REDACTED

IN THE ARBITRATION
UNDER THE ARBITRATION RULES
OF THE
UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW
AND
THE NORTH AMERICAN FREE TRADE AGREEMENT

BETWEEN:

Chemtura Corporation
(formerly Crompton Corporation)

Claimant/Investor

- v. -

The Government of Canada

Respondent/Party

REDACTED

POST-HEARING BRIEF

OF THE INVESTOR

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I. INTRODUCTION[1]

1. As suggested during the cross-examination of one of Canada's witnesses, an observer of these proceedings could be forgiven for concluding that lindane is banned in Canada. Indeed, Canada's witnesses were eager to give this impression.[2] Lindane is not, however, banned in Canada; it continues to enjoy support as a pharmaceutical use, and continues to be manufactured for this purpose. At the heart of this case is why lindane for seed treatment uses, and canola in particular, was banned in Canada. The evidence shows that lindane for canola and other seed treatment uses was unfairly terminated by the Pest Management Regulatory Agency ("PMRA") for political reasons, not as the result of a proper scientific review or other action within the scope of its authority. In so doing, PMRA has engaged Canada's international responsibility under the North American Free Trade Agreement ("NAFTA").

II. OVERVIEW: THE BANNING OF LINDANE FOR CANOLA USE FROM 1997 TO PRESENT DAY

2. The earliest substantive documentation in the record indicates that Canada resisted annexing lindane for additional restriction or elimination under the Aarhus Protocol to the Convention on Long-Range Transboundary Air Pollution ("LRTAP"). Canada could not commit to limiting or banning uses that were domestically permitted.[3]

3. With the Arctic Contaminants' Report and Stockholm Convention on Persistent Organic Pollutants, Canada came under increasing domestic and international pressure to ban the use of lindane. When the U.S. Environmental Protection Agency ("EPA") announced that it would enforce a long-standing rule prohibiting the import of seeds treated with a pesticide not regulated for use on that crop in the U.S., PMRA seized this opportunity to fast-track the removal of lindane for seed treatment uses in Canada. Of the more than

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[1] Abbreviations used in the Investor's Memorial and Reply are used analogously in this Post-Hearing Brief. Consistent with the Tribunal's invitation, the Investor has focused its legal argument for the purpose of the Post-Hearing Brief on Article 1105(1) of NAFTA. This is in no way, however, a waiver of its other legal arguments as exposed in its Memorial and Reply.

[2] Transcript: 476:24 - 477:1 ("A. Well, certainly by virtue of the fact that lindane has been suspended or it has been withdrawn, I think it's fair to say that lindane is no longer in use in Canada.")

[3] See, e.g. Joint Hearing Bundle, Tabs 13, 14 and 18.

thirty pesticides used to treat canola seeds in Canada that are not registered in the U.S., only lindane was targeted.

4. Throughout 1998, PMRA exploited the concerns of the Canadian canola industry by secretly committing to phase out all existing uses of lindane, of which canola seed treatment was by far the most important. A substitute was, however, required; this materialized when Novartis submitted Helix for joint review and registration and PMRA adopted it for this accelerated approval.

5. Although the most important use of lindane would be eliminated through a negotiated withdrawal, other uses had to be deregistered to enable Canada to yield to pressure from other countries and constituencies. PMRA therefore began a Special Review, in terms that were vague and broad in scope.

6. "Negotiation" of withdrawal terms between Chemtura Corporation ("Chemtura" or "Investor") and PMRA continued through 1999 until October 28 when a Conditional Withdrawal Agreement ("CWA") with Chemtura was reached The undertakings by PMRA, which were fully within its mandate, promised treatment by Canada and created legitimate expectations on which Chemtura relied to its detriment. While negotiating Chemtura's withdrawal terms, PMRA began preparing for a Special Review of Lindane.

7. PMRA conducted the Special Review with a positive agenda to find lindane use unacceptable. The issue of occupational exposure was settled upon because no other conclusive data were available. Given the unjustifiably high uncertainty factor chosen by PMRA, occupational exposure "risk" was a convenient basis to terminate lindane use.

