DOCUMENT TYPE

Public Interest Briefing · Onondaga County Legislature

SUBJECT

PFAS Discharge from Micron Technology

Industrial Wastewater — Oak Orchard WWTP — SPDES NY0030317

STATUS

Permit signed April 10, 2026 · **Bond vote pending**

CONFIDENTIAL

EXEMPT FROM FOIL · POL § 87(2)(c)&(d)

— Stamp applied by Onondaga County to the Brown & Caldwell Conceptual Design Engineering Report —

The Case the County Tried to Keep out of Public View.

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How to Use This Book

On April 10, 2026, the New York State Department of Environmental Conservation signed SPDES permit NY0030317 governing Micron Technology's wastewater discharge into the Oneida River. The permit contains zero enforceable PFAS discharge limits. Of forty PFAS compounds on DEC's own regulated list, only two received any numeric value at all — and that value is a 10 ng/L "action level," not an enforceable limit.

Three of the four governmental gates that could have required PFAS protection are now closed. One remains: the Onondaga County Legislature's bond vote authorizing construction of a $1.4–$2.6 billion Industrial Treatment Plant. Because the County will hold the SPDES permit, the County will hold the liability when PFAS appears downstream. Before issuing the bond, the Legislature has the authority — and the fiduciary duty — to require Micron to accept enforceable PFAS limits in the Industrial Wastewater Discharge Permit the County itself will write.

This document is built to be read three ways:

- If you have 60 seconds, read Section 1.
- If you have 10 minutes, read Sections 1, 8, and 9.
- If you are a legislator, regulator, or reporter doing the work, read the whole thing. Every claim in this book is sourced and citation-marked in Section 10, and links to deeper analysis on foreverchemicalsny.com appear throughout.

Contents

SECTION 1

The 60-Second Version

Micron Technology is building the largest semiconductor manufacturing facility in U.S. history in Clay, New York. Every day, the facility will discharge 30.8 million gallons of industrial wastewater into the Oneida River.

Semiconductor manufacturing uses hundreds to thousands of kilograms of PFAS — the family of more than 17,000 "forever chemicals" linked to cancer, thyroid disease, immune suppression, and developmental harm in children. A peer-reviewed Cornell study identified 133 distinct PFAS compounds in semiconductor fab wastewater. EPA Method 1633A, the standard regulatory test, detects only 40.

From Micron's outfall, that water flows: Oneida River → Oswego River → Lake Ontario, entering the lake at the mouth of the Oswego River — one mile from the OCWA drinking water intake serving 500,000 Central New Yorkers, and upstream of more than 3 million people on the St. Lawrence. Lake Ontario already carries 11 ppt total PFAS as a baseline, the highest of any of the five Great Lakes. Federal drinking water limits for PFOA and PFOS were set at 4 ppt each in 2024.

On April 10, 2026, NYSDEC signed the SPDES permit with zero enforceable PFAS limits. The permit becomes effective May 1, 2026.

WHAT CHANGED AT EVERY LEVEL OF GOVERNMENT

Federal: On January 21, 2025 — one day after taking office — the Trump administration withdrew the EPA's proposed rule that would have set federal PFAS discharge limits on industrial wastewater. Seven months later, the PRISM research program (the only federally funded study of semiconductor PFAS discharge) was killed.

State / DEC: April 10, 2026 — SPDES permit signed with zero enforceable PFAS limits.

State / ESD: $5.5 billion in Green CHIPS Excelsior tax credits committed to Micron, conditioned on a Sustainability Plan that has never been defined.

County / Legislature: The bond vote authorizing the Industrial Treatment Plant has not yet been taken. This is the gate that remains open.

The One Sentence

"Do not authorize the bond until Micron's Industrial Wastewater Discharge Permit — the permit you yourselves will write — contains enforceable PFAS discharge limits that match the science."

That is the ask. It is not a vote against Micron. It is not a vote against the CHIPS Act, the Green CHIPS program, the fab, or 9,000 jobs. It is a vote for the Legislature to perform the basic fiduciary function of any governing body authorizing public debt: make sure the asset built with that debt actually does what it was funded to do.

Why This Window Closes Quickly

Three things are happening on overlapping timelines:

- County Executive McMahon stated in his State of the County address that bids on the Industrial Treatment Plant design-build contract are expected in May 2026, with award likely between June and August.
- The signed SPDES permit becomes effective May 1, 2026. The 30-day Article 78 challenge window closes shortly thereafter.
- The bond vote authorizing the Industrial Treatment Plant has not been scheduled. Once it is voted, the Legislature's leverage on Micron drops to zero — because the public money will already be committed.

Each of these is a closing door. The bond vote is the only one the County Legislature controls directly. Conditioning the bond on enforceable PFAS limits in Micron's Industrial Wastewater Discharge Permit is the single most powerful action available to any governmental body in this story.

Why You Should Care Even If You Don't Live in CNY

The pattern playing out in Clay is the same pattern unfolding at every U.S. fab site under the CHIPS Act — GlobalFoundries in Vermont, TSMC in Arizona, Intel in Ohio. The discharge permit is issued to a public wastewater treatment plant. The plant holds the liability. The chip company walks. If Onondaga County breaks the pattern, the next county can cite the precedent. If Onondaga County doesn't, the precedent runs in the other direction.

The Numbers, Compared

Use this panel as a quick reference. Every figure is sourced in Section 10.

PFAS compound families identified	17,000+
PFAS in fab wastewater (Cornell ES&T)	133
PFAS detected by EPA Method 1633A	~40
Documented peak PFAS in fab wastewater	78,000 ppt
Total PFAS in Lake Ontario, 2021–23	11 ppt
Lake Ontario PFOS median	1.3 ng/L
Lake Ontario PFOA median	1.4 ng/L
Federal MCL, PFOA or PFOS individually	4 ppt
Micron Fab 1 footprint	1.2 million sq ft
Micron annual PFAS use, modern fab	100s–1,000s of kg
ITT capacity, Phase 1	16.5 MGD
Total daily discharge to Oneida River	30.8 MGD
Numeric PFAS limits in signed permit	ZERO
Industrial Treatment Plant cost (B&C estimate)	$1.4–$2.6 billion
Industrial Treatment Plant cost (McMahon)	$1 billion
OCWA drinking water customers	500,000+
Downstream St. Lawrence drinking water	3+ million

SECTION 2

The Six-Move Playbook

Semiconductor manufacturing cannot happen without PFAS. The chemistry doesn't work without them. That was true in 2000, it was true in 2015, and it will be true when Micron's first chips come off the Clay line in 2028. The industry has known PFAS are toxic since the 1960s. Faced with that knowledge, the chipmakers made a choice: keep the process, manage the optics. For twenty-five years they have executed the same six-move playbook. Every closed gate in this story is one of those moves.

Move 1 — Substitute. Don't Stop.

When the original PFAS compounds (PFOA, PFOS) were finally regulated in the early 2000s, the industry did not stop using PFAS. It switched to shorter-chain compounds that weren't yet on any regulated list. In 2000, the EPA pressured 3M to stop making PFOS. By 2010, the industry had moved to 4-carbon, 3-carbon, even 2-carbon alternatives. The toxicology on those replacements was incomplete. They could not be measured by standard tests. They were also PFAS — and just as persistent in the environment.

Move 2 — Use What Can't Be Measured.

Regulations target compounds on a list. EPA Method 1633A covers 40 specific compounds. Cornell University's non-targeted analysis of semiconductor fab wastewater identified 133 PFAS compounds — most of which Method 1633A cannot detect. If the test can't see it, the permit shows compliance. The compound is in the water. The paper is clean. This is the structural reason "non-detect" in a regulatory filing does not mean "not present."

Move 3 — Move to Lighter Oversight.

For two decades the industry shifted production to jurisdictions with weaker environmental enforcement — overseas, or to U.S. states where regulators would go along. When manufacturing moved back to the U.S. under the CHIPS Act, the industry shopped the same way inside the country. Boise regulators signed a secret 25-year canal diversion contract for Micron's wastewater in 2014 without telling the public. In New York, NYSDEC has declined to add semiconductor manufacturing (SIC code 3674) to its PFAS priority list — despite peer-reviewed research documenting 133 PFAS compounds in fab wastewater.

Move 4 — Make the Public Hold the Liability.

The chip industry's discharge permits almost never name the manufacturer as the permittee. The permit is issued to a public wastewater treatment plant. The plant holds the liability. When PFAS appears in drinking water or fish tissue downstream, the public utility gets sued, the ratepayers cover the fines, and the industry keeps running. This is the arrangement Onondaga County entered into when the previous Legislature voted to create the Oak Orchard Industrial Sewer District on March 3, 2026 — by a 12–5 party-line margin. Section 8 of this book treats the liability firewall in detail.

Move 5 — Buy the Rules Back.

In 2022, the CHIPS Act directed $52.7 billion in direct manufacturing subsidies and $24 billion in tax credits to the semiconductor industry. In the first half of that year alone, the industry spent $19.6 million on federal lobbying. (Note: this is the entire industry combined for the first half of 2022. Micron's own annual peak that year was $4.2 million — a record for the company. The $19.6M figure is sometimes incorrectly attributed to Micron alone; it is the industry total. Source: Bloomberg via The Register, July 2022; OpenSecrets.)

