



Poisoning the well: neoliberalism and the contamination of municipal water in Walkerton, Ontario

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Abstract

In May of 2000, thousands of residents of the town of Walkerton, Ontario became ill from drinking municipal water contaminated by *Escherichia coli* and *Campylobacter jejuni* bacteria. Seven people died, while many suffered debilitating injuries. A highly unusual and risk prone local hydrological regime, coupled with manure spreading on farms near municipal wells, and lax oversight by municipal water utility officials were quickly blamed by Ontario government figures, including then premier Mike Harris. However, the scandal surrounding Walkerton's tragedy and a subsequent public inquiry into the incident also implicated neoliberal reforms of environmental governance introduced by Harris's government subsequent to its election in 1995. This paper examines the Walkerton incident as an important example of a "normal accident" of neoliberalism, one that can be expected from neoliberal environmental regulatory reforms arising from systematic irresponsibility in environmental governance. This irresponsibility is promulgated by an overarching hostility to any regulatory interference with free markets, as well as specific regulatory gaps that produce environmental risks. The paper also serves as a case study of the extent to which neoliberalism is constituted by environmental governance reform, and conversely, how environmental governance reform is reconfigured as part of the emergent neoliberal mode of social regulation.

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"Irresponsibility is the organizing principle of the neoliberal vision"

- Günter Grass, "The Progressive Restoration: A Franco-German Dialog", *New Left Review* 14, March/April 2002, p. 71.

"She died in the hospital away from her home, hooked up to machines and tubes in a coma. She suffered terribly for ten days. She never had a chance to understand her illness. She couldn't put her affairs in order or say goodbye. There was no time. She just got sicker and sicker... and we were always ten steps behind the illness. Her dreams of retirement with Dad and traveling were stolen, all because the water was unsafe and nobody told her."

- Janice King, daughter of Betty Trushinski, aged 56, victim of the Walkerton water poisoning, in testimony before the Walkerton Inquiry (O'Connor, 2002b, p. 46).

1. Introduction: poison in the water 43

For residents of Walkerton, Ontario, the Victoria Day weekend of 2000 began as had many before it. Viewed as the start of summer, Victoria Day (one week prior to the American Memorial Day Holiday) offers Canadians an opportunity to break out the barbeque, open up cottages, air out tents, visit friends and family, and talk about playoff hockey. In Walkerton, a spate of thunderstorms in the week preceding the holiday did little to dampen enthusiasm for an annual rite. Indeed,

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53 as the weekend arrived, though warning signs had al- 97
 54 ready appeared, there was little hint of an imminent 98
 55 calamity. But by Monday morning, Walkerton's first 99
 56 resident had died from drinking poisoned town water. 100
 57 The death of Lenore Al would be followed by six more. 101
 58 Despite a boil-water advisory issued by the region's 102
 59 Medical Officer of Health on Sunday May, 21st, in ex- 103
 60 cess of 2300 area residents became infected; many sur- 104
 61 vivors suffered seriously, and continue to experience
 62 long term effects both physical and psychological.¹

63 The proximate cause of the infections and deaths was 105
 64 soon apparent: contamination of treated municipal 106
 65 water by *Escherichia coli* and *Campylobacter jejuni* 107
 66 bacteria. A particularly deadly strain of *E. coli* known as 108
 67 O157:H7 and found in the stomachs of cattle was 109
 68 implicated in the most severe cases, and in all of the 110
 69 deaths.² Yet, where had the bacteria come from? How 111
 70 did they get into the town's water? And why were they 112
 71 found in *treated* water, despite chlorination systems, 113
 72 testing procedures, and claims by Ontario government 114
 73 authorities that provincial regulations safeguarding 115
 74 Ontario drinking water were adequate? In a nation 116
 75 routinely ranked at or near the top of the United Na- 117
 76 tion's Human Development Index, a scandal quickly 118
 77 erupted over how what had come to be taken so utterly 119
 78 for granted—the provision of safe municipal drinking 120
 79 water—could fail so catastrophically.

80 The provincial government quickly portrayed the 121
 81 incident as an isolated episode, blaming ostensibly freak 122
 82 “natural” events and circumstances, including severe 123
 83 rainstorms and karst hydrology, together with admin- 124
 84 istrative bungling bordering on criminal negligence 125
 85 perpetrated by town water managers. In a high profile 126
 86 and extensive public inquiry established by the Ontario 127
 87 government after the tragedy (O'Connor, 2002b),³ 128
 88 Ontario Premier Mike Harris explicitly blamed the local 129
 89 water utility management and staff, as did the province's 130
 90 legal team. A year after the release of the second inquiry 131
 91 report, criminal charges were in fact brought against 132
 92 former staff of the Walkerton public utility.

93 Yet, as the public inquiry itself made plain, the poi- 133
 94 soning of Walkerton's water cannot and must not be 134
 95 seen as an isolated incident, despite its admittedly un- 135
 96 unique circumstances. Rather, this tragedy is an example

of broad regulatory failure and the systematic produc- 97
 tion of environmental risks by neoliberal governance 98
 reforms, an environmental and human health manifes- 99
 tation of what Jamie Peck (2001) has termed neoliberal- 100
 ism's “thin policies and hard outcomes”. In this paper, 101
 I examine the Walkerton tragedy as a kind of “normal 102
 accident” (Perrow, 1999) produced in significant mea- 103
 sure by the nature of neoliberalism. 104

The Walkerton incident implicates in particular a 105
 project of neoliberal reforms visited primarily in the 106
 wake of the provincial elections of 1995. This project, 107
 sweeping and unprecedented in Ontario, bore many of 108
 the familiar hallmarks of what has been referred to as 109
 “rollback neoliberalism” (Peck, 2001; Peck and Tickell, 110
 2002), including: fiscal austerity, administrative de-reg- 111
 ulation and re-regulation; and privatization. In addition, 112
 and underscoring a core theme of this special issue, 113
 neoliberalization in Ontario was predicated in signifi- 114
 cant measure on the re-configuration of provincial 115
 environmental governance, and in ways that contributed 116
 to the Walkerton incident. This new mode of regulation 117
 cut a broad swath through Ontario's environmental 118
 regulatory apparatus, undermining the capacity of regu- 119
 latory agencies, creating specific regulatory gaps while 120
 at the same time placing an overall chill on the regula- 121
 tion of capital's access to and impacts on the Ontario 122
 environment. More specifically, neoliberalization in 123
 Ontario undermined agricultural and water quality 124
 regulation. Together, these dimensions of environmental 125
 neoliberalization in Ontario contributed to the Walk- 126
 erton incident by creating the conditions for regulatory 127
 failure; this is what makes Walkerton 2000 a normal 128
 accident of neoliberalism. 129

Nevertheless, implicating the broad architecture of 130
 neoliberalism does not obviate the significance of par- 131
 ticular political and ecological factors that contributed 132
 to the incident. These too are both analytically and 133
 circumstantially important. Indeed, the Walkerton 134
 tragedy occurred in an area with a highly particular 135
 hydrological regime, one that in combination with 136
 livestock agriculture, and lax environmental controls, 137
 produced a ‘perfect storm’ of risk for groundwater 138
 contamination. Moreover, if local utility management 139
 cannot be held accountable for the wider failures of the 140
 regulatory system under neoliberal reforms, neither can 141
 their gross, and scandalous misconduct be ignored. My 142
 argument in this paper is that wider, systemic issues and 143
 locally specific contributors to the tragedy comprise a 144
 false dichotomy of causation. Reinforcing another core 145
 theme of this special issue, *only* the juxtaposition of 146
 neoliberalism's hegemonic character with specific polit- 147
 ical ecological contradictions can reveal the crisis ten- 148
 dencies of environmental neoliberalism. In the case of 149
 Walkerton, it is precisely the combination of neoliberal 150
 reforms with a highly particular biophysical environ- 151
 ment and the actions of environmental managers that 152

¹ Some have permanent organ damage, particularly to their kidneys. Others cite persistent after effects from the trauma of the experience, including paranoia regarding every little illness, and an acute, lasting distrust of drinking water. One resident stated before the public inquiry into the tragedy “Oh my goodness, why am I so depressed and how come I can't stop crying? It's scary just not knowing what's going to happen . . . next” (O'Connor, 2002b, p. 44).

² This individual strain of *E. coli* has been known to be particularly virulent since it was first identified in an outbreak of *E. coli* contamination linked to beef consumption in Oregon in 1984.

³ The second report was released on May 23rd, 2002, and was accessed at <http://www.walkertoninquiry.com/report2/index.html>.

153 turned a “normal” accident waiting to happen into a
154 specific one with tragic consequences.

155 The paper is organized in the following manner. The
156 first section provides some brief elaborations on the
157 notion of a normal accident in the context of the pro-
158 duction of environmental risks by neoliberal governance
159 reforms. The following section addresses locally specific
160 factors that contributed to the poisoning of Walkerton’s
161 water, including the conjunction of a distinct hydro-
162 logical regime, local and regional livestock production,
163 and the practices of municipal utility officials in
164 (mis)managing the town’s water supply. Subsequently,
165 the paper turns to chronicling the establishment of a
166 systematic “irresponsibility” (to borrow Grass’s apt
167 notion, quoted above) in environmental governance via
168 neoliberal reforms visited by the administration of ex-
169 Premier Harris under a platform dubbed the “Common
170 Sense Revolution”. This includes first a review of the
171 broad project of neoliberalism as a new mode of social
172 regulation antagonistic to state-centred environmental
173 regulation; and secondly, those reforms that contributed
174 to the tragedy most directly by undermining provincial
175 oversight of agricultural waste and runoff, as well as
176 groundwater and municipal water quality management.