8. During the course of the Special Review, PMRA enforced the "voluntary" withdrawal of lindane and threatened growers with penalties for planting treated seed beyond July 2001.

9. Helix was registered in 2000, supplying the market with an alternative, which dramatically benefited from the removal of the far less costly lindane, but only once lindane use was prohibited.

10. PMRA was in communication with EPA about its lindane review. Before the conclusion of its Special Review of lindane, PMRA noted internally that EPA used a much lower uncertainty factor in its risk assessments and sought to "reconcile" the difference.

11. PMRA colluded with EPA on carcinogenicity and hormonal effects, to try to minimize contradictions between the two agencies' eventual conclusions.

12. In the event the Special Review of lindane were to permit lindane's continued use, the Canadian Canola Council ("CCC"), contrary to its testimony in these proceedings, had already expressed its willingness to use lindane upon its re-registration, which belies the assertions of an "industry-led" withdrawal.

13. The Special Review and its occupational exposure assessment were used as the basis to terminate all of Chemtura's remaining registrations.

14. Chemtura requested a Lindane Board of Review, (the "Board") and PMRA delayed the process by forcing Chemtura to vindicate its right to such a Board through a Federal Court application. The delay itself was prejudicial, as the longer lindane was off the market, the less likely and slower its re-establishment, and the better established were the alternative products.

15. In 2002, after Chemtura's lindane registrations had been terminated in Canada, EPA issued an Eligible for Reregistration (RED 2002) decision, with no unmanageable occupational exposure concerns. Separately, under the auspices of the NAFTA Committee on Environmental Cooperation North American Regional Action Plan, Mexico led the efforts to ban lindane continentally, as proposed by PMRA.[4]

16. Three years later, the Board of Review found serious procedural and substantive deficiencies in PMRA's Special Review that could have altered the outcome, and thus recommended a re-evaluation. There would have been no point in the Board recommending a re-evaluation if the errors of the Special Review, once corrected, would not have changed the outcome. This alone contradict's Canada's expert witnesses'

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[4] Joint Hearing Bundle, Tab 41; Transcript: 1059:13 – 1060:2.

assertion that the Board's decision merely reflects reasonable differences among scientists."[5]

17. By July 2006, Chemtura, now involved in the re-evaluation of lindane in Canada, abandoned the attempt to re-register lindane in the U.S. and voluntarily withdrew its existing registrations. Subsequently, EPA issued an Addendum to the 2002 RED, indicating various concerns with lindane, and given the absence of registration in the U.S., no countervailing benefits.

18. PMRA conducted a Re-Evaluation process expressly to bolster its defences to this NAFTA claim, using the same uncertainty factor that had been criticized by the Board with no additional justifications. In light of this, the Re-Evaluation suffers from the same substantive flaws as the Special Review.

III. NAFTA ARTICLE 1105(1)

A. Overview of the Investor's Position[6]

19. It is the Investor's position that Canada has breached NAFTA Article 1105(1) in the circumstances by failing to treat its investment (Crompton Canada, now Chemtura Canada) fairly and equitably as required thereunder. For convenience, the terms of NAFTA Article 1105(1), which impose a minimum standard of treatment that NAFTA governments must meet, are recalled again here:

> **"Article 1105: Minimum Standard of Treatment**
>
> Each party shall accord to investments of investors of another Party treatment in accordance with international law, including fair and equitable treatment and full protection and security.
>
> [...]"

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[5] Transcript 1117: 5-9.