When the Trump administration took office in January 2025, one day after the inauguration the EPA's proposed Clean Water Act rule setting federal PFAS discharge limits was withdrawn. Seven months later, the PRISM research program — the only federally funded study of semiconductor PFAS discharge — was killed before a single award was processed.

Move 6 — Site for Accommodation, Not Protection.

When Micron selected Clay, New York, it selected a site where the municipal discharger would hold the permit, where the state agency had declined to list semiconductors as a priority, and where $5.5 billion in state tax credits would be tied to a "Sustainability Plan" that had never been defined. In April 2026, NYSDEC signed the SPDES permit with zero enforceable PFAS limits — exactly the regulatory posture the industry has cultivated for two decades.

> **WHY THIS MATTERS**
>
> These six moves are not allegations. Each one is documented in the public record, sourced in Section 10 of this book, and treated in greater depth on foreverchemicalsny.com. Reading them as a sequence is the only way to understand why the County Legislature's bond vote is not just one decision among many — it is the last governmental body positioned to break the pattern.

The Gap in the Numbers — and What It Tells You

County Executive McMahon says the Industrial Treatment Plant will cost $1 billion. In a January 2026 interview he said: “Under no circumstances can there be a $2.7 billion industrial project or else there just won’t be a project.” The County’s own engineer — Brown and Caldwell, the same firm designing Micron’s Boise water systems — estimates the actual cost at $1.4 to $2.6 billion.

> **THE HIGHER NUMBER COMES FROM A REPORT THE COUNTY TRIED TO HIDE**
>
> The $1.4–$2.6 billion estimate is documented in the Oak Orchard Industrial Wastewater Treatment Plant and Water Reclamation Facility Conceptual Design Engineering Report — the 213-page technical blueprint Brown and Caldwell delivered to Onondaga County in November 2025.
>
> The County stamped the executive summary “CONFIDENTIAL — Exempt from FOIL per POL 87(2)(c)&(d)” and refused to release it under public records law.
>
> ForeverChemicals NY obtained the report. It is the source of the cost number above and is hosted in full at foreverchemicalsny.com/documents.html.

The gap matters because the difference between $1 billion and $1.4–$2.6 billion is not noise. It is the protection that gets cut to make the politics work. That gap is PFAS treatment. It is the destruction technology the plant will not include. It is the monitoring methods that will not be required. It is the characterization of Micron’s waste stream that will not happen before construction begins.

The Legislature has the authority and the fiduciary responsibility to decide which number the County is actually building to.

SECTION 3

Four Gates — Three Closed, One Open

Four decision points stood between Micron's PFAS discharge and the drinking water of 500,000 Central New Yorkers. Three of those gates have now closed without requiring Micron to characterize, treat, or limit the PFAS compounds in its wastewater. The Onondaga County Legislature is the last gate left.

Gate 1 — Federal. Closed January 21, 2025.

On January 21, 2025 — one day after taking office — the Trump administration withdrew the EPA's proposed Clean Water Act rule that would have set federal PFAS discharge limits on industrial wastewater. The rule was part of a broad executive order freezing pending federal regulations. It had been developed over years of technical analysis and was one step from public comment.

Seven months later, in August 2025, Commerce Secretary Howard Lutnick refused to deliver $7.4 billion in contracted CHIPS Act funds to Natcast, killing PRISM — the PFAS Reduction and Innovation in Semiconductor Manufacturing program. PRISM was the only $35 million federally funded research program designed to understand what semiconductor fabs put in the water. Awardees had already been selected. The approval memo was never processed. The PRISM page was deleted from Natcast's website. Most Natcast staff was laid off.

Congress authorized $150+ billion to build chip fabs. The administration killed the only funded program designed to understand what those fabs put in the water.

Gate 2 — State / NYSDEC. Closed April 10, 2026.

On April 10, 2026, NYSDEC signed SPDES permit NY0030317 for the Oak Orchard Wastewater Treatment Plant. Of the 40 PFAS compounds on DEC's own regulated list, only two (PFOA and PFOS) received a numeric value — and that value is a 10 ng/L action level, not an enforceable discharge limit. The other 38 compounds receive monitoring only. DEC's own Division of Water Director, Carol Lamb-LaFay, P.E., has publicly stated that public wastewater plants cannot cost-effectively or technically treat PFAS. The permit was signed anyway. The full permit analysis is at foreverchemicalsny.com/permit-issued.html.

Gate 3 — State / ESD. Open, but not the primary lever.

Empire State Development has committed up to $5.5 billion in Green CHIPS Excelsior tax credits to Micron over twenty years, tied to an approved Sustainability Plan. That plan has not been approved. ESD has the authority to define “sustainable wastewater management” to include enforceable PFAS limits before releasing any credits. ForeverChemicals NY has formally asked President Hope Knight to do this. The request is on the record.

Governor Hochul’s own 2026 State of the State required PFAS treatment at landfill leachate sources — a standard her administration has not extended to a 30.8 million gallon per day semiconductor discharge into a drinking water watershed. The asymmetry is itself the campaign’s argument to ESD.

Gate 4 — Onondaga County Legislature. Open.

The County Legislature has not yet voted to bond the Industrial Treatment Plant. Two facts about this vote are widely misunderstood and worth stating clearly:

- The Industrial Treatment Plant is a separate project from the $549 million municipal plant expansion the prior Legislature bonded on December 29, 2025 by a 12–5 party-line vote. The municipal expansion is built. The industrial plant is not. They are two different bonds.
- Micron is contractually obligated to reimburse the County for construction of the industrial plant. But the County bonds upfront and the County holds the SPDES permit. Which means the County holds the liability — not Micron — when PFAS appears downstream.

WHAT THIS GATE DOES

The Legislature’s job, before authorizing the bond, is to protect the taxpayers it represents.

The mechanism is the Industrial Wastewater Discharge Permit (IWDP) the County itself will write under the EPA-approved Industrial Pretreatment Program.

The County, not DEC, controls the IWDP. The County, not DEC, decides what enforceable limits Micron must accept before discharging into the County’s system.

Conditioning the bond on enforceable PFAS limits in the IWDP is the single most powerful protective action available to any governmental body in this story.

Who the Ask Goes To

The bond vote is a Legislature vote, but it lands with a small number of specific officials. Persuasion effort should concentrate here:

Chairwoman	Nicole Watts (D, District 9)
Majority Leader	Nodesia Hernandez (D, District 17)
Environmental Protection Committee Chair	Gregg Eriksen (D)
County Executive	J. Ryan McMahon II
General contact	onondagacountylegislature@ongov.net
Phone	(315) 435-2070

Letters and calls work. The bond vote will be a roll call — each Legislator's position will be on the record. The campaign's position to every Legislator should be the same: this is not a vote against the fab, the jobs, or the project. It is a vote to make sure the public debt the Legislature authorizes funds a plant that protects the public.

"The Legislature is the last governmental body positioned to break the pattern."

SECTION 4

From Clay to Your Tap

The discharge pathway from Micron's Oak Orchard Industrial Treatment Train runs directly to the drinking water intake for 500,000 Central New Yorkers. The Onondaga County Water Authority draws nearly half its supply from Lake Ontario through an intake shared with the City of Oswego. That intake is approximately one mile offshore at the mouth of the Oswego River — the receiving water for the Oneida River downstream of Micron's outfall. The system closes a loop. Micron's discharge enters the lake at the same location its makeup water comes from.

STAGE 1 — THE FAB

Micron's semiconductor facility at White Pines Commerce Park, Clay, NY. PFAS chemicals used at hundreds of process steps. On-site pretreatment then discharges to the Industrial Treatment Train.

STAGE 2 — INDUSTRIAL TREATMENT TRAIN (NOT YET BUILT)

Brown & Caldwell's Conceptual Design specifies an MBR bioreactor for Phase 1 — a process with documented zero PFAS removal. Phase 2 adds reverse osmosis, which concentrates PFAS but does not destroy it; the resulting brine is destined for deep-well injection out of state. No granular activated carbon. No destruction technology of any kind. Bond not yet authorized.

STAGE 3 — BRIDGE TREATMENT GAP (2028–2029)

Before the industrial plant is complete, the County's engineering report documents that Micron's process wastewater will be routed through the existing municipal sewage plant as a stopgap. That plant has no PFAS-specific treatment.

STAGE 4 — ONEIDA RIVER

Discharge enters surface water under the SPDES permit signed April 10, 2026. Zero enforceable PFAS limits. Oneida Lake is upstream and east of the discharge point — the flow moves away from the lake, not toward it.