177 2. Confronting the production of environmental risk under 178 neoliberalism

179 As the introduction to this volume argues, neoliber-
180 alism has been significantly constituted by reform of
181 social relations with biophysical nature, and in ways
182 that are central to the neoliberal project itself (see
183 McCarthy and Prudham, this volume). The converse is
184 also true; neoliberalism has become an important source
185 of change in environmental governance, and a source of
186 new environmental risks. Since antagonism to state-
187 centered regulation of any sort is central to neoliberal
188 ideologies, discourses and practices (Brenner and The-
189 odore, 2002), and since this includes regulation of cap-
190 ital’s access to and transformations of nature, various
191 specific neoliberalizations may be understood as the
192 sources of new environmental risks, or in Neil Smith’s
193 terms (Smith, 1984), implicated in the “production” of
194 new nature(s) that take shape as environmental hazards.
195 The origins of the Walkerton tragedy in neoliberal
196 governance reforms are what make it a “normal” acci-
197 dent of neoliberalism itself, comprising in Polanyian
198 fashion a political and ecological contradiction socially
199 generated or produced as a result of market (neo)liber-
200 alization.

201 The concept of a normal accident was developed by
202 Perrow (1999) as a way of describing catastrophic fail-
203 ures in systems whose characteristics make such events
204 inevitable. To be fair, Perrow did not have neoliberalism
205 in mind, and his notion is intended to be applied to

206 technologically and organizationally elaborate systems
207 (e.g. nuclear power production) together with the engi-
208 neering approaches used—in his view with a degree of
209 futility—to control and manage the risks of system
210 failure. I adopt and adapt the term here to denote the
211 ways in which neoliberalism generates endemic risks of
212 environmental catastrophes by building *organized irre-*
213 *responsibility* into regulatory systems; while the actual
214 circumstances of “accidents” are indeed important,
215 these must not obscure the systematic production of
216 probabilities that they will occur, nor the characteristics
217 of neoliberal regulatory systems that shape the potential
218 consequences when they do. Thus, the idea of a normal
219 accident of neoliberalism, as used here, is very much
220 akin to the ways in which environmental hazards have
221 long been understood as products of nature, yet also
222 socially produced in significant ways.⁴

223 There are in particular tempting parallels to be drawn
224 with Ulrich Beck’s widely influential thesis on environ-
225 mental risk and a new Risk Society (Beck and Ritter,
226 1992; Beck, 1999). In the case of the Walkerton tragedy,
227 Beck’s thesis is intriguing because he locates the pro-
228 duction of environmental risks of various kinds in a
229 sophisticated account of contemporary political econ-
230 omic and technological change. Moreover, he argues
231 that increasingly, environmental risks are becoming
232 endemic and pandemic in late modern society, as are the
233 politics and institutional strategies comprising socio-
234 logical responses. Beck specifically suggests that expo-
235 sure to new sources of environmental risk cuts across
236 traditional class fractions to “produce” a new politics of
237 risk, a perspective that at first glance would seem di-
238 rectly applicable to the contamination of municipal
239 water systems (though one might quickly identify
240 problems with the assumption that such risks are indeed
241 indiscriminate across social strata). However, Beck’s
242 original thesis suffered from a diffuse account of the
243 politics of risk production. Thus, as Benton, 1997 points
244 out in an important critique, while Beck’s thesis high-
245 lights the significance of new environmental risks and
246 their politics, his theory tends to downplay relatively
247 traditional themes in capitalist political economy
248 underpinning the production of such risks. Beck’s Risk
249 Society thesis makes it difficult to locate anything as
250 particular as neoliberalism as a significant political and
251 ideological influence on risk production. Yet, as Benton
252 demonstrates using the deregulation of animal feed in
253 Thatcherite Britain and its role in the UK’s mad cow
254 disease outbreak, new environmental risks are often
255 closely tied to struggles over the apparatus of the state as
256 a source of capitalist market regulation; neoliberalism
257 comprises arguably the most significant recent phase of

⁴ See e.g. White and Haas, 1975; Watts, 1983; Beck and Ritter, 1992; Davis, 1998, 2001; Pelling, 2001.

258 such struggles, and one that has literally swept across
259 the globe.

260 Though he does not directly invoke Karl Polanyi,
261 Benton's recourse to longstanding themes in the political
262 economy of capitalism as a foundation for appraising
263 contemporary environmental risk production calls to
264 the fore Polanyi's (1944) theory of nature as a "fictitious
265 commodity".⁵ As we indicate in the introduction, Po-
266 lanyi's powerful ecological critique of liberal capitalism
267 posits biophysical nature as both a structural and a
268 political contradiction to liberal capitalism's ever more
269 self-regulating market. Polanyi argues quite simply and
270 elegantly that ecological functions sustaining social and
271 economic life give the lie to the very idea of a market
272 able to regulate itself, since these functions do not re-
273 spond to price signals per se. This places social repro-
274 duction and the reproduction of the market (and
275 capital) in tension over competing demands on bio-
276 physical nature. Given the marked parallels between
277 liberalism and neoliberalism, Polanyi's framework is
278 directly relevant to considering the production of envi-
279 ronmental risks under neoliberalism.

280 This in mind, what is required is to locate the specific
281 manifestations of political ecological contradictions as
282 sketched by Polanyi and others within the context of
283 neoliberalism as a diverse, contingent, and contested but
284 nevertheless coherent phase in the capitalist regulation
285 of nature—that is, to interrogate the ecological con-
286 tradictions arising from specific neoliberalisms (Brenner
287 and Theodore, 2002) or neoliberalizations (Peck and
288 Tickell, 2002). Here, Regulation School perspectives on
289 crisis tendencies mediated through the articulation of
290 regimes of capital accumulation and modes of social
291 regulation provide a promising point of departure for
292 examining neoliberalism as a late capitalist mode of
293 social regulation (Jessop et al., 1990; Peck and Tickell,
294 1992, 1994; Tickell and Peck, 1995). However, and as we
295 also note in Section 1, very little has been offered
296 regarding the reconfiguration of environmental gover-
297 nance, and the manifestations and mediations of eco-
298 logical crisis tendencies under the neoliberal project.
299 Given the centrality of environmental change as a
300 political if not structural contradiction in globaliza-
301 as-late-capitalism (Giddens, 1994), it would seem vital
302 for Regulation theorists to elaborate and interrogate the
303 particular *ecological* dimensions of capitalist crises. Yet,
304 while some significant work in this arena has been
305 undertaken (O'Connor, 1988, 1998; Altvater, 1993;
306 Bridge, 2000; Bridge and McManus, 2000), only very
307 recently has any research explored the discursive and

institutional shifts in environmental policies and regula- 308
latory frameworks that reflect terms of the neoliberal 309
consensus, precursors to critical analysis of neoliberal- 310
ism as a new mode of social *and ecological* regulation. 311

This paper (along with this collection) is meant to 312
address in some manner these lacunae. I seek to locate 313
the Walkerton tragedy in the context of broader neo- 314
liberal governance reforms, implicating this project 315
while at the same time exploring it on its own terms as a 316
socio-ecological undertaking. The Walkerton tragedy 317
called into question the extent to which environmental 318
governance has been re-jigged in Ontario since the 319
election of the Mike Harris government in 1995, thereby 320
shining a light on the significance of environmental re- 321
regulation under this particular neoliberalization. This 322
reinforces a point we make in the introduction, namely 323
that while each such project is unique, it is evident that 324
environmental re-regulation is woven into the very 325
fabric of neoliberalism. This being the case, the Walk- 326
erton incident also highlights the potential for political 327
ecological contradictions to arise from neoliberalism's 328
organized irresponsibility in the social regulation of the 329
environment, in this case with tragic consequences. 330

2.1. Walkerton 331

Walkerton is a pastoral town of approximately 5000 332
people located in southern Bruce County, in the heart of 333
central-southern Ontario, approximately 150 km 334
northwest of Toronto (see Fig. 1). Set in the rolling 335
countryside of the upper Saugeen River watershed, it 336
acts as the administrative seat for Bruce County, and 337
has predominantly served as a kind of commercial and 338
service hub for the surrounding, predominantly rural 339
and agricultural area. Three factors local to Walkerton 340
feature centrally in the May 2000 tragedy: the region's 341
karst hydrology; livestock agriculture as a dominant 342
local land use; and the actions of water utility managers 343
at the Walkerton Public Utilities Commission (PUC). 344

2.1.1. Karst 345

In terms of local context, the particular karst hydro- 346
geology of the Walkerton area is extremely significant to 347
understanding why the tragedy occurred where it did. 348
"Karst is terrain with distinctive hydrology and land- 349
forms arising from a combination of high rock solubility 350
and well developed secondary porosity" (Ford and 351
Williams, 1989, p. 1). Karst formations, most of which 352
exist in carbonate rock, account for about 7–12% of the 353
earth's surface, yet provide water for as much as one 354
quarter of the world's population (Drew, Hötzl and 355
International Association of Hydrogeologists, 1999). 356
Distinct features of karst formations include networks 357
of channels and pockets in the rock, providing avenues 358
for underground water transport and storage. Karst is 359
formed in areas where soluble bedrock—primarily 360

⁵ Fictitious in that the divorce of markets from social regulation driven by the politics of liberalization schemes create the "illusion" that nature is a commodity, entirely produced and regulated by market forces.

