h	261 000	263 040	241 000	275 580	260 155		
Vitesse à l'émission	m/s	13,0	13,5	13,0	14,4	13,5	12	
O$_2$	% sec	11,6	11,9	11,2	11,9	11,7		
CO$_2$	% sec	8,1	7,8	8,3	7,8	8,0		
H$_2$O	%	16,6	19,6	21,8	20,1	19,5		
							VLE 30 mn	VLE jour
Poussières	mg/Nm^3 (*)	3,6	3,2	2,8	5,4	3,7	30	10
HCl	mg/Nm^3 (*)	0,72	1,00	0	1,20	0,7	60	10
SO$_2$	mg/Nm^3 (*)	12,9	40,2	7,6	57,7	29,6	200	50
CO	mg/Nm^3 (*)	30,3	24,4	18,0	30,7	25,9	150 (10 mn) 100 (30 mn)	50
NOx en NO$_2$	mg/Nm^3 (*)	56,3	40,1	58,7	41,1	49,1	160	80
HF	mg/Nm^3 (*)	0,07	0,13	0,15	0,19	0,14	4	1
COVt éq. C	mg/Nm^3 (*)	1,34	1,70	0,12	0	0,8	20	10
NH3	mg/Nm^3 (*)	0	0,06	0,034	0,11	0,05	-	30
METAUX								
Arsenic	mg/Nm^3 (*)	0,00042	0,00005	0,00003	0,00013	0,00015		
Antimoine	mg/Nm^3 (*)	0,0024	0,0004	0,0044	0,0009	0,0020		
Cadmium	mg/Nm^3 (*)	0,0031	0,0003	0,0049	0,0009	0,0023		
Chrome	mg/Nm^3 (*)	0,00088	0,00083	0,01290	0,0011	0,0039		
Cobalt	mg/Nm^3 (*)	0	0	0,000331	0,000001	0,00008		
Cuivre	mg/Nm^3 (*)	0,060	0,002	0,013	0,003	0,0194		
Manganèse	mg/Nm^3 (*)	_	0,001	0,144	0,004	0,050		
Mercure	mg/Nm^3 (*)	0,0438	0	0,0015	0	0,0113	0,05 (***)	
Nickel	mg/Nm^3 (*)	0,2080	0,0012	0,0189	0,0009	0,0572		
Plomb	mg/Nm^3 (*)	0,036	0,004	0,032	0,008	0,020		
Thallium	mg/Nm^3 (*)	0	0,000001	0	0	0,0000003		
Vanadium	mg/Nm^3 (*)	0,00055	0,00005	0,00043	0,00012	0,00029		
Cd+Tl	mg/Nm^3 (*)	0,00308	0,00035	0,00487	0,00088	0,00229	0,05 (***)	
9 métaux (**)	mg/Nm^3 (*)	_	0,009	0,227	0,017	0,084	0,5 (***)	
Dioxines et furanes	ng/Nm^3 (*)	0,013	0,182	0,023	0,028	0,061	0,1 (***)	

A table from Suez's 2020 "Public Information File" (p. 111), which shows, in red and on the last line, the level of dioxins higher than the legal limit.

Second, in September 2020, the incinerator was stopped after two blackouts occurred within a few days – first at one of the ovens on 1 September, then at both ovens on September 5th. After the first blackout, Syctom commissioned an outside study to measure the incinerator's emissions upon restart – as part of the two to three controls conducted every year by Syctom when the incinerators re-start after being stopped. A team from the Belgian group Bureau Veritas, specialised in inspection and certification, oversaw the study. All measurements stood below the legal limit. The report does not flag "any outstanding event", noting that "the operating conditions of the plant were stable for the duration of the tests."

According to Connan, it is during these interruptions and re-start phases that large quantities of dioxins can be released into the air in one go, because the temperature inside the chimneys is not high enough to eliminate them.

When the incinerator faced another blackout four days later, the documents do not indicate that an outside study was performed to measure the incinerator's emissions after it restarted – which is not required by French law.

These two developments come as France is being scrutinized over air quality: the country is currently facing trial against the European Union for failing to abide by legal standards on air quality – particularly in the Paris area.

For Berthod, one thing is certain: from now on, she will no longer consume her hens' eggs. "We're going to let the hens we have be, and live out their lives. But I won't be unhappy the day they're not around anymore", Berthod said. In the meantime, Quesemand, her partner, is storing their polluted eggs in their garage. He's planning to use them in what he calls an "artistico-political" gesture: throwing them back at the incinerator, in an ironic return to their sender.

Article and photos by Nicolas CAMUT

Articles similaires

The legal battle that saved a local communal garden from an olympic solarium
19 avril 2022
Dans "Investigation"

How France's policy to boost purchasing power has left the poor behind
19 avril 2022
Dans "Investigation"

Crushed by public hospital working conditions, nurses resign en masse
20 avril 2022
Dans "Investigation"

« Précédent
Éditorial. L'école républicaine, ou la fabrique du Français

Suivant »
The legal battle that saved a local communal garden from an olympic solarium

Publié par École de journalisme de Sciences Po

Voir tous les articles par École de journalisme de Sciences Po

Votre commentaire

Entrez votre commentaire...