STAGE 5 — OSWEGO RIVER → LAKE ONTARIO

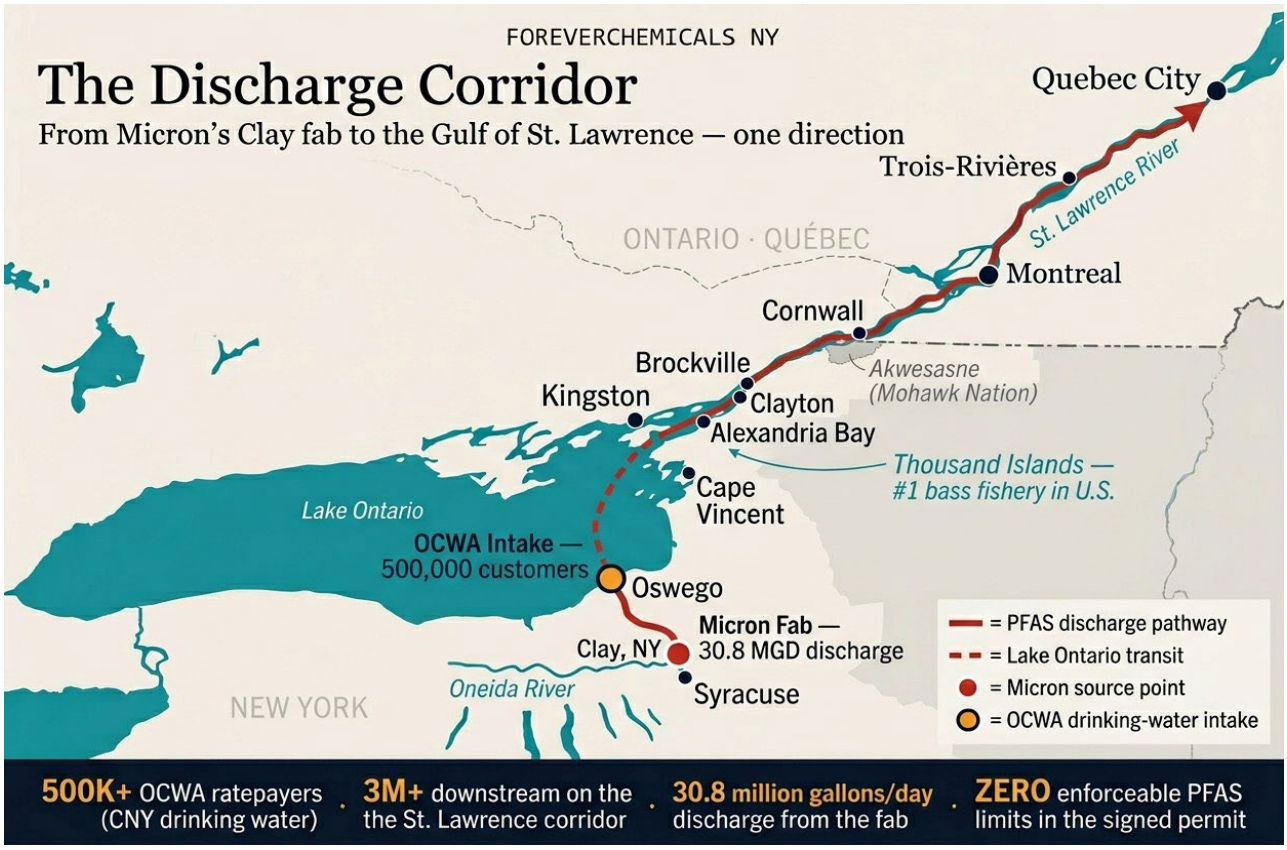
The Oneida joins the Oswego at Three Rivers near Baldwinsville. The Oswego flows north 24 miles to discharge into Lake Ontario at the City of Oswego. PFAS bioaccumulates in fish tissue along this entire corridor.

STAGE 6 — OCWA LAKE ONTARIO INTAKE

One mile offshore, at the mouth of the Oswego River. The intake supplies the OCWA Lake Ontario Water Treatment Plant on Rathburn Road. Treated water is pumped 25 miles via pipeline to Clay storage tanks — including to Micron itself.

The Discharge Corridor

The map below shows the full pathway from Micron's outfall in Clay to the Gulf of St. Lawrence — the same corridor described in the six stages above, with the regional and international scale that the verbal walkthrough cannot show. Lake Ontario flows in only one direction. Whatever enters at Oswego ends up downstream.



Discharge corridor from Clay, NY to Quebec City. Solid red = river/estuary discharge pathway. Dashed red = Lake Ontario transit. Source: ForeverChemicals NY based on NYSDEC SPDES NY0030317 outfall location and surface-water hydrology of the Oswego → Lake Ontario → St. Lawrence corridor.

The Closed Loop

Micron draws water from Lake Ontario via OCWA. That water is used in chip manufacturing. The wastewater is discharged to the Oneida River. It flows to the Oswego River. It discharges into Lake Ontario at the intake. The same water gets pulled back in. PFAS concentrates with every cycle. This is not a hypothetical — it is the documented hydraulic geography of the system.

Why OCWA's Treatment Doesn't Save Us

OCWA's Lake Ontario plant uses granular activated carbon (GAC) filtration. GAC effectively removes long-chain PFAS — the compounds the industry phased out over a decade ago. Short-chain PFAS, the compounds modern semiconductor fabs actually use, break through GAC far more quickly and at much lower removal rates. Micron's discharge will be dominated by short-chain compounds. GAC is the wrong tool for the contamination Micron will create.

OCWA announced filtration upgrades at the Lake Ontario WTP completing in 2025 — but no PFAS-specific treatment technology has been announced. Water systems have until 2029–2031 to formally comply with the new EPA PFAS MCLs. OCWA is in a regulatory grace period, not an action mode. That grace period expires the same year Micron begins chip production.

On "Non-Detect"

OCWA's 2023 Consumer Confidence Report stated all PFAS tests returned "non-detect." What it didn't explain: under the federal UCMR5 program, "non-detect" means below the minimum reporting level — which for PFOA is approximately 2–4 ppt. Right at the EPA limit. A result of 3.9 ppt is legally "non-detect."

"Non-detect is a statement about the test, not a statement about the water."

Downstream

Lake Ontario flows northeast into the St. Lawrence River — one direction only. The St. Lawrence supports a major recreational fishery (Bassmaster's #1 smallmouth bass destination) and provides drinking water to more than three million additional people in eastern Ontario and Quebec downstream. Section 7 of this book treats the St. Lawrence in detail — the fishery economy, the Cape Fear precedent, and the international constituency.

SECTION 5

The Health Evidence

Every fact in this section is drawn from government agencies, independent scientific bodies, or peer-reviewed literature. None come from advocacy publications. The complete page with citations and quantitative findings is at foreverchemicalsny.com/health-evidence.html.

The reason this section exists in the briefing book is that the technical and regulatory arguments in Sections 1–4 only matter to the extent the underlying chemicals actually harm people. They do. The evidence is older, larger, and more authoritative than industry advocates typically acknowledge.

How Strong Is the Evidence?

The 2022 National Academies of Sciences, Engineering, and Medicine (NASEM) report, commissioned by the U.S. Department of Health and Human Services, synthesized the PFAS health literature into four tiers. This is the most authoritative current synthesis of the evidence:

Sufficient evidence	Decreased vaccine antibody response; elevated cholesterol; kidney cancer; decreased infant/fetal birth weight.
Limited / suggestive	Testicular cancer; breast cancer; liver enzyme elevation; pregnancy-induced hypertension; thyroid disease; ulcerative colitis; chronic kidney disease.
Inadequate / insufficient	Most cardiovascular outcomes; most developmental outcomes beyond birth weight.
Limited evidence of no association	Very few endpoints reach this threshold.

The four endpoints in the top tier represent the strongest PFAS evidence base. These are the outcomes where the National Academies concluded that chance, bias, and confounding can be ruled out with reasonable confidence. The next four pages walk through each one.

Sufficient Evidence — Decreased Vaccine Antibody Response

This is the most alarming finding in the PFAS literature — because it affects every vaccinated person and is measurable in children at background exposure levels, not just in contaminated communities.

–39%	Reduction in diphtheria antibody levels in children at age 5 per doubling of maternal PFOS — enough to fall below clinically protective thresholds.
–49%	Overall antibody concentration reduction per 2× increase in combined PFAS in child serum (Grandjean et al. 2012, Faroe Islands cohort, n=656).
–5%	Per doubling of PFOA across all vaccine antibody types in adults — consistent across diphtheria, tetanus, rubella, measles (meta-analysis, ~4,830 participants).
–25%	Diphtheria antibody reduction per doubling of PFOA at age 13 in the same cohort — immune suppression persists into adolescence.

What this means in plain terms: children living near PFAS contamination may receive their scheduled vaccines but still not develop adequate immune protection. A child vaccinated against diphtheria or tetanus may test below clinically protective antibody levels because PFAS have blunted their immune response. This is not theoretical — it has been measured at PFAS exposure levels lower than those present in many U.S. communities.

A 2025 in-vitro study using human blood cells directly confirmed the mechanism: PFOA, PFOS, PFNA, and PFHxS suppress T-cell-dependent antibody production — the same pathway that makes vaccines work.