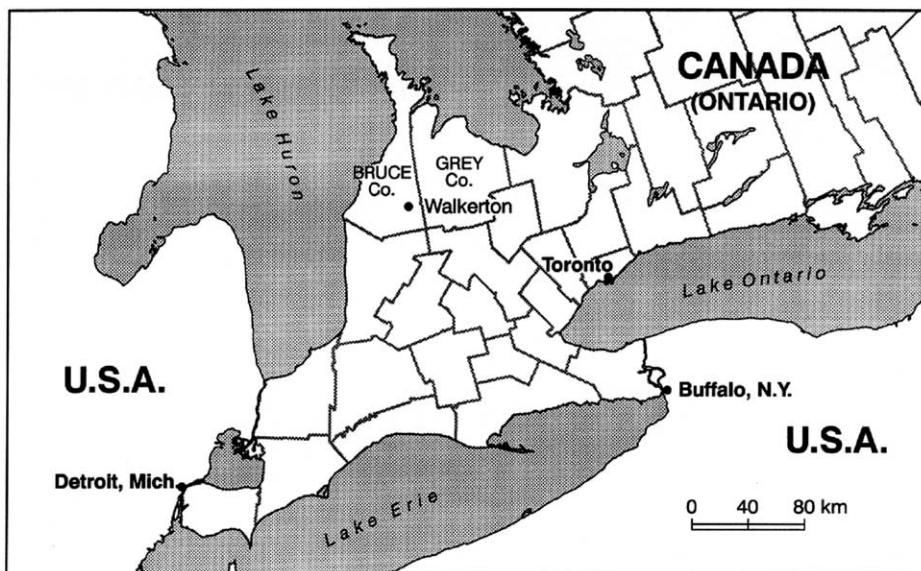


Fig. 1. Walkerton and its environs.

361 limestones—are at or near the surface, and become
 362 subject to weathering by water drainage. Over time,
 363 acidic drainage⁶ erodes the soft carbonate rock and
 364 opens networks of channels and chambers extending
 365 underground. In most karst formations, there are telltale
 366 surficial features, including sink-holes, disappearing
 367 streams, and caves. Indeed, karst formations are sites
 368 for some of the best known caves and caving activities,
 369 including Kentucky's famous Mammoth Caves.

370 Most of southern Ontario's bedrock is carbonate—
 371 including limestone and dolostone—deposited as sedi-
 372 ments during the Silurian period approximately
 373 400,000,000 years ago (Colville and Johnson, 1982;
 374 Cowell and Ford, 1983). Where karst formations exist in
 375 this bedrock, they have largely been rendered hydro-
 376 logically inactive by depositions of glacial till as much as
 377 100 m thick. Yet, in the Walkerton area, the carbonate
 378 bedrock is much closer to the surface. Despite relatively
 379 few visible surficial indications, limestone and dolostone
 380 formations underlie an extremely thin surface layer of
 381 gravel and soil, typically on the order of 5–15 m deep
 382 (Worthington et al., 2001). Because of its proximity to
 383 the surface, this layer of bedrock in the Walkerton area
 384 has been formed into hydrologically active karst (Cowell
 385 and Ford, 1980, 1983; Drew, Hötzl and International
 386 Association of Hydrogeologists, 1999).

387 Under such conditions, underground channels and
 388 pockets in the rock are readily susceptible to contami-
 389 nation. While all aquifers are re-charged by surface

waters, contamination of most aquifers by groundwater 390
 is prevented by gradual rates of infiltration through 391
 overlying soils and rock, removing contaminants. 392
 However, in karst, because of thin overburden and 393
 highly fractured bedrock, contaminated surface water 394
 may reach underground aquifers before contaminants 395
 are removed. This is a phenomenon most obviously 396
 apparent where sinkholes and disappearing streams 397
 funnel surface water directly underground, but it can 398
 also occur in places where aquifers are covered by very 399
 thin soil layers. Compounding this risk of aquifer con- 400
 tamination from direct infiltration, once groundwater 401
 becomes contaminated, polluted water may be rapidly 402
 propagated through karst via underground streams. 403
 Thus, in a report prepared for the Concerned Walkerton 404
 Citizens in the aftermath of the Walkerton tragedy, 405
 Worthington et al. (2001) note that the average velocity 406
 at which water flows through conduits in carbonate 407
 bedrock, based on tracer tests, is 1.7 km per day, al- 408
 though much higher propagation rates are possible. 409
 They also cite data collected from various points in 410
 southern Ontario showing propagation velocities rang- 411
 ing from 4.6 to 21 km/day. 412

413 Of particular concern in this context is the potential
 414 for runoff contaminated with bacteria (including *E. coli*
 415 and *Campylobacter jejuni*) to seep into groundwater and
 416 be propagated into wells and springs used for drinking
 417 water. This appears to be what happened in the Walk-
 418 erton case. In particular, one of the town's wells known
 419 simply as Well 5 has been implicated as the source of
 420 most if not all of the contamination during May of 2000
 421 (O'Connor, 2002b). Table 1 indicates the results of
 422 testing done on Well 5 in the aftermath of the tragedy to
 423 determine the link between well contamination and

⁶ One source of the acid is decaying organic matter in surface layers. As water passes through overburden materials, this decaying organic matter provides a source of dissolved carbon dioxide, rendering the water acidic.

Table 1
Contamination Tests on Well 5, Walkerton Ontario

Date of maximum rain	Maximum daily rain (mm)	Total rain in event (mm)	Total coliform (maximum) cfu/100 ml	<i>E. coli</i> (maximum) cfu/100 ml	Lag from rain peak to coliform peak (days)
6/25/2000	18	24.75	80	6	2
7/14/2000	30.75	50.5	52	16	1
7/31/2000	38.5	45	12	0	1
8/22/2000	8.25	10.5	13	0	1
8/26/2000	14	14.5	74	32	1
9/10/2000	26.26	26.26	2	0	1
9/14/2000	33.25	59.25	48	30	2
9/20/2000	24.75	31.5	10	2	4
10/6/2000	8.25	12	0	0	N/A
11/10/2000	25.75	35.5	2	0	0
11/16/2000	10	21.75	8	0	2

Source: Worthington et al. (2001).

Rain event defined as one or more consecutive days with rain.

424 surface water runoff (see Worthington et al., 2001).
 425 Following significant rain events, during which runoff is
 426 elevated, tests were conducted to determine the associ-
 427 ation between peak fecal coliform contamination in the
 428 well, and peak runoff. The results show a clear associ-
 429 ation, with lag times on the order of 1–4 days. This
 430 strongly suggests that the source of contamination in
 431 Well 5 is contaminated surface water draining into the
 432 aquifer and contaminating the well. This connection is
 433 strengthened by evidence of frequent contamination of
 434 Walkerton's water supply—particularly since Well 5 was
 435 drilled in 1977—on the order of 5–7 times per year
 436 preceding May of 2000, and usually in the aftermath of
 437 significant rainfall.⁷

438 2.1.2. Agricultural waste

439 This being the case, it does not answer where the
 440 bacteria that contaminated Walkerton's water origi-
 441 nated. Yet, the particular types of bacteria involved
 442 immediately suggested that livestock production and the
 443 spreading of manure on fields close to municipal wells
 444 may have played a role. Both *Campylobacter* and *E. coli*
 445 are common in the stomachs of cattle, while the par-
 446 ticularly lethal strain of *E. coli* that poisoned Walk-
 447 erton's citizens is endemic *only* in the guts of cattle.

⁷ In fact, in 1978 when Well 5 was brought on line, tests immediately revealed fecal coliform contamination, for which the Ministry of the Environment prescribed chlorination (instead of closure of the Well). A nearby spring dried up, indicating that the well was drawing surface water into the aquifer. In 1998, a MOE inspector from Owen Sound found that Walkerton's water had been regularly contaminated with *E. coli* since 1995, and that public health officials had not been notified. In addition, four Walkerton children became ill and tested positive for *E. coli* O157:H7 in July of 1998. The source of the contamination was never revealed. "The Walkerton Story", Toronto Star, Saturday October 14th, 2000.