THE LAKE ONTARIO CONNECTION

OCWA's Executive Director Jeff Brown publicly stated in July 2025 that Lake Ontario already contains 2 ppt PFAS in the raw water source. Children in the OCWA service area are already being exposed to PFAS through drinking water — before Micron begins operations. Adding an uncontrolled industrial PFAS load to that system is not precautionary. It is compounding a known risk.

Sufficient Evidence — Elevated Cholesterol (Dyslipidemia)

The most replicated finding in PFAS research. Confirmed across occupational cohorts, community studies, and general population surveys spanning four decades. A 2025 systematic review and meta-analysis of 74 epidemiological studies confirmed positive associations between PFOA and PFOS exposure and increased total cholesterol and LDL cholesterol in adults. Studies near contamination sources showed the strongest effects.

The C8 cohort — the 69,000-person C8 Health Project near DuPont's Parkersburg, WV plant — showed elevated PFOA was associated with significantly higher total cholesterol across all age groups in a dose-dependent pattern. Mechanism: PFAS activate peroxisome proliferator-activated receptors (PPARs) in the liver, dysregulating fatty acid metabolism and increasing LDL synthesis. This is not a statistical artifact — it is a characterized biochemical pathway.

IARC Group 1 Carcinogen — Kidney Cancer

The best-documented PFAS cancer link. Established through the largest PFAS health study ever conducted and confirmed in multiple independent cohorts. The legal and scientific record here is unusually strong — industry has already lost in court on this finding.

1.58×	Relative risk of kidney cancer for people with elevated PFOA exposure vs. unexposed population — C8 Science Panel 2012.
$1.185 billion	Settlement paid by DuPont and Chemours in 2017, based on ~3,500 personal injury cases rooted in the C8 "probable link" kidney cancer finding.
+118%	Increase in U.S. kidney cancer incidence from 1975 to 2022 — from 7.4 to 16.1 per 100,000. No PSA-type screening artifact explains this rise (NCI SEER).
Group 1	IARC classification for PFOA as of 2023 — upgraded from "possible" to definite human carcinogen. PFOS newly classified Group 2A (probable).

The C8 Science Panel was funded by DuPont as part of a class action settlement and staffed by independent scientists. The "probable link" finding for kidney cancer required seven years of analysis of 69,000 people. It is not contested by any major scientific or regulatory body. When DuPont tried to contest it in court, they settled for over a billion dollars.

IARC's 2023 Group 1 classification places PFOA in the same category as tobacco smoke and asbestos.

The DuPont – Chemours Timeline

Industry knew. The record is documented:

1984	DuPont internal memo: PFOA causes tumors in rats.
1999	EPA begins investigating Parkersburg discharge.
2001	C8 class action filed; 69,000 enrolled.
2012	C8 Panel: “probable link” — kidney cancer.
2017	$1.185 billion settlement.
2023	IARC: PFOA Group 1 carcinogen.

Sufficient Evidence — Decreased Infant and Fetal Growth

Consistent findings across multiple birth cohort studies on multiple continents — U.S., Denmark, Norway, Japan, and Taiwan. This is the developmental endpoint with the strongest and most replicated evidence base.

Prenatal PFOA and PFOS exposure is associated with statistically significant reductions in birth weight across multiple independent cohorts. A per-interquartile-range increase in PFOA is associated with approximately 20–50 gram reductions in birth weight. While modest per individual, at population scale this represents a meaningful shift in the birth weight distribution.

Mechanism: PFAS cross the placenta. Prenatal exposure affects fetal growth via disruption of growth hormone signaling and thyroid hormone availability during critical developmental windows — periods when exposure to endocrine-disrupting chemicals can have disproportionate effects relative to adult exposure.

> **WHY THIS MATTERS HERE**
>
> Pregnant women in the OCWA service area — the 500,000 people whose drinking water comes from the Lake Ontario intake one mile from the Oswego River discharge point — are directly in the exposure pathway. Lake Ontario PFAS is already detectable in that intake before Micron starts operations.

Limited or Suggestive Evidence

The following outcomes have evidence suggesting a PFAS association but where chance, bias, or confounding cannot yet be fully excluded. Several are likely to move to the “sufficient” tier as evidence accumulates — the trajectory of the science is toward stronger associations, not weaker ones.

- Testicular cancer — NCI SEER incidence has risen +97% since 1975; consistent cohort associations; no PSA-equivalent confounder. The strongest PFAS cancer signal that does not carry the contested-science baggage some opponents try to attach to the C8 kidney finding.
- Breast cancer (postmenopausal) — French cohort (n=194 cases) found positive association with pre-diagnostic PFOS for hormone receptor-positive tumors.
- Liver enzyme elevation (ALT/AST) — multiple cross-sectional studies; consistent in occupational and general population cohorts; direct hepatotoxicity confirmed in animal models.
- Pregnancy-induced hypertension and preeclampsia — multiple prospective cohort studies; dose-response pattern; mechanism involves endothelial disruption.
- Thyroid disease and dysfunction — PFAS compete with thyroid hormones for serum binding proteins; most consistent findings in occupational cohorts at higher exposures.
- Chronic kidney disease and reduced GFR — multiple NHANES cross-sectional studies; propensity score analysis supports causal direction; kidneys are the primary PFAS excretion organ.
- Ulcerative colitis — C8 cohort “probable link” finding; immune dysregulation pathway is biologically plausible.

Exposure Context: What Concentrations Are We Talking About?

The health associations above were established at specific exposure levels. Here is how those levels compare to what Micron’s discharge would add:

EPA MCL, PFOA or PFOS individually	4 ppt
Lake Ontario, total PFAS (current)	~11 ppt
Lake Ontario, PFOS / PFOA medians	1.3 / 1.4 ng/L
Average PFAS in fab wastewater (SIA 2025)	840 ppt
Same, as multiple of EPA MCL	210×
PFAS detected by EPA Method 533/537.1	~7 compounds
PFAS in fab wastewater (Cornell non-targeted)	133 compounds

Lake Ontario already has detectable PFAS at or near the EPA drinking water limit before Micron discharges anything. Semiconductor fab wastewater averages 210 times that limit. Standard monitoring detects only 7 of the 133 PFAS compounds Cornell found in fab wastewater. This is why the campaign demands EPA Method 1633A plus the TOP Assay, not just standard methods.

Why PFAS Cause These Effects

The epidemiological associations are supported by well-characterized biochemical mechanisms. These are not statistical artifacts — they reflect specific molecular interactions:

- **Immune suppression:** PFAS disrupt T-cell activation and B-cell antibody production. 2025 in-vitro studies using human peripheral blood mononuclear cells directly confirmed this pathway at environmentally relevant concentrations.
- **Lipid metabolism:** PFAS activate peroxisome proliferator-activated receptors (PPARs) in the liver, disrupting fatty acid metabolism and increasing LDL cholesterol synthesis.
- **Thyroid hormone displacement:** PFAS compete with thyroid hormones for binding sites on serum transport proteins, particularly transthyretin, effectively reducing the amount of active thyroid hormone available to tissues.
- **Renal accumulation:** Kidneys are the primary organ for PFAS excretion. PFAS accumulate preferentially in kidney tubular cells. Mechanisms for kidney cancer include oxidative stress, PPAR-mediated cell proliferation, and suppression of the VHL tumor suppressor pathway.
- **Placental transfer:** PFAS cross the placenta and concentrate in breast milk. During critical developmental windows, endocrine disruption by PFAS can have disproportionately large effects relative to equivalent adult exposure.
- **Carcinogenicity (PFOA, IARC Group 1):** Multiple converging mechanisms: PPAR activation, oxidative DNA damage, epigenetic modifications silencing tumor suppressor genes, and immune suppression reducing cancer immune surveillance.

What the Evidence Does Not Establish

Credible scientific communication requires acknowledging uncertainty. These are the genuine limits of the current evidence base:

- **Legacy vs. semiconductor PFAS.** The vast majority of health research focuses on PFOA and PFOS — legacy long-chain compounds largely phased out by 2002–2013. The short-chain and ultrashort-chain PFAS that Micron will actually use have almost no human health data. Absence of data is not evidence of safety.
- **Mixture toxicity.** Almost all health studies assess individual PFAS compounds. Humans are exposed to mixtures of dozens to hundreds of compounds simultaneously. Interactions between PFAS, and between PFAS and other semiconductor chemicals, are essentially unknown.
- **Causation vs. association.** Epidemiological studies establish association; randomized controlled trials to prove causation are impossible. The IARC Group 1 classification for PFOA means causation is considered established for that single compound, not the broader class.
- **Safe thresholds.** It is unknown whether there is a safe threshold below which PFAS exposure produces no harm. EPA’s 4 ppt MCL reflects the assumption that there is no completely safe level for carcinogens.

"Even in the best of cases there will not be standards or guidance values for the preponderance of PFAS that Micron will actually be using. Yet current science demonstrates that all PFAS are toxic as well as persistent. Any release of PFAS into the environment adds to the already unacceptable load."