This points to the potential significance of livestock 448
 farming in the Walkerton area, and more generally, to 449
 the association between livestock farming—particularly 450
 large, industrial scale farming—and groundwater pol- 451
 lution. Together, Bruce County and neighboring Grey 452
 County rank 2 and 1 respectively in Ontario beef cattle 453
 production (see Table 2). Both counties are also among 454
 the leaders in provincial hog production (Ontario Min- 455
 istry of Agriculture, Food, and Rural Affairs, 2001). 456
 Moreover, these counties are leading producers in a 457
 province that has experienced significant increases in its 458
 livestock production in recent decades. The number of 459
 total beef cows on Ontario farms has increased from 460
 134,000 head in 1950 to over 400,000 head in 2001 461
 (Statistics Canada, 2001). By 1999, Ontario was home to 462
 a total of over 2 million head of cattle in all, comple- 463
 mented by over 3.2 million hogs (Ontario Ministry of 464
 Agriculture, Food, and Rural Affairs, 2001). 465

These increases in the total number of animals, while 466
 significant, do not tell the whole story; the intensity of 467
 farming has also risen markedly. Farms are getting 468
 larger and more industrial, with one quarter of Ontario 469
 farms accounting for three quarters of provincial farm 470
 revenues (Miller, 2000a). Intensive farms with more than 471
 3000 hogs or 1200 head of cattle (many have more than 472
 10,000 hogs and 3000 head of cattle) have become more 473
 and more common in the province, paralleling wider 474
 trends in agriculture (see e.g. Goodman et al., 1987; 475
 Goodman and Redclift, 1991; Beaulieu, 2001; Boyd, 476
 2001; MacLachlan, 2001). At the same time, increases in 477
 herd size have been facilitated by industrial feeds and 478
 pharmaceuticals, allowing farm operations to scale up 479
 without proportional increases in land area (Beaulieu, 480
 2001; MacLachlan, 2001). This particular pattern of 481
 intensification results in considerable economic pro- 482
 ductivity gains, yet one of its implications is that less 483
 area is available on which to spread animal waste. This 484
 is no small problem; Ontario's hogs alone produce as 485

Table 2
Cattle on Farms, July 2000

Counties and districts	Dairy cows	Rank	Beef cows	Rank	Steers	Rank	Calves	Rank	Total cattle	Rank
Bruce	14,500	8	33,000	2	36,000	1	58,000	1	185,500	1
Dufferin	3,000		9,500		1,400		11,000		31,230	
Grey	9,200	12	36,000	1	27,500	4	42,000	2	141,800	2
Halton	600		1,100		3,600		1,000		6,910	
Huron	18,000		19,700		28,000		40,500		130,300	
Peel	5,500		3,800		400		5,400		19,200	
Perth	30,000		7,600		9,900		25,000		91,800	
Simcoe	8,000		22,200		13,500		23,500		78,450	
Waterloo	14,000		4,800		27,000		16,000		70,540	
Wellington	24,300		11,400		30,500		34,000		126,150	
Western Ontario	127,100		149,100		177,800		256,400		881,880	
Ontario	373,000		399,000		270,000		655,000		2,098,000	

Source: Ontario Ministry of Agriculture, Food, and Rural Affairs (2001).

486 much raw sewage as all of the province's 10 million
487 people (Miller, 2000b). With less land per head to ab-
488 sorb the disposal of manure by traditional spreading
489 techniques, and with more and more substitution of
490 synthetic organic fertilizers for manure, farm waste from
491 intensive livestock operations has literally no place to
492 go. Livestock manure presents a number of environ-
493 mental and human health hazards, but none more seri-
494 ous than its potential to contaminate surface and
495 groundwater, particularly in areas of karst where infil-
496 tration poses a direct threat to drinking water.⁸

497 As part of the Walkerton investigation, DNA tests
498 matched bacteria recovered from Walkerton's water
499 with cattle from a single farm next to Well 5, a farm
500 owned and operated by local resident Dr. David Bie-
501 senthal. It bears noting that Dr. Biesenthal's operation
502 was not a particularly large one; the herd on his 54 ha
503 farm was only about 95 head (O'Connor, 2002b), hardly
504 an industrial operation. Moreover, although the farmer
505 was subject to considerable local criticism and social
506 ostracism, inquiry chief Justice Dennis O'Connor spe-
507 cifically exonerated Dr. Biesenthal, noting that the
508 farmer's waste management complied with what were
509 then considered best practices under provincial guide-
510 lines (O'Connor, 2002b). Yet, if such contamination
511 could come from a relatively small livestock farm, this
512 only emphasizes the potential risks from larger and/or
513 more intensive farms; and if Dr. Biesenthal followed

existing guidelines, this begs important questions about
the regulatory context for waste management and dis-
posal.

2.1.3. Stan and Frank Koebel

If the combination of karst hydrology and livestock
farming were two local contributors to the poisoning of
Walkerton's water, then the conduct of local water
system management was a third. Like 80% of the mu-
nicipal water systems in Ontario, Walkerton's drinking
water system and supply is managed by a public utility
chartered and funded in part by the province (Watson
and Associates, 2001). Walkerton's utility, similar to
other municipalities, is run by a combination of elected
representatives on the Walkerton PUC and staff hired
by the board to run day-to-day operations. In the
aftermath of the Walkerton tragedy, considerable scru-
tiny was directed at these people, not least by Premier
Harris, who sought throughout the public inquiry and
after to pin the blame on two brothers, Stan and Frank
Koebel; while Stan was the general manager of the
Walkerton PUC, Frank was its foreman.

There is certainly ample evidence to suggest negli-
gence and possible criminal misconduct by the Koebel
brothers, and charges have since been brought by the
province against them. On Saturday, May 13th, 2000, in
the aftermath of severe rainstorms that likely introduced
most of the contamination into Well 5 (at the time the
primary source of the town's water), Frank Koebel was
responsible for conducting routine tests on pumping
rates and chlorine residuals. The importance of this
chlorine residuals test is to indicate the extent to which
chlorine remains in the water following treatment. High
chlorine residuals indicate low levels of contamination;
low chlorine residuals indicate the presence of bacteria
in the untreated water, while the absence of chlorine
indicates that bacteria may remain in treated water,
since all the chlorine has been used up. However, as had

⁸ The link between these operations and threats to drinking water were recognized locally long before May of 2000. On several occasions, local citizens and the town council have issued warnings about the environmental effects of intensive livestock production. In September of 1998, Walkerton joined with a number of Ontario municipalities in calling on the provincial government to tighten restrictions on livestock farms. The following year, a local citizens group called Citizens Actively Representing Environmental Security (CARES) petitioned the town to declare a moratorium on intensive livestock farms in the area.

551 been the practice of PUC employees for 20 years, Frank
 552 did not measure chlorine residuals that day nor in the
 553 days that followed, instead entering false information in
 554 log books kept by the utility. Then, on Wednesday, May
 555 17th, A&L Laboratories—the private lab contracted by
 556 the Walkerton PUC to conduct water tests—telephoned
 557 and faxed information to Stan Koebel indicating
 558 extensive contamination of the town's water supply,
 559 including treated water. While the lab did not report the
 560 findings to the province, as it arguably should have, Stan
 561 Koebel, despite his position as the PUC's general man-
 562 ager, did nothing.⁹ Only two days later, in response to
 563 inquiries from the regional Ministry of Health Office did
 564 Koebel respond by flooding the system with chlorine
 565 until residuals were restored; still, he remained silent.
 566 Evidence of the lab tests was not provided to the Min-
 567 istry of the Environment (MOE) until directly de-
 568 manded by Ministry staff on Monday, May 22nd, after
 569 the boil water advisory had been issued and the scandal
 570 had begun to erupt.¹⁰

571 Compounding actions in the Spring of 2000 was a
 572 longstanding pattern of abuse, and evidence that the
 573 Koebels lacked qualifications to occupy the positions
 574 they held. Not only did PUC staff under Stan Koebel's
 575 direction conduct chlorine residual tests improperly,
 576 they also routinely mislabelled samples, neglected to
 577 chlorinate drinking water altogether, submitted false
 578 reports to the MOE, and apparently made a regular
 579 practice of drinking alcohol at work. In addition, al-
 580 though Stan Koebel had certification as a water system
 581 operator, at no time did he complete any formal training
 582 as such. Instead, Koebel had been nominated for certi-
 583 fication under a provincial process allowing existing
 584 operators to be "grandfathered" into compliance in the
 585 late 1980s, and had thereafter received pro forma
 586 renewals of his certification. Incredibly, *Koebel testified*
 587 *to the public inquiry that he had never read the province's*
 588 *guidelines on unsafe drinking water, and did not know*
 589 *what E. coli were.* Although provincial guidelines in
 590 operation at the time of the tragedy required Koebel to
 591 undertake annual training, he complied by recording
 592 activities irrelevant to the technical aspects of main-
 593 taining clean drinking water, including for example,
 594 marketing and cardio-pulmonary resuscitation courses
 595 (O'Connor, 2002b).

⁹ In fact, when asked on May 19th about the water in light of an outbreak of diarrhea among Walkerton children, Mr. Koebel described the water as "okay" (O'Connor, 2002b).

¹⁰ This sequence is largely based on information in O'Connor (2002b).

3. Neoliberalism in Ontario

596

597 Given the scandalous conduct of Walkerton PUC
 598 staff (particularly the Koebels), the temptation to blame
 599 them for the tragedy is obvious. Yet, as Justice
 600 O'Connor wrote in his inquiry report:

"It is simply wrong to say, as the government argued at the Inquiry, that Stan Koebel or the Walkerton PUC were solely responsible for the outbreak or that they were the only ones who could have prevented it" (O'Connor, 2002b, p. 24).

606 While the conduct of PUC staff contributed to the
 607 tragedy, and certainly made the impacts of contamina-
 608 tion worse, the environment of neoliberal governance
 609 reform makes the Walkerton incident a normal accident.
 610 Specifically, the poisoning of the town arose from
 611 broad, systematic irresponsibility in environmental
 612 governance, and from specific gaps in regulatory cov-
 613 erage including agricultural waste and groundwater
 614 management provisions. In this section I review the
 615 broad architecture of environmental neoliberalism in
 616 Ontario, in order to convey the extent to which neolib-
 617 eralization in the province was indeed predicated on
 618 environmental re-regulation, and to convey important
 619 issues of context for the Walkerton incident. I also dis-
 620 cuss specific gaps directly relevant to the confluence of
 621 industrial livestock farming and groundwater manage-
 622 ment.