— Lenny Siegel, Center for Public Environmental Oversight, comments on Micron DEIS, 2025

SECTION 6

The Boise Record

Micron's existing semiconductor campus in Boise, Idaho uses the same chemistry planned for Clay. Boise has been dealing with Micron's PFAS wastewater since before the CHIPS Act existed. The complete record — with primary sources, news coverage, and public records — is at foreverchemicalsny.com/boise.html.

What follows is the part that matters most for the County Legislature: a community that did everything right — started early, brought in experts, passed bonds, built pilots — and seven years later still has PFAS in the river and on the farmland. If the most proactive U.S. response to a Micron fab is still struggling to control the problem, Onondaga County's assumption that this can be solved later is not a strategy. It is a wager.

Two Treatment Plants. Zero PFAS Removal.

Boise operates two wastewater treatment plants, both of which receive Micron's pretreated industrial discharge:

- **Lander Street Water Renewal Facility** — built 1950. Design capacity 15 MGD. Discharges to the Boise River at river mile 49.9. Serves approximately 122,600 people.
- **West Boise Water Renewal Facility** — built 1975. Maximum capacity 40 MGD, average flow 18 MGD. Discharges to the Boise River at river mile 43.5. Serves approximately 148,300 people.

Both plants use conventional activated sludge with Enhanced Biological Nutrient Removal (EBNR) and UV disinfection. Neither plant has any PFAS treatment capability. No granular activated carbon for PFAS. No ion exchange. No reverse osmosis. No destruction technology. PFAS that enters the system passes straight through — into the Boise River and into biosolids.

> **THE RELEVANCE TO CLAY**
>
> Oak Orchard, with its planned MBR bioreactor, will remove PFAS at approximately the same rate as the Boise plants — zero. The County's engineering report confirms this. Boise is what Clay looks like in seven years if no enforceable PFAS limits are written into Micron's Industrial Wastewater Discharge Permit before the bond is authorized.

The Timeline — Twelve Years of Promises

2014 — The Secret Contract

The City of Boise signed a 25-year, $50,000/year contract with the Farmer's Union Ditch Company to divert treated wastewater — including Micron's discharge — into an irrigation canal instead of the Boise River. The stated reason was to avoid new EPA temperature regulations on river discharge. The public was not informed. The canal was used for agriculture, flood irrigation of residential yards, gardening, swimming, and fishing.

2019 — Discovery and Revolt

Dr. Richard Llewellyn, a PhD biochemist and president of the Northwest Neighborhood Association, discovered the contract buried in city budget documents. He raised the alarm about PFAS and other contaminants of emerging concern — chemicals that pass straight through conventional treatment. Community opposition was immediate and sustained.

2020 — Packed Public Hearings Force PFAS Testing

The city was forced to pause the canal project and test for PFAS. Testing found 7 types of PFAS in the wastewater system. The city's entire Water Renewal Utility Plan — an $890 million to $1.3 billion, 20-year infrastructure program — was reshaped by the PFAS issue.

2021 — Canal Contract Cancelled. $570M Bond Approved.

The city formally cancelled the Farmer's Union Canal contract. The environmental manager publicly acknowledged the trust had been broken. A $570 million water renewal bond was placed before voters and approved in November 2021. The National Water Research Institute was brought in for independent expert oversight.

2022 — Micron's $15B Expansion + PFAS Pilot Announced

Micron filed permits for a 4.85 million square foot fab expansion — rivaling the Pentagon. Micron stated "any excess wastewater will be fully treated before being discharged to City's treatment facility." The city announced an Advanced Water Treatment Pilot prioritizing PFAS removal, to be tested on Micron's actual discharge water.

January 2023 — Pilot Launches in Shipping Containers

The Advanced Water Treatment Pilot launched in shipping containers in a Micron parking lot, testing reverse osmosis, advanced oxidation, and air scrubbing on 40,000 gallons per day of Micron's actual discharge. The city stated publicly that PFAS removal was the top priority.

SECTION 6 (CONTINUED)

2023 — PFAS Found in the Boise River

Dr. Douglas Sims of the College of Southern Nevada collected 10 water samples from a three-mile stretch of the Boise River downstream of the city's treatment plants. Five of seven PFAS compounds tested were detected, with three at relatively high levels. This contamination is from Micron's existing R&D facility — not the new high-volume manufacturing fab.

Late 2023 — Micron Pulls Out of Joint Treatment Plan

Micron withdrew from the city's joint wastewater treatment plan and decided to build its own on-site infrastructure. The city's environmental manager stated publicly that she had "no insight" into Micron's decision. Micron's spokesperson did not respond to press questions. Micron's excess wastewater continues to discharge to the conventional plants — which have zero PFAS treatment.

Late 2023 — Pilot Results: RO Works for PFAS, Fluoride Is a Problem

Phase 1 results showed the treatment system was highly effective at removing PFAS — levels dropped to undetectable after reverse osmosis. But fluoride remained above the maximum level allowed, requiring membrane changes and chemistry adjustments. The lesson: advanced treatment works for PFAS, but only if designed into the system from the start.

2024 — $550M Recycled Water Facility Moves Forward

The city purchased a 76-acre site for $20 million and issued an RFP for a $550 million Recycled Water Facility. It will process 6 million gallons per day of industrial wastewater for reuse or groundwater recharge. Planned opening: 2029.

January 2026 — The Fight Continues

The Farmer's Union Ditch Company held its first board election since 1984 after shareholders organized to block a new recycled water proposal from the Eagle Sewer District. Seven years after Llewellyn first raised the PFAS alarm, the issue is still driving community conflict in Boise.

"Boise was proactive. They started testing years before the new fab came online. They brought in national experts. They passed a $570 million bond. They built a pilot. They are spending $550 million on a dedicated recycled water facility. And PFAS is still in the Boise River."

PFAS on 4,225 Acres of Farmland

The City of Boise owns and operates a 4,225-acre farm called Twenty Mile South Farm, approximately 20 miles south of the city. Dewatered biosolids from both Lander Street and West Boise are trucked to this farm and applied as fertilizer for alfalfa, corn, and wheat. Those crops are sold to local farmers and on commodity markets, generating $3 to $4 million annually.

Both treatment plants receive Micron's discharge. Neither removes PFAS. PFAS concentrates in biosolids during treatment. Those biosolids are being spread on 4,225 acres of agricultural land that produces food crops sold to local farmers.

Maine and Connecticut have banned biosolids land application entirely because of PFAS. Michigan and Minnesota have implemented mandatory PFAS testing before land application. Boise has no such requirement.

> **THE PARALLEL TO CLAY**
>
> Sludge from Oak Orchard will be trucked to Metro Syracuse for processing.
>
> The County's plan has been to sell dried biosolids as agricultural fertilizer.
>
> Once Micron's PFAS enters the system, that fertilizer carries PFAS onto Central New York farmland — unless biosolids from the Oak Orchard system are independently tested before any land application is permitted.
>
> This is what Demand 7 in Section 9 is designed to prevent.

The Injection Well Permits — A Second, Hidden Pathway

Clean Water Action's National Water Projects Coordinator filed a public records request with the Idaho Department of Water Resources on March 24, 2026. The documents were received the same day. They reveal a second water management operation at Micron's Boise campus, operating alongside its industrial wastewater discharge to the city treatment plants.

Micron holds two active injection well permits. The wells are used to recharge the Boise aquifer with river water used for on-site cooling. Boise River water is routed through a non-contact heat exchanger to cool process equipment, then ultra-filtered and injected back into the aquifer at a depth of approximately 1,210 feet. Micron's permit application declares no chemical constituents are added to the water beyond a temperature increase of approximately 25–30 degrees Fahrenheit above ambient.

- Permit 63W-156-001: original well, built 1998. Maximum injection rate 6,000 GPM, continuous, 24/7. Permit expires March 2028.
- Permit 63W-156-002: new well, construction anticipated November 2025. Maximum injection rate 5,000 GPM, continuous. Combined: up to 15.8 million gallons per day injected into the deep aquifer.

The monitoring requirements in both permits cover turbidity, coliform bacteria, and total dissolved solids. Neither permit requires PFAS monitoring of any kind.

The Aquifer Question

A municipal well in the Boise area has shut down due to PFAS contamination in the deep aquifer. Source attribution remains contested — Micron's injection activities, Gowen Field Air Force Base (a documented PFAS contamination site from firefighting foam), and other industrial sources have all been identified as potential contributors. Because neither Micron permit requires PFAS monitoring, the question of whether Micron's cooling water recharge operations are contributing to the contamination cannot currently be answered from the regulatory record.

This is not an accusation. It is a documentation of a regulatory gap: a major industrial operation injecting millions of gallons per day into a deep aquifer, in an area with confirmed PFAS contamination in that aquifer, with no requirement to test for PFAS. The same regulatory gap — no PFAS monitoring, no PFAS limits — exists at Oak Orchard.

Citizen Science Will Fill the Gap

Because no government agency, no independent researcher, and no company has ever conducted a comprehensive upstream/downstream PFAS comparison at any U.S. fab using the full testing stack, ForeverChemicals NY is conducting independent citizen-science PFAS sampling of the Boise River. The protocol calls for surface water grab samples upstream and downstream of treatment plant discharge points serving the Micron fab, analyzed using EPA Method 1633A plus a Total Oxidizable Precursor (TOP) Assay.