623 In significant measure, the adoption of neoliberal
 624 policies in Ontario actually pre-dates election of a neo-
 625 conservative provincial administration in 1995, perhaps
 626 one more indication of the hegemonic character of
 627 neoliberal discourses and practices in late capitalist so-
 628 cial regulation (Laclau and Mouffe, 1985; Jessop, 1994;
 629 Harvey, 2000; Peck, 2001). Specifically, in the early
 630 1990s the social democratic government of Ontario's
 631 New Democratic Party (NDP) led by Premier Bob Rae
 632 was confronted with a witches brew of deteriorating
 633 economic conditions, the political disintegration of
 634 Rae's Social Contract¹¹ initiative, and extreme pressure
 635 from domestic and international finance capital to adopt
 636 fiscal reforms. In response, Rae's NDP embraced aus-
 637 terity. Crucially, environmental spending suffered some
 638 of the deepest cuts; having peaked under Rae at \$824
 639 million (all figures in 1998 dollars) in 1991–1992, fund-
 640 ing for environmental programs in the province dropped
 641 to \$352 million in 1994–1995 (Krajnc, 2000) (see Fig. 2).

¹¹ Under Rae, the provincial NDP first responded to worsening economic conditions by attempting to negotiate wage and employment concessions from public sector unions in the province. The effort collapsed under deteriorating conditions between the NDP and organized labor, the party's traditional support base.

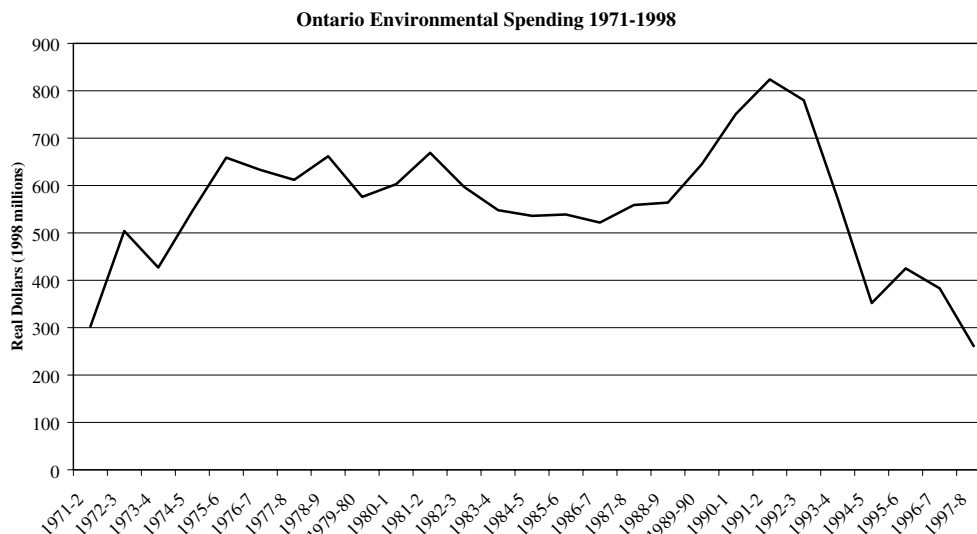


Fig. 2. Ontario environmental spending 1971–1998.

642 Seeking specific relief from the costs of water testing
 643 under the auspices of the MOE, the NDP also restruc-
 644 tured provincial–municipal relations governing drinking
 645 water management via two pillars of the neoliberal
 646 consensus: regulatory and administrative devolution
 647 (downscaling); and privatization (Harvey, 1989; Tickell
 648 and Peck, 1995; Brenner, 1999; Peck, 2001). In 1993, the
 649 province for the first time introduced charges to local
 650 municipalities for the costs of water tests undertaken by
 651 the provincial MOE. As an alternative to paying these
 652 fees, however, the Rae administration also opened the
 653 door for and even encouraged contract testing by pri-
 654 vate labs. Divesting itself from water quality control, the
 655 province introduced no certification program for these
 656 private labs, nor any procedures for provincial notifi-
 657 cation by either the labs or municipalities in the event of
 658 water contamination. All the while, the province re-
 659 mained without a groundwater protection or manage-
 660 ment plan, nor even binding water quality standards.

661 3.1. *The environment of common sense*

662 If policies enacted by a party of democratic socialist
 663 heritage provided the thin edge of the neoliberal wedge,
 664 it was nevertheless the emergence of a new political
 665 coalition united under the provincial Progressive Con-
 666 servative Party that delivered much more far-reaching
 667 neoliberal reforms (see Keil, 2002), and specifically
 668 environmental governance reform. NDP attempts to
 669 retain power in the election campaign of the spring of
 670 1995 turned into a rout. Rejecting Rae’s re-election bid,
 671 Ontario voters turned to the Big Blue Machine, a pro-
 672 vincial “Tory” party traditionally known for Whig
 673 conservatism but re-invented under the leadership of
 674 former North Bay golf pro Mike Harris as a viciously

revanchist neoliberal juggernaut. On June 8th, Harris
 was elected premier, drawing on a coalition of suburban
 small business support, a fanatically neoliberal youth
 movement, and the traditional but now muted “old
 money” core of the provincial Tories.

The discursive and institutional tropes of the new
 government followed a rather stunningly familiar for-
 mula reminiscent of earlier neoliberal projects under
 Margaret Thatcher and Ronald Reagan (Jessop et al.,
 1990; Peck and Tickell, 1992, 1995; Tickell and Peck,
 1995; Peck, 2001). Dubbed the “Common Sense Revo-
 lution”, it was textbook rollback, featuring: steep
 spending cuts; tax reduction for the wealthiest; welfare
 and workfare reform; sweeping state retrenchment; and
 liberalization of provincial labour laws and markets
 (Keil, 2002). Public servants and unionized workers
 became the new evils, opponents of freedom, of pro-
 gress, of prosperity, and worse, of common sense. And
 under Harris, “common sense” meant markets, markets,
 and more markets, the obvious, self-evident or natural
 solution to every policy problem, and pursued via three
 familiar tropes of rollback neoliberalism: fiscal austerity;
 deregulation and re-regulation; and privatization.

Critically, these strategies were visited in significant
 measure by deep restructuring of environmental gover-
 nance in Ontario. In some measure, this is to be expected
 given the substantial but often overlooked ways in
 which neoliberalism is inherently an environmental
 project, a key theme of this issue of *Geoforum*. Even so,
 the Common Sense Revolution was a remarkably nat-
 ure-centered project. In part, this is due to the specific
 political economic context. Under the Canadian federal
 system, provinces hold broad jurisdiction over regula-
 tion of the environment (Harrison, 1996, 2000; Hessing
 and Howlett, 1997). The Ontario MOE thus has primary

710 jurisdiction over regulating environmental quality in the
711 province, including for example playing a key role in
712 setting and enforcing air and water quality standards,
713 and in regulating the handling, transport and storage of
714 hazardous wastes. Likewise, the Ministry of Natural
715 Resources (MNR) has primary jurisdiction over the
716 province's Crown lands, which in turn comprise 85
717 percent of Ontario's land base. The significance of this
718 authority is only magnified by the prominence of pri-
719 mary activities in Ontario, including the mining and
720 forest industries.¹²

721 Among the first items on the Common Sense agenda
722 was fiscal austerity aimed at environmental regulatory
723 and resource management agencies. Building on and
724 deepening the budget cuts introduced by the Rae gov-
725 ernment during the early 1990s, the first Common Sense
726 budget cut environmental spending by an additional one
727 third (see Fig. 2). Significantly, while earlier cuts had left
728 core programs intact, those under Harris sliced much
729 deeper, including the elimination of fully one third of the
730 MOE's 2000 total staff positions. Deep staff cuts were
731 also announced at the MNR, including over 2100 jobs
732 (Krajnc, 2000). Significantly, this round of cuts was
733 essentially ideological. In the words of Justice O'Connor
734 following the Walkerton inquiry:

“The reductions were initiated by the central agen-
cies of the government rather than from within the
MOE, and they were not based on an assessment of
what was required to carry out the MOE's statutory
responsibilities.” (emphasis added) (O'Connor,
2002b, p. 34)

741 Taken to such an extreme, austerity measures serve as
742 a form of *de facto* de-regulation, crippling certain
743 administrative and regulatory functions by depleting
744 both funds and staff. Core programs, rules, and regu-
745 lations do not officially change, but are instead simply
746 reduced to a purely rhetorical status, dematerialized by
747 the slashing of administrative budgets and staffing levels.
748 Yet, under the CSR, this fiscal form of de-regulation
749 often proceeded hand-in-glove with direct administra-
750 tive re-regulation, that is, targeted weakening or elimi-
751 nation of regulatory oversight. As austerity made
752 achieving certain regulatory functions impossible,
753 administrative re-regulation altered or eliminated the
754 programs in order to consolidate cuts and eliminate
755 responsibilities as so many “loose ends”. Thus, for
756 example, during the spring of 1996 when an Ontario

fruit and vegetable inspection program aimed at con- 757
trolling pesticide residues and conducted by the Ministry 758
of Agriculture, Food, and Rural Affairs (OMAFRA) 759
became impossible to execute due to funding and staff 760
cuts, the program was simply terminated altogether. 761