The campaign coordinates with the Sierra Club Idaho Chapter on field sampling logistics and with Lenny Siegel of CPEO on protocol consistency with comparable citizen-science efforts at other fab sites. Atlantic Testing Laboratories — the largest accredited environmental laboratory in Central New York — declined to take this work because of an existing contractual relationship with Micron. That fact is itself a campaign data point about the capture of local technical capacity by a single large industrial customer. The RFQ has been issued to Eurofins TestAmerica.

The GlobalFoundries Vermont Reference Point

There is one comparable data point in the U.S. record. In 2024, citizen activists measured PFAS in the Winooski River one mile downstream of GlobalFoundries' Vermont semiconductor fab. That single grab sample — not replicated, not paired with an upstream control, not using non-targeted methods — found 8.3 ng/L of PFAS. The federal drinking water standard for some of those compounds is 4 ng/L. The entire downstream evidence base for the U.S. semiconductor PFAS problem is one jar of river water taken by volunteers.

"Boise is the data point Onondaga County never asked for. It is the data point we have to provide."

SECTION 7

The St. Lawrence at Stake

Lake Ontario flows northeast into the St. Lawrence River — one direction only. Whatever enters the lake at Oswego ends up in the St. Lawrence. There is no other path. The river drains the entire Great Lakes basin into the Gulf of St. Lawrence, passing the Thousand Islands, Clayton, Cape Vincent, Alexandria Bay, Kingston, Brockville, Cornwall, Montreal, and Quebec City along the way.

This section is in the briefing book for two reasons. First, the St. Lawrence is the campaign's broadest argument — it extends the affected population from the 500,000 OCWA ratepayers in Central New York to the more than three million people downstream, including drinking-water systems and Indigenous nations on both sides of an international border. Second, the threat is to a working economy. The Thousand Islands fishery is not an abstraction. It is the livelihood of charter guides, marina operators, hotel owners, and small-town main streets that have depended on this river since the nineteenth century. The fish do not care who they belong to. The economy does not care who issued the permit. Both will respond to PFAS exactly the way the science predicts.

The #1 Bass Fishery in America

Bassmaster Magazine ranked the St. Lawrence River the #1 smallmouth bass fishing destination in the United States in 2022. According to the New York State Department of Environmental Conservation, smallmouth bass is the most commonly caught species in the river, and yellow perch is among its core species. Save the River, the Thousand Islands waterkeeper organization, operates a catch-and-release program specifically for the smallmouth fishery.

The trophy fishery is on a separate scale. The current world-record catch-and-release muskellunge — 57 inches, estimated at over 77 pounds — was taken on the St. Lawrence near Gananoque, Ontario in 2009. New York's all-time muskie record, 69 pounds 15 ounces, was caught near Clayton in 1957 and still stands. Walleye. Northern pike. Salmon. The fishery is the reason the river towns exist as they do.

> **WHAT "TOURISM ECONOMY" ACTUALLY MEANS HERE**
>
> Charter guides operating from Cape Vincent, Clayton, Alexandria Bay, and Waddington — hundreds of independent businesses.
>
> Marinas, tackle shops, bait dealers, boat dealers, dock and slip operators.
>
> Hotels, motels, B&Bs, lodges, restaurants, river-town main streets that fill seasonally with anglers from Pennsylvania, Ohio, Michigan, Quebec, and Ontario.
>
> Fourteen New York State parks along the river's shore — Cedar Point, Burnham Point, Wellesley Island, Keewaydin, and others — whose visitor counts depend on the assumption that the water is clean and the fish are safe to eat.
>
> Major tournaments: Bassmaster Elite, Thousand Islands Open, multiple St. Lawrence-specific tournament circuits running March through November.

The Cape Fear Precedent

There is a precise downstream precedent for what a single industrial PFAS discharger can do to a regional fishery. The Chemours plant at Fayetteville Works on the Cape Fear River in North Carolina discharged PFAS for decades. Chemours is the spinoff DuPont created specifically to hold the PFAS liability DuPont no longer wanted on its own balance sheet.

North Carolina's health department has issued a fish consumption advisory covering more than 200 miles of the Cape Fear River. For largemouth bass, flathead catfish, striped bass, and bluegill the advisory is categorical: do not eat. For other species the limit is one meal per year. PFAS was found in every species tested. Families who fished that river for generations were told to stop. The advisory is not temporary. The same molecules are still in the same fish.

A peer-reviewed economic analysis (Sun et al., "Benefits from recreational catch improvements may hinge on fish consumption safety: Evidence from the Cape Fear River") documented that anglers responded to the advisory by avoiding the river even where catch rates were good. The recreational fishery economy on a contaminated river does not survive on catch-and-release alone. People who can't eat what they catch eventually fish somewhere else.

Why the St. Lawrence Is Vulnerable

PFAS bioaccumulates in fish tissue. The relevant peer-reviewed bioaccumulation factor (BAF) for PFOS in muscle tissue of smallmouth bass and yellow perch is in the range of log BAF 2.5–3.9 — meaning concentration in fillet flesh runs roughly 300 to 8,000 times the concentration in surrounding water. The mean log BAF in the published Sun et al. (2023) Harvard/New Hampshire freshwater study is 3.2, which translates to approximately 1,600×.

Plug those numbers in. Lake Ontario currently carries PFOS at a median of 1.3 ng/L. At the mean BAF, that produces fish tissue PFOS concentrations on the order of 2,000 ng/kg — already above several state advisory thresholds. Add a 30.8 million gallon per day discharge of fab wastewater averaging 840 ng/L total PFAS, and the math gets worse on a quarterly time scale, not a generational one.

"PFAS bioaccumulates in fish tissue. It does not dissipate. It does not flush out with seasonal runoff. Once it is in the fish, the only thing that gets it out is time — measured in years to decades."

The Downstream Constituency

The St. Lawrence is not a Central New York issue. It is a regional and international one. The communities and constituencies with direct standing in this question include:

- Jefferson County, NY — home to Cape Vincent, Clayton, Alexandria Bay, Cape Vincent Fisheries Station; the New York side of the international fishery.
- St. Lawrence County, NY — Waddington, Massena, Ogdensburg; downstream river towns whose economies depend on the same water.
- Onondaga Nation — the Haudenosaunee Confederacy's Onondaga territory sits within the affected watershed, and the Haudenosaunee have treaty-based fishing rights along the river. The Onondaga Nation's long-running advocacy on Onondaga Lake provides direct precedent for tribal standing on PFAS.
- Save the River — the Thousand Islands waterkeeper organization, founded 1978, with active programs on smallmouth bass, water quality monitoring, and watershed advocacy.
- Ontario and Quebec drinking-water systems — Kingston, Brockville, Cornwall, Montreal, Quebec City, and dozens of smaller communities along the river. International obligations under the Boundary Waters Treaty of 1909 are implicated.
- First Nations along the Canadian shore — Mohawk Council of Akwesasne and other Indigenous communities whose traditional territories include the river.
- Charter and commercial fishing operators — hundreds of small businesses on both sides of the international border, none of whom were a party to the SPDES permit decision.

The State-Level Lever

Empire State Development has not yet approved Micron's Sustainability Plan under the Green CHIPS Excelsior tax credit program. ESD has the authority to define "sustainable wastewater management" to include enforceable PFAS limits before releasing any of the $5.5 billion in committed credits. The St. Lawrence fishery and the international drinking-water systems downstream are the substantive justification for ESD to use that authority. Governor Hochul's 2026 State of the State already required PFAS treatment at landfill leachate sources — a standard that, on the merits, applies with greater force to a 30.8 MGD semiconductor discharge into a watershed that supplies drinking water to millions of people in two countries.

"The St. Lawrence doesn't get a second chance."

SCOPE OF SCRUTINY

The Onondaga County Legislature's bond vote will be reported on by Watertown Daily Times, North Country Public Radio, the Ottawa Citizen, the Toronto Star, and the Montreal Gazette. The decision will not be confined to Central New York coverage. It will be the first U.S. test case of

whether a downstream river economy can secure protection from an upstream semiconductor fab through governmental action rather than litigation.

SECTION 8

The Liability Firewall

Underneath every technical question in this book sits a financial question that elected officials and county staff need to internalize before authorizing the bond. It is the question that makes everything else matter.

"When the federal MCL is exceeded at OCWA's Lake Ontario intake — because the cumulative PFAS load from Micron's discharge has built up over years of operation — who pays for the additional treatment?"

The answer, under the structure being put in place today, is: Onondaga County, OCWA, and ratepayers. Micron is the source. The County is the permitted discharger. The drinking water utility is the entity legally on the hook for delivering MCL-compliant water at the tap. Micron walks; the County and its ratepayers carry the bag.

This is not a hypothetical. PFAS treatment for a single municipal water system can run into the hundreds of millions of dollars. Class-action exposure for past exceedances is currently producing multi-billion-dollar settlements against PFAS manufacturers across the country. The County is positioning itself to be both the permitted discharger and the ratepayer-funded treatment provider — a financial posture that requires no special pleading to recognize as bad.

The Mechanism

When the County operates the treatment plant, the County holds the discharge permit. The March 3, 2026 sewer district vote transferred environmental liability from a $455 billion corporation to the taxpayers of Onondaga County. The vote was 12–5, on party lines. This is a corporate liability firewall built with public money, by public officials, through a government vote. It is, deliberately or not, exactly Move 4 of the playbook in Section 2 — "Make the Public Hold the Liability."

The Remedy

The remedy is structural. It can be performed by the County Legislature, unilaterally, before authorizing the bond. The mechanism is the Industrial Wastewater Discharge Permit (IWDP) the County will itself write under the EPA-approved Industrial Pretreatment Program.

Under the IPP, the County — not DEC, not EPA, not Micron — controls the local limits placed on industrial users of the County's sewer system. Those limits can be set as numerical PFAS discharge limits referenced to EPA Method 1633A plus the Total Oxidizable Precursor (TOP) Assay. They can be set at concentrations Micron's on-site pretreatment is required to meet before the wastewater leaves the fab's contractual perimeter. They can include audit, sampling, and enforcement provisions that put the cost of compliance — and the cost of failure — on Micron, where it belongs.

Build the destruction-grade treatment in upstream, at Micron's expense, before the wastewater leaves the fab's contractual perimeter. Set enforceable limits in the IWDP. Require Method 1633A plus TOP Assay so what is actually being discharged is measured. Do it before the bond is authorized — because after, the cost goes up by an order of magnitude and the political will for it goes to zero.

This Is a Fiscal Accountability Question

The liability transfer is not, at root, an environmental policy question. It is a public finance question. A $100 billion corporation receiving $5.5 billion in state tax credits and roughly $6 billion in federal CHIPS subsidies is being permitted to transfer its single largest long-tail environmental liability onto county ratepayers — most of whom will never work at the fab and many of whom may not even know the fab exists. The County is the party that issues the SPDES permit. The County is the party that will be sued when the federal MCL is exceeded at OCWA's intake. The County is the party whose ratepayers will fund whatever additional treatment becomes necessary.

That arithmetic is the same regardless of how anyone feels about industrial regulation, environmental policy, or the CHIPS Act. The question for the Legislature is whether it is appropriate to authorize public debt to build infrastructure that absorbs a private corporation's environmental liability without first requiring that corporation to control the underlying discharge.

"Micron walks. The County holds the bag."

SECTION 9

What the Legislature Must Do

The seven demands below are the campaign's asks of the Onondaga County Legislature. Each one corresponds to a specific provision the Legislature has the authority to write into the IWDP, or to require as a condition of authorizing the bond for the Industrial Treatment Plant. None of these requires waiting on DEC, EPA, ESD, or Congress.

Demand 1 — Full Chemical Disclosure. No NDAs.

Micron must publicly disclose the complete list of PFAS and other chemicals used in its Clay, NY fab. From Micron's own DEIS: "Micron would request detailed chemical constituent documentation from its chemical vendors, including PFAS content, which often requires the use of non-disclosure agreements to obtain such information." Proprietary claims do not override the public's right to know what is being discharged into a public waterway. A treatment train cannot be designed for a waste stream whose composition is protected by NDAs.

Demand 2 — Sample the Boise Fab Now.

Independent, accredited PFAS sampling of Boise River surface water and fish tissue — upstream and downstream of treatment plant outfalls receiving discharge from Micron's existing Idaho facility — must be conducted using Method 1633A plus TOP Assay. This work is already underway through ForeverChemicals NY in coordination with the Sierra Club Idaho Chapter. The County and DEC should formally request and use the results.

Demand 3 — Require Method 1633A Plus TOP Assay.

All PFAS monitoring required under the IWDP must use EPA Method 1633A (the 40-compound PFAS panel as updated in 2024) and a Total Oxidizable Precursor (TOP) Assay. Method 1633A alone misses most of the PFAS that semiconductor wastewater contains. A regulatory regime that does not measure what is being discharged is not a regulatory regime.

Demand 4 — Require PFAS Destruction Technology, Not Filtration.

Granular activated carbon and ion exchange capture PFAS — they do not destroy it. The spent media becomes a hazardous waste stream that has to go somewhere. Reverse osmosis concentrates PFAS into a brine that gets injected into deep wells out of state. None of these is a solution. The IWDP must require destruction-grade treatment (electrochemical oxidation, supercritical water oxidation, or comparable technology that breaks the carbon-fluorine bond) sized to the projected PFAS load. The technology exists. Treatment options are catalogued at foreverchemicalsny.com/solutions.html. Why incineration is not the answer is at foreverchemicalsny.com/incineration.html.

Demand 5 — Require Mixture Toxicity Assessment.

Standard regulatory toxicology evaluates compounds one at a time. PFAS in real wastewater occur as mixtures of dozens to hundreds of compounds whose combined effects are not characterized by single-compound limits. The IWDP must require periodic mixture toxicity assessment of the actual discharge — not just compliance with individual compound limits set by reference to laboratory studies of single substances.

Demand 6 — Mandatory IWDP Update Trigger for New PFAS Compounds.

Semiconductor chemistry evolves continuously. New PFAS compounds are introduced to fab process lines on a rolling basis as device geometries shrink and process technologies change. The IWDP must include a mandatory trigger: any new PFAS compound introduced to the wastewater stream automatically triggers a permit reopener before discharge is permitted to continue.

Demand 7 — Prohibit Land Application of PFAS-Contaminated Biosolids.

PFAS partitions strongly into wastewater treatment solids. Once Micron's discharge is online, the biosolids produced at Oak Orchard — and trucked to the Metropolitan Syracuse plant for processing — will be PFAS-concentrated. The County's plan to dry these biosolids and sell them as agricultural fertilizer would extend the contamination pathway from drinking water to farm fields and the food supply. Maine and Connecticut have banned this practice for the same reason. New York should join them — at minimum for biosolids associated with industrial PFAS dischargers. The Boise record (Section 6) shows PFAS biosolids are already being applied to 4,225 acres of city-owned farmland. The same mistake is being staged here.

> **WHO CAN ACT ON EACH DEMAND**
>
> Demands 1, 3, 4, 5, 6: The County Legislature, via conditions on the bond authorization and provisions in the IWDP.
>
> Demand 2: Already underway through this campaign; the County and DEC should formally request and use the results.
>
> Demand 7: New York State Legislature, NYSDEC, and the Onondaga County Legislature — the County can act unilaterally on its own biosolids without waiting for state action.

What You Can Do, Right Now

Three actions, in escalating order of impact:

1. Sign the Petition. Visit the Site.

The petition gives the campaign a public count of supporters — a number that gets cited in correspondence with regulators, county officials, and reporters. Sign at **foreverchemicalsny.com**.

2. Contact Your Onondaga County Legislator.

The Onondaga County Legislature has 17 members. They have authority over the County's bond authorization for the Industrial Treatment Plant. Find your legislator at ongov.net/legislature/members.html. The general line is (315) 435-2070; the email for the body is onondagacountylegislature@ongov.net. Three messages to deliver, in your own words:

- Do not authorize the bond for the Industrial Treatment Plant until Micron's Industrial Wastewater Discharge Permit contains enforceable PFAS limits.
- Require destruction-grade PFAS treatment technology in the design-build contract — not filtration, not reverse osmosis, not biological treatment alone.
- Adopt a moratorium on land application of biosolids from any wastewater stream containing industrial PFAS.

3. Demand Action from ESD.

Empire State Development has not yet approved Micron's Sustainability Plan under the Green CHIPS Excelsior tax credit program. President Hope Knight has the authority to define "sustainable wastewater management" to include enforceable PFAS limits before releasing any of the $5.5 billion in tax credits. Comments to ESD become part of the public record. Send to:

Hope Knight, President & CEO

Empire State Development

633 Third Avenue, New York, NY 10017

WHY YOUR CONTACT MATTERS

The bond vote will be a roll call. Each Legislator's position will be on the record. Public pressure measurably affects roll-call votes when the Legislator hears from constituents in the days before the vote. Your contact is not symbolic. It is part of the count.

SECTION 10

Sources, Documents & Further Reading

Every factual claim in this briefing book is sourced. The campaign maintains a working file of all source material and provides it on request to legislators, regulators, and reporters. Email info@foreverchemicalsny.com.

Primary Documents

The Conceptual Design Engineering Report

Brown and Caldwell, Oak Orchard Industrial Wastewater Treatment Plant and Water Reclamation Facility Conceptual Design Engineering Report, November 11, 2025 (213 pp). Stamped “CONFIDENTIAL — Exempt from FOIL per POL 87(2)(c)&(d)” on the executive summary. Source of the $1.4–$2.6 billion cost estimate. Hosted in full at foreverchemicalsny.com/documents.html.