In addition, however, direct, targeted environmental 762
re-regulation took on a character all its own under the 763
Common Sense Revolution, not merely as a by-product 764
of fiscal austerity. Thus, sweeping, Omnibus style legis- 765
lation made broad, and seemingly unrelated changes to 766
a host of laws and administrative procedures. The first 767
of these was Bill 26 (known simply as the *Omnibus Bill*), 768
which in 1996 amended 44 different statutes all at the 769
same time. The overall flavour of the Bill emphasized 770
industry self-regulation, and the replacement of man- 771
datory with voluntary standards and participation. 772
Specific provisions of the Bill included elimination of 773
required MOE approval for mine closures, and reduced 774
mining company liability for clean-up and site remedi- 775
ation following closures. A second major Omnibus style 776
initiative was dubbed rather tellingly the Red Tape 777
Reduction Bill of 1998. Even broader than the Omnibus 778
Bill, the Red Tape Reduction Bill amended 98 different 779
statutes at once, many of them with direct environ- 780
mental and natural resource implications, including re- 781
moval or delegation of numerous environmental 782
permitting processes. Arguably its most significant 783
implication vis-à-vis the creation of conditions for nor- 784
mal accidents such as the Walkerton tragedy was bor- 785
rowed directly from the Reagan neoliberal playbook;¹³ 786
provincial regulatory agencies were required to conduct 787
cost-benefit analyses prior to setting any new adminis- 788
trative rule or standard. The measure obviously created 789
obstacles to administrative rule setting, and acted to 790
dissuade new initiatives. But when combined with dra- 791
matic staff reductions and consistent rhetorical attacks 792
on public sector employees and their unions, the result 793
was a chill on environmental oversight. Many govern- 794
ment employees reported steep drops in morale, under- 795
mining their sense of purpose in ways that made it less 796
likely for them to show any initiative; moreover, staff 797
with the MOE reported being specifically instructed by 798
senior bureaucrats and legislative staff *not to prosecute* 799
violators of a range of environmental standards and rules 800
(Krajnc, 2000).¹⁴ 801

Although there is a potential for progressive devolu- 802
tion of regulatory administration if it enhances direct 803
citizen participation (Dryzek, 2000), the Harris admin- 804
istration combined elimination of provincial regulatory 805

¹² For example, Ontario is an extremely significant producer of minerals on a global scale. Ontario accounts for slightly less than 30% of the total value of Canada's minerals production, and Canada in turn is among the most significant global producers and exporters of minerals (Mining Association of Canada, 2003).

¹³ On the environmental dimensions of neoliberalism under Reagan, see Dowie (1995) and Vig and Kraft (1984).

¹⁴ Canadian Environmental Law Association 1999. “Guide to Environmental Deregulation in Ontario”. <http://www.cela.ca/appendix.htm>. Accessed November 9th, 2000.

806 responsibilities with dismantling of most of Ontario's
807 environmental advisory boards and commissions. This
808 includes termination of the Advisory Committee on
809 Environmental Standards, the Environmental Assess-
810 ment Advisory Committee, and the Ontario Roundtable
811 on the Environment and the Economy (Krajnc, 2000).
812 The demise of these advisory boards and commissions—
813 in combination with elimination of provincial funding
814 for citizen groups to organize and contribute to a range
815 of provincial regulatory and administrative pro-
816 cesses¹⁵—meant closure of critical avenues for inde-
817 pendent scientific and public input, effectively
818 consolidating the power of elite policy-makers within
819 Harris's inner circle, and freeing up capital from inde-
820 pendent oversight and accountability. These and other
821 similar initiatives prompted the Ontario Ombudsman in
822 her 1997 annual report to raise concerns about the
823 provincial government's delegation of regulatory func-
824 tions to industry, which she argued were creating po-
825 tential liabilities, a lack of transparency, and serious
826 conflicts of interest in the regulatory system (Jamieson,
827 1997).

828 The third avenue of neoliberal environmental gover-
829 nance reform under the Common Sense Revolution was
830 outright privatization. Privatization can not be consid-
831 ered as wholly distinct from re-regulation, nor indeed
832 from fiscal austerity; instead, fiscal downsizing and the
833 reduction and removal of regulatory controls often act
834 in de facto fashion to consolidate property rights. This is
835 apparent, for example, in considering changes removing
836 regulatory constraints on minerals and aggregate mining
837 under the Common Sense Revolution, and reductions in
838 the enforcement of environmental standards and regu-
839 lations.¹⁶ Reflecting this overall predilection for the
840 rights of capital, Anita Krajnc notes in delightful
841 understatement in reference to the environment of On-
842 tario's Common Sense Revolution (2000, p. 123),
843 "There tends to exist an underlying aversion to the

concept of public goods and the implicit role for gov- 844
ernment in protecting these goods on behalf of society". 845

Yet, in addition to *de facto* privatization, the CSR 846
featured no shortage of more direct approaches to 847
capitalizing nature (O'Connor, 1988) via the enhance- 848
ment of private claims over lands and natural resources, 849
and private provisioning of environmental services. 850
These efforts include the so-called "Lands for Life" 851
initiative, under which the province entered negotiations 852
with forest capital to create long-term tenures over 853
public forest lands in place of shorter term harvest 854
rights. Justified in terms of the Tragedy of the Commons 855
discourse—a central discursive underpinning of envi- 856
ronmental neoliberalism (Dryzek, 1997)—the program 857
represented a marked departure from existing tenure 858
rights, made all the more significant given that provin- 859
cial forest lands cover fully half of Ontario.¹⁷ Other 860
fronts in the thrust toward privatization included the 861
dismantling and sale of Ontario Hydro, previously one 862
of the largest energy utilities in North America, as well 863
as deepening earlier NDP gestures toward privatization 864
of water and other utilities. 865

With respect to the latter, the Omnibus Bill of 1996 866
repealed a Public Utilities Act provision requiring a 867
public referendum prior to the sale of any utility. This 868
was followed by Bill 107 in 1997 which fully divested the 869
province of responsibility for sewage and water, and laid 870
out guidelines for the outright sale of municipal utili- 871
ties.¹⁸ While this was typically justified based on the 872
claim that public service provision is inefficient, not least 873
because of its supposed distortion of price and cost 874
signals, the government's rhetoric played on false 875
dichotomies. This is, as noted by Rees (1998), a common 876
strategy of privatization schemes by zealots who ignore 877
that actually existing water utility structures rarely 878
conform to ideal types of public and market provision- 879
ing; and Ontario is no exception. Thus, for example, 880
contrary to CSR discourse, prior to utility reforms 881
introduced under Harris, *there was no provincial* 882
restriction on Ontario public utilities from employing 883
marginal pricing schemes (Watson and Associates, 2001). 884

4. Regulating agriculture and municipal water 885

All of these aspects of neoliberal reform provide 886
important context for the Walkerton tragedy in signifi- 887
cantly configuring the institutions and politics of envi- 888
ronmental regulation in the province. Yet no 889

¹⁵ Accomplished by allowing the Intervener Funding Act to expire.

¹⁶ For example, in 1997, jurisdiction over the Niagara Escarpment Commission was abruptly transferred from the MOE to the MNR. The NEC is a special body established to administer development along the Niagara Escarpment, a unique landform over which Niagara Falls plunges, and recognized by the UN Biosphere Reserve Program. The move was a rather transparent attempt to free up valuable resources—including agricultural land, limestone, and aggregates—of the Escarpment, given the developmental mandate of the MNR (and a more industry friendly culture in the Ministry's staff on the whole) as opposed to the more conservation and preservation oriented MOE. However, these intentions were further revealed and to some extent actualized when seven new commissioners were appointed to the NEC in 1997, all of whom had at one time or another called for *abolition* of the Niagara Escarpment Plan and the NEC altogether. Further bolstering the aggregates industry, the Harris administration included in Bill 52 an amendment to the Aggregate Resources Act, introducing voluntary standards and monitoring in aggregates extraction. See <http://www.cela.ca/appendix.htm>, op. cit.

¹⁷ <http://www.cela.ca/appendix.htm>, op. cit.

¹⁸ The privatization of municipal utilities is now on hold, following the Walkerton water scandal which directed much more public scrutiny in the direction of the CSR agenda vis-à-vis municipal water systems.

890 connections are as direct as those made apparent by
891 examining tendencies in the regulation of agricultural
892 waste disposal and municipal water quality in the years
893 prior to the May 2000 tragedy. In each case, despite
894 clear indications of the need for improved protections
895 against environmental pollution and risks to human
896 health, the provincial government not only avoided
897 dealing with the issue, but exacerbated the risks by
898 privileging unrestricted, market coordinated activities.

899 In the realm of regulating agricultural waste disposal,
900 provincial failures to address the suite of problems
901 associated with these wastes have deep roots, preceding
902 in significant measure the Common Sense Revolution.
903 Moreover, despite longstanding concerns about the
904 problems posed by agricultural wastes, very little was
905 ever done prior to Walkerton by way of setting and
906 enforcing binding standards on the farm sector's waste
907 handling practices in Ontario. In 1984, the provincial
908 government under then Liberal premier David Peterson
909 passed the Ontario Environmental Protection Act,
910 which came to be known as the Ontario "spills bill".¹⁹
911 Although the bill imposed new standards and proce-
912 dures on the storage and transport of hazardous wastes,
913 and also created clear financial responsibilities for han-
914 dlers in cases of accidents, the government bowed to
915 Ontario's powerful farm lobby and exempted the farm
916 sector from inclusion in the bill.²⁰ This exemption is
917 complemented by the federal Livestock Operations Act
918 which specifically exempts large factory-farm opera-
919 tions from Canadian Environmental Impact Assessment
920 regulations, and which *fails to distinguish livestock*
921 *operations with more than 20 animals*. In tandem, these
922 arrangements afforded livestock operations a compara-
923 tively laissez-faire regulatory milieu, ignoring the sig-
924 nificant environmental and health risks associated with
925 increasingly industrial livestock farms (Winson, 1993;
926 Miller, 2000b; Beaulieu, 2001; MacLachlan, 2001).