The Signed SPDES Permit

NYSDEC SPDES Permit NY0030317 for the Oak Orchard Wastewater Treatment Plant. Signed April 10, 2026; effective May 1, 2026. Authorizes 30.8 MGD discharge. Zero enforceable PFAS limits. Action levels of 10 ng/L for PFOA and PFOS only. Full analysis at foreverchemicalsny.com/permit-issued.html.

The Carollo RFAI Response

Carollo Engineers, Response to NYSDEC Request for Additional Information, November 7, 2025. Documents the Industrial Treatment Train’s reliance on MBR bioreactor technology with no PFAS-specific treatment. Available in the documents library.

Health Evidence

NASEM 2022: National Academies of Sciences, Engineering, and Medicine. Guidance on PFAS Exposure, Testing, and Clinical Follow-Up. National Academies Press. doi:10.17226/26156. Commissioned by HHS; most comprehensive independent synthesis of PFAS health evidence to date. IARC Monographs Vol. 135, 2023: International Agency for Research on Cancer. PFOA classified Group 1 (definite human carcinogen); PFOS classified Group 2A (probable). ATSDR Toxicological Profile 2021: Agency for Toxic Substances and Disease Registry. atsdr.cdc.gov/ToxProfiles/tp200.pdf. Barry V, Winquist A, Steenland K. 2013: Perfluorooctanoic acid exposures and incident cancers among adults living near a chemical plant. Environ Health Perspect 121(11-12):1313-1318. Grandjean P et al. 2012: Serum vaccine antibody concentrations in children exposed to perfluorinated compounds. JAMA 307(4):391-397. Crawford S et al. 2023: Systematic review and meta-analysis of vaccine response and PFAS exposure. Environ Int. Xu Y et al. 2025: Global serum PFAS and lipids: systematic review and meta-analysis of 74 epidemiological studies. Environ Sci Technol.

Boise River and the Boise Record

Sims, D., College of Southern Nevada. Boise River PFAS surface water study (5 of 7 PFAS compounds detected downstream of treatment plants serving the Micron fab). EPA NPDES permits #ID0020443 and #ID0023981 for

Lander Street and West Boise WRFs. City of Boise Water Renewal Services public records. BoiseDev coverage 2019–2026 (boisedev.com). Idaho Department of Water Resources Injection Well Permits 63W-156-001 and 63W-156-002, obtained via public records request by Clean Water Action, March 25, 2026. City of Boise Twenty Mile South Farm program documentation.

Lake Ontario PFAS Baseline

Integrated Atmospheric Deposition Network (IADN) PFAS surface water analysis, 2021–2023. Published in PMC11137863 (2024). EPA-funded. Reports total PFAS ~11 ppt in Lake Ontario; PFOS median 1.3 ng/L; PFOA median 1.4 ng/L. Lake Ontario carries the highest total PFAS burden of any of the five Great Lakes.

Federal Drinking Water MCLs

U.S. EPA, Final National Primary Drinking Water Regulation for Per- and Polyfluoroalkyl Substances (PFAS). Federal Register, April 26, 2024. Sets MCLs of 4 ppt for PFOA and 4 ppt for PFOS individually.

133 PFAS in Fab Wastewater

Jacob, P., Helbling, D.E., et al. “Per- and polyfluoroalkyl substances in semiconductor manufacturing wastewater.” Environmental Science & Technology, 2021. Cornell University. Identifies 133 distinct PFAS compounds; introduces the “dark PFAS” framework for compounds that EPA Method 1633 cannot detect.

Trump EPA PFAS Rollback

Executive Order "Regulatory Freeze Pending Review," January 20, 2025. OMB withdrawal of EPA proposed Clean Water Act Effluent Limitations Guidelines for PFAS, January 21, 2025. Multiple sources including AP, Reuters, Inside EPA.

PRISM Termination

IEEE Spectrum, "CHIPS Act PFAS research program canceled," September 11, 2025. Reports termination of PRISM research initiative and Lutnick's August 25, 2025 refusal to deliver $7.4 billion in contracted CHIPS Act funds to Natcast. PRISM was the PFAS Reduction and Innovation in Semiconductor Manufacturing program; full name and mission documented at foreverchemicalsny.com/incineration.html.

Semiconductor Industry Lobbying

Bloomberg, reported via The Register, July 2022. Semiconductor industry combined federal lobbying expenditures, first half 2022: $19.6 million. This figure is the entire industry, not Micron alone. Per OpenSecrets, Micron's own annual peak that year was $4.2 million — a record for the company. Earlier campaign materials and at least one boosted Facebook post incorrectly attributed the $19.6M to Micron alone; that error is corrected here and on the live site.

GlobalFoundries Vermont

CHIPS Communities United and Center for Public Environmental Oversight reporting, 2024. Citizen-science sampling of Winooski River; 8.3 ng/L PFAS one mile downstream of GlobalFoundries discharge.

St. Lawrence Fishery and Cape Fear Precedent

Bassmaster Magazine annual "Best Bass Lakes" ranking, 2022 — St. Lawrence River ranked #1 smallmouth bass fishing destination in the United States. NYSDEC species composition data for the St. Lawrence River fishery (smallmouth bass, yellow perch, walleye, northern pike, muskellunge). World-record catch-and-release muskellunge: 57 inches, taken on the St. Lawrence near Gananoque, Ontario, 2009 (multiple sources). Save the River (savetheriver.org) catch-and-release smallmouth program documentation. Cape Fear River fish consumption advisory: North Carolina Department of Health and Human Services, current advisory covering more than 200 miles of river; PFAS detected in every species tested. Sun, Y. et al., "Benefits from recreational catch improvements may hinge on fish consumption safety: Evidence from the Cape Fear River," Fisheries Research, 2023, doi:10.1016/j.fishres.2023.106823. PFAS bioaccumulation factors for smallmouth bass and yellow perch muscle tissue: Sun et al., Harvard/New Hampshire freshwater study (log BAF mean 3.2, range 2.5–3.9 for PFOS).

Onondaga County Bond Vote

December 29, 2025: Onondaga County Legislature voted 12–5 (party line) to bond the $549M municipal expansion of the Oak Orchard WWTP. The Industrial Treatment Plant is a separate bond authorization, not yet voted.

Sewer District Vote

March 3, 2026: Onondaga County Legislature voted to create the Oak Orchard Industrial Sewer District, transferring environmental liability for industrial discharge to the County. Don Hughes (Sierra Club CNY Conservation Chair) testified at the vote.

Live Pages on foreverchemicalsny.com

The campaign's website carries deeper analysis on every topic in this briefing book. The pages below are the canonical references; each is updated more frequently than this document. URLs are listed without the https:// prefix for legibility — prepend it when typing.

Home	foreverchemicalsny.com
Permit analysis (April 10, 2026 signing)	foreverchemicalsny.com/permit-issued.html
Documents library (incl. CDE Report)	foreverchemicalsny.com/documents.html
The Boise record — full timeline	foreverchemicalsny.com/boise.html
Treatment solutions	foreverchemicalsny.com/solutions.html
Why incineration is not the answer	foreverchemicalsny.com/incineration.html
Health evidence	foreverchemicalsny.com/health-evidence.html
The Record (campaign correspondence)	foreverchemicalsny.com/the-record.html
About the campaign	foreverchemicalsny.com/about.html
Sign the petition	foreverchemicalsny.com/#petition

DOCUMENT AVAILABILITY

Photocopies of any cited document, link, or PDF can be requested by emailing info@foreverchemicalsny.com. The campaign maintains a working file of all source material and provides it on request to legislators, regulators, and reporters at no charge.

SECTION 11

About ForeverChemicals NY

ForeverChemicals NY is an independent public interest advocacy campaign focused on PFAS discharge risks from Micron Technology's semiconductor manufacturing facility in Clay, New York, and — increasingly — on PFAS permitting failures across New York State. The campaign is founder-funded and accepts no corporate donations. It is not affiliated with any political party, advocacy organization, or competitor of Micron Technology. Its sole interest is securing enforceable protection of New York's drinking water and downstream watersheds from PFAS contamination.

Founder

The campaign was founded by Todd Fitzsimmons, president of Smart Tank Corporation in North Syracuse, NY. Fitzsimmons brings 40 years of fuel system engineering experience to the technical analysis of industrial wastewater treatment, with particular focus on the structural-engineering and contracting realities that make pre-award technology specification the only practical leverage point on a project of this scale.

Allies and Collaborators

The campaign coordinates with, and acknowledges the work of, the following organizations and individuals — with the explicit understanding that listing here does not imply institutional endorsement:

- Sierra Club Central New York (Don Hughes, Conservation Chair)
- Sierra Club Idaho Chapter
- Center for Public Environmental Oversight (Lenny Siegel)
- CHIPS Communities United (Katherine Cohn, Julie MacNamara)
- Save the River, Thousand Islands (Janet Burrows)
- Northwest Neighborhood Association, Boise (Dr. Richard Llewellyn)
- Clarkson University (Prof. Yang Yang — piezoelectric ball milling PFAS destruction)

Contact

Web: foreverchemicalsny.com

Email: info@foreverchemicalsny.com

Petition: foreverchemicalsny.com (active)