927 Yet, a still-potent farm lobby, in combination with
928 the Harris administration's ideological zeal for private
929 property rights and regulatory rollback further under-
930 mined the social regulation of farm waste. Fiscal and
931 administrative downsizing crippled the OMAFRA,
932 where the total staff was reduced to 661 positions by
933 2000, down two thirds from a decade before. Moreover,

934 in 1998, the Harris administration passed so-called
935 "right-to-farm" legislation under the auspices of the
936 Farming and Food Production Protection Act
937 (FFPPA). The FFPPA centralized and bureaucratized
938 regulation of farm waste, blocking community level
939 complaints against farm operations, including those
940 pertaining to manure handling and disposal, and created
941 instead the Normal Farm Practices Protection Board at
942 the provincial level (Miller, 2000a). The Board, staffed
943 with provincial appointments, and stacked by the Harris
944 government with representatives from agro-industry,
945 was given the authority to issue policy statements
946 defining "normal" farm practices. Via this mechanism,
947 municipalities and citizens were effectively blocked from
948 restricting any farm practices that fell under the rubric
949 of "normalcy" as defined by the Board. The FFPPA
950 thus effectively strengthened the property rights of live-
951 stock producers by insulating them from the kind of
952 political pressure envisioned by Polanyi—in short,
953 intervening on behalf of the self-regulating market at the
954 expense of wider social regulation. Not surprisingly, up
955 to and after the Walkerton tragedy, there were in fact *no*
956 *binding* requirements for manure storage or application
957 in Ontario (O'Connor, 2002a).

958 Similar, systemic issues are apparent in provincial
959 regulation of municipal drinking water supplies, and in
960 provisions governing the protection and management of
961 groundwater in Ontario. As noted, it was actually Bob
962 Rae's social democratic NDP that first allowed private
963 water testing labs as an option to provincial labs. In
964 addition, it was the NDP that downscaled fiscal
965 responsibility for water testing to the municipalities by
966 introducing charges for the "service". But it was Har-
967 ris's administration that force-fed the market solution to
968 municipalities by closing all three regional public water
969 testing labs run by the MOE in 1996—ending provincial
970 testing. The market solution was subsequently extended,
971 as noted earlier, by a series of steps, including changes to
972 the Public Utilities Act, signalling provincial intentions
973 to completely privatize the utilities themselves, and
974 eventually, to create competition in the provision of
975 municipal drinking water.

976 The Harris administration then created what proved
977 to be a lethal combination of privatization accompanied
978 by laissez-faire re-regulation. Despite forcing munici-
979 palities to contract out for water testing, the province
980 passed no legislation or binding policy requiring either
981 the municipality or the private labs to notify the prov-
982 ince in cases of contaminated water. The province also
983 failed to introduce any regulations whatsoever to con-
984 trol the quality of testing at the private labs, including
985 no certification programs for labs or their staff, no
986 provisions for inspection, and no auditing procedures.
987 Despite privatization, and thus the need for new regu-
988 latory standards to guide private sector decisions and
989 practices (Rees, 1998), there was no real oversight

¹⁹ This was prompted by a near catastrophic 1979 train derailment in Mississauga, Ontario (just West of Toronto) resulting in the release of poisonous chlorine gas and the largest evacuation on Canadian history, and by grassroots mobilization around the problem of toxic pollution in Ontario's Chemical Valley, near Detroit (Adkin, 1998).

²⁰ Critical to the politics of this exemption was the farm lobby's familiar discursive representation of farmers as a yeoman class of small, independent producers in need of protection from the "burdens" of environmental regulations, a characterization clearly problematic in the context of increasingly industrial, and in some instances, thoroughly corporate farm operations.

990 introduced whatsoever. In fact, the province did not
 991 pass any legally binding water quality standards of any
 992 kind until after Walkerton.²¹ In 1996, despite a plethora
 993 of domestic and international evidence as to its potential
 994 toxicity, under Harris, the MOE actually dropped *E. coli*
 995 from a provincial contaminants list under the Drinking
 996 Water Surveillance Program, a program that was itself
 997 subsequently cut altogether.²² In addition, despite re-
 998 peated calls from citizens and concerned scientists over
 999 years leading up to the Walkerton incident, the Harris
 1000 administration also failed to develop a groundwater
 1001 management plan. Finally, although the province con-
 1002 ducted periodic inspections of municipal water systems
 1003 and procedures, the lax guidelines for such procedures—
 1004 not unique to the CSR but made more significant by
 1005 privatization and laissez faire re-regulation—allowed
 1006 systematic incompetence and fraud to go unchecked in
 1007 Walkerton, despite inspections in 1991, 1995, and 1998
 1008 (O'Connor, 2002b). While the MOE knew of chronic
 1009 problems in Walkerton, it took no steps toward legal
 1010 enforcement of any guidelines or standards.

1011 4.1. *An environment of risk and normal accidents*

1012 The combined effects of austerity, administrative de-
 1013 and re-regulation, and privatization have significantly
 1014 re-jigged the social regulation of Ontario's environment
 1015 and access to its natural resources, the fallout from
 1016 which has had wide-reaching implications for the pro-
 1017 duction of nature and environmental risk in the prov-
 1018 ince. For example, by 1997, total fines levied against
 1019 violators of provincial environmental standards drop-
 1020 ped to their lowest levels in ten years, with no evidence
 1021 of increased compliance. In fact, according to the North
 1022 American Commission for Environmental Cooperation
 1023 (2002),²³ Ontario had by 1999 become one of the four
 1024 largest sources of total chemical releases and total
 1025 chemical "loadings", along with Texas, Pennsylvania,
 1026 and Ohio—and ahead of states such as California and
 1027 New York both with more than triple the population.
 1028 And, in a report issued in 2000, the Ontario Medical

²¹ "New Ontario drinking water laws come into effect following Walkerton tragedy", Canadian Press Newswire, August 28, 2000.

²² "Contamination: the poisonous legacy of Ontario's environmental cutbacks", Ulli Diemer, Canadian Dimension, July/August 2000, v.34(4): pp. 33–35.

²³ The Commission for Environmental Cooperation of North America was set up under a North American Free Trade Agreement provision to deal with environmental concerns related to the implementation of the treaty. It is comprised of politically appointed representatives from Canada, the US, and Mexico, and could hardly be described as a crusader for stringent environmental protection. Chemical loadings tracks on-site chemical releases, off-site transfers to other locations within the same jurisdiction, and the amount of chemicals received from another jurisdiction (Commission for Environmental Cooperation, 2002).

Association attributed 1900 extra deaths per year in 1029
 Ontario to poor air quality in the province, laying most 1030
 of the blame on the provincial government for failing to 1031
 set and enforce adequate air quality standards,²⁴ Not- 1032
 ing the pervasive character of these trends, the Envi- 1033
 ronmental Commissioner of Ontario wrote in her 1999 1034
 annual report: 1035

Evidence of the deterioration of the province's envi-
 ronmental protection standards is widespread. The
 Ministry of Natural Resources' much reduced staff-
 ing and its reliance on industry self-monitoring
 raised questions about the ministry's capacity to
 protect the province's natural resources effec-
 tively... Environmental initiatives of the Ministry
 of the Environment, which have been highly touted
 by the Ontario government, are unlikely to deliver
 the level of protection promised... The ministry is
 retreating from enforcement of effluent limits and
 is making little progress on applying pollution pre-
 vention to hazardous wastes. It has promised to up-
 date 70 provincial air quality standards, but in two
 years, has produced only nine guidelines and no
 new enforceable standards. Less government in this
 case means less enforcement and less environmental
 protection. In order to maintain the semblance of
 environmental protection, ministry officials have re-
 sorted to describing the "co-benefits" of existing
 programs, attempting to involve industry in volun-
 tary measures and transferring responsibility for
 environmental decisions to municipalities"
 (emphasis added)

- Eva Ligeti, former Environmental Commissioner of 1060
 Ontario, "A Message from the Environmental Com- 1061
 missioner of Ontario", 1999. 1062

As a reward for her diligence, premier Harris had 1063
 Ligeti fired from her post and replaced by Gord Miller, 1064
 president of the federal Progressive Conservative Party's 1065
 riding association in Harris's home electoral district of 1066
 North Bay. 1067

The sweeping climate of neoliberal reforms, and 1068
 specifically those targeting environmental governance, 1069
 imposed via the Common Sense Revolution also pro- 1070
 vided both direct and proximate causation in making 1071
 the Walkerton water poisoning a normal accident of 1072
 regulatory failure. This was not lost on Justice Dennis 1073
 O'Connor in his first volume report on the tragedy. 1074
 O'Connor emphasized the significance of budget and 1075
 staffing cuts conducted without any assessment of the 1076
 MOE's capacity to carry out its functions, and also cited 1077

²⁴ Ontario Medical Association 2000. *Illness Costs of Air Pollution*. OMA, Toronto.

1078 low staff morale and a lack of initiative in the “regula-
 1079 tory culture” created by measures such as the Red Tape
 1080 Reduction Bill as important contextual considerations.
 1081 Specifically, it is important to consider links between the
 1082 broad antagonism to environmental regulation created
 1083 under the CSR, and the failure of ministry staff to close
 1084 regulatory loopholes, including reporting requirements
 1085 for private water testing labs. Clearly, there was no
 1086 incentive in place to do so; in fact, quite the opposite
 1087 was the case. As O’Connor writes “The evidence showed
 1088 that the concept of a notification regulation would likely
 1089 have been ‘a non-starter’, given the government’s focus
 1090 on minimizing regulation” (p. 33).

1091 The fruits of these conditions for regulatory failure
 1092 are evident in the Walkerton chronology.²⁵ On April
 1093 24, 2000, the town of Walkerton switched private water
 1094 labs, from GAP Laboratories, an accredited water lab,
 1095 to A&L Laboratories Canada East, a firm not accred-
 1096 ited to conduct bacteria tests in Canada (but legally
 1097 enabled to conduct such tests in Ontario because of
 1098 regulatory gaps—that is, of systematic irresponsibility).
 1099 On May 5th, A&L found contamination in samples of
 1100 treated Walkerton water, and notified the town PUC.
 1101 No notice was sent to either the MOE or the regional
 1102 Medical Officer of Health. On Tuesday, May 16th, A&L
 1103 Labs notified the town PUC that Well 7 was contami-
 1104 nated with 200 plus counts of *E. coli* per 100 ml of
 1105 treated water, yet neither the lab nor the town notified
 1106 the provincial health or environmental ministries; they
 1107 were not required to. Two days later, A&L faxed the
 1108 Walkerton PUC to tell them that the entire water system
 1109 of the town was contaminated. Again, however, no
 1110 notice was sent to health or environment officials; nor
 1111 was one required. While there was evidence of system-
 1112 atic and serious contamination leading up to the crisis, it
 1113 never reached the provincial environment or health
 1114 ministries. And while it is true that during the crisis,
 1115 information was intentionally obscured by PUC man-
 1116 agement negligence, and while Public Utilities Com-
 1117 mission manager Stan Koebel did lie about the results of
 1118 water tests, *at no time was there a regulatory requirement*
 1119 *in place requiring anyone to notify the province*. More-
 1120 over, there was no system in place for evaluating and
 1121 weeding out people like the Koebel brothers who were
 1122 categorically unqualified for staffing a municipal water
 1123 utility.

1124 As for the farm waste that caused the contamina-
 1125 tion, the absence of more stringent standards, and a
 1126 groundwater protection plan for areas of risk prone
 1127 hydrology, including the karst in Walkerton’s envi-
 1128 rons, seems implicated. It bears repeating that the
 1129 actual source of contamination was a farm near the

town’s suspect Well 5, and that the particular farm in
 question is not typical of the province’s increasingly
 industrial livestock operations. Moreover, as Justice
 O’Connor noted in the first inquiry report, the owner
 of the farm appears to have followed provincial
 guidelines on agricultural waste disposal (O’Connor,
 2002b). Yet, if a relatively small farm producing
 moderate amounts of waste could nevertheless so se-
 verely contaminate a town’s drinking water, this
 should only underline the potential risks associated
 with larger operations and volumes of waste. More-
 over, if Dr. Biesenthal indeed followed provincial
 guidelines, this does not resolve whether such guide-
 lines were adequate, and indeed, whether non-binding
 recommendations or best practice “suggestions” are an
 appropriate approach to environmental regulation at
 all.

5. Conclusion

Inevitably, I have omitted essential elements of the
 Walkerton story, and of environmental neoliberalism in
 Ontario, from this narrative. This includes important
 political and regulatory responses to Walkerton’s trag-
 edy, including the Walkerton inquiry itself. O’Connor
 (2002b,a) findings directly implicated the Common
 Sense Revolution’s project of rollback environmental
 neoliberalism for creating the conditions for the incident
 to occur—in short, for making it a normal accident. The
 inquiry recommended specific changes in provincial
 regulations, including recommendations that helped
 lead to the Nutrient Management Act, passed in June of
 2002. This legislation committed the province to estab-
 lishing binding standards for manure spreading and
 disposal, including setbacks from surface water for
 manure spreading and caps on the total amounts of
 manure that can be spread per unit area of land. The
 adoption of inquiry recommendations, and indeed the
 very creation of the inquiry as a response to public
 outrage over the tragedy indicate that although the
 Common Sense Revolution reflected and reinforced the
 hegemony of neoliberal ideology in contemporary gov-
 ernance, this hegemony is neither natural nor automatic,
 but is instead politically constructed and contingent
 (Peck, 2001). Similarly, the capacity and courage shown
 by many residents of the Walkerton area—some of
 whom attempted to redress regulatory lapses prior to
 the tragedy—has been inspiring and impressive, partic-
 ularly as led by the Concerned Walkerton Citizens
 coalition. Such efforts further indicate the fragility of
 neoliberal hegemony if and when particular neoliberal-
 izations are challenged based on their evident political
 ecological contradictions. Here too, Polanyi’s dual
 movement thesis, suggesting opposing political tenden-

²⁵ Based on the inquiry report (O’Connor, 2002b) and “The Walkerton Story”, Toronto Star, Saturday October 14th, 2000.

1182 cies toward and in opposition to market self-regulation,
 1183 remains highly relevant as a perspective on neoliberal
 1184 projects and their politics (Polanyi, 1944). Although I
 1185 have not focussed on these resistance politics, I do not
 1186 thereby mean to suggest their absence, whether mobi-
 1187 lized against the Common Sense Revolution in general
 1188 (see Keil, 2002), or specifically challenging environ-
 1189 mental neoliberalism.²⁶

1190 What I have tried to emphasize and demonstrate here
 1191 is that that the Walkerton case points to some important
 1192 themes with implications that go beyond the town and
 1193 the circumstances of its tragedy, and indeed beyond
 1194 Ontario and its Common Sense Revolution. One of
 1195 these themes is the extent to which neoliberalism is an
 1196 inherently environmental project, again reinforcing a
 1197 key message of this special issue of *Geoforum*. As the
 1198 scope of environmental re-regulation in Ontario under
 1199 the Common Sense Revolution makes plain, reform of
 1200 environmental governance was not incidental, but rather
 1201 absolutely central to Ontario's neoliberal turn. Con-
 1202 versely, neoliberalism in Ontario led to significant
 1203 restructuring of the province's environmental regulatory
 1204 apparatus. The degree to which this was true in Ontario
 1205 may well not be indicative of all neoliberalizations,
 1206 reflecting the particularities of Ontario's political econ-
 1207 omy. This too is a theme of the essays collected here,
 1208 and indeed one that runs through the literature on
 1209 neoliberalism: namely, each specific neoliberalization is
 1210 just that, specific, contingent, and geographically con-
 1211 stituted. As Gibson-Graham might frame it, the "word"
 1212 neoliberalism should not be used, even unwittingly, to
 1213 essentialize and further reify the thing(s) (Gibson-Gra-
 1214 ham, 1996). As we argue in the introduction to this
 1215 volume, there is a need to appreciate *both* diversity *and*
 1216 consistency across particular neoliberalizations.

1217 This in mind, the implications of the Common Sense
 1218 Revolution for environmental governance in Ontario,
 1219 and the role that environmental neoliberalism played in
 1220 the Walkerton tragedy, reinforce that critical scholar-
 1221 ship must be attendant to the strong connections linking
 1222 neoliberalism and nature. In Walkerton's tragedy, the
 1223 production of environmental risk was tied to a new,
 1224 neoliberal mode of social regulation that critically
 1225 undermined environmental governance. It did so by
 1226 placing a chill on the establishment and enforcement of
 1227 regulations; by creating systematic irresponsibility via
 1228 the discursive and institutional rubric of Common Sense

neoliberalism; and more directly (but not necessarily
 more significantly), by propagating risk in the form of
 key gaps in regulation of agricultural waste disposal
 practices, groundwater management, and safeguards of
 municipal drinking water. All of these made the Walk-
 erton tragedy a normal accident of environmental neo-
 liberalism.

What the Walkerton case also indicates, however, is
 that making broad links to the prevailing mode of social
 regulation in the production of ecological risk and
 contradiction need not obviate the significance of par-
 ticular local political ecology. In Walkerton, a specific
 and risk prone hydrological regime in proximity to
 livestock production, and the scandalous misconduct of
 PUC staff turned a normal accident into a specific one.
 Analyses of the political ecology of neoliberalism must
 therefore retain some attention to "nature's materiality"
 (Castree, 1995), what Harvey (1996, p. 183) terms "an
 unparalleled terrain of difference", as well as the local
 politics and institutions through which social relations
 to nature are mediated. Though the specifics of Walk-
 erton's political ecological setting matter, the fact that
 they matter is not exceptional. Rather, as Polanyi. rec-
 ognized, biophysical nature is necessarily fictitious as a
 commodity, never wholly responsive to price signals and
 always central to everyday life in ways that conflict with
 (neo)liberal markets. Ecological contradictions thus
 comprise an essential facet of the actual geographies of
 neoliberalisms, an additional source of the fractures,
 fissures, and disjunctures that are as endemic to partic-
 ular neoliberalisms as is blind market worship itself
 (Brenner and Theodore, 2002). If any good can come
 from an accident like Walkerton's May, 2000 tragedy, it
 is to undermine the all-encompassing, end-of-history
 narratives of neoliberal ideology and discourse, and to
 serve as a reminder that social regulation of nature un-
 der late capitalism is meant to protect us from the self-
 regulating market, and not the other way around.

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²⁶ The Ontario Coalition Against Poverty (OCAP) was and remains a staunchly effective source of resistance against neoliberalism in Ontario, as have been some of the public sector unions, including the Canadian Public Employees Union (CUPE), and the Ontario Teachers' Federation. CUPE was also very active in pointing out environmental regulatory gaps opened up by the Harris government, as were NGOs such as the Canadian Environmental Law Association and the Canadian Institute for Environmental Law and Policy.

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