[6] The Investor's Post-Hearing Brief focuses on the Investor's NAFTA Article 1105(1) claim, in accordance with the Tribunal's directions at the Hearing requesting that the parties "concentrate on the minimum standard of treatment under Article 1105 because we feel that the issue of the MFN and FET under 1103 as well as the issue of expropriation [under 1110] have been well covered in the previous briefs, and we don't feel we need more on these aspects." [Transcript: 1398: 17-21]

20. As set forth in the 2001 FTC Note of Interpretation, for purposes of determining whether NAFTA Article 1105(1) has been breached in the circumstances, this Tribunal is called upon to apply the customary international law minimum standard of treatment. Again, for the sake of convenience, the relevant passage form the FTC Note of Interpretation is reproduced here:

> **2. Minimum Standard of Treatment in Accordance with International Law**
>
> 1. Article 1105(1) prescribes the customary international law minimum standard of treatment of aliens as the minimum standard of treatment to be afforded to investments of investors of another Party.
>
> 2. The concepts of "fair and equitable treatment" and "full protection and security" do not require treatment in addition to or beyond that which is required by the customary international law minimum standard of treatment of aliens.
>
> 3. A determination that there has been a breach of another provision of the NAFTA, or of a separate international agreement, does not establish that there has been a breach of Article 1105(1).

21. The content of NAFTA Article 1105(1) cannot be ascertained in the abstract, *i.e.* without consideration of the particular circumstances surrounding the investment or the investor's particular claim. The crux of any NAFTA Article 1105(1) analysis requires a determination of whether, in the context of a particular investment, the host State's conduct may objectively be viewed as having deprived the investor of the customary international law minimum standard of treatment. Such conduct may be demonstrated, *inter alia*, by (a) a lack of sufficient evidence to support the decision at issue and/or basing the decision on irrelevant considerations, resulting in a decision that is clearly improper and discreditable; (b) lack of due process, including denial of the right to be heard, leading to an outcome which offends a sense of judicial propriety; (c) arbitrary, grossly unfair, unjust or idiosyncratic conduct; (d) breach of an investor's legitimate expectations; (e) lack of transparency and candour in an administrative process; (f) acting beyond the scope of lawful authority; (g) failure to act in good faith; and (h) failure to

ensure a stable and predicable environment for investment. Such actions, individually and collectively, may constitute a breach of NAFTA Article 1105(1).[7]

22. By any standard, the evidence establishes that Canada's conduct in this instance violates the requirements of NAFTA Article 1105(1). As set forth in more detail below, this conclusion is supported by the preponderance of NAFTA authority which confirms that the interpretation of the minimum standard of treatment owed to investors by Host States has been demonstrably heightened since its first iteration in *Neer*.

23. Furthermore, it is the Investor's position that regardless of the circumstances in which NAFTA Article 1105(1) is at issue, the minimum standard of treatment that NAFTA governments must meet is not lessened by a "margin of appreciation". This question, at the Tribunal's invitation, is also addressed in more detail below.

B. NAFTA Tribunals Have Established that the Minimum Standard of Treatment Has Evolved Since Neer

24. There can be no question that NAFTA Article 1105(1) recognizes the long-standing international law obligation of each NAFTA party to treat foreign investors fairly and equitably. Faced with the incontrovertible evidence of its breach of this obligation in the circumstances, Canada's defense now boils down to one simple proposition, *i.e.* that the Investor in this arbitration has sought to apply the "wrong standard" in putting forward its minimum standard of treatment claim under NAFTA Article 1105(1).[8]

25. Yet Canada accepts, as it must, that the "classic customary standard" as articulated nearly a century ago in *Neer* is not "frozen in time".[9] But Canada nonetheless relies on a *Neer*-inspired interpretation of the minimum standard of treatment claim under NAFTA Article 1105(1) which has been expressly rejected by NAFTA tribunals, in particular the tribunal in the case of *Pope & Talbot*. As the Investor has previously noted,[10] in that case,

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[7] The Investor's position in this regard is more amply set forth in its Memorial (at paras. 325 and following) and in its Reply (at paras. 323 and following).

[8] *E.g.* Canada's Opening Statement at page 7.

[9] *E.g.* Canada's Counter-Memorial at para. 687 and Canada's Rejoinder at para. 134.

[10] Investor's Memorial at para. 337. See generally Investor's Memorial at paras. 335 and following.

Canada had rigidly relied upon *Neer* to argue that only treatment amounting to an outrage, bad faith, wilful neglect of duty or "an insufficiency of government action so far short of international standards that every reasonable and impartial man would readily recognize its insufficiency".[11] It bears repeating that in connection with Canada's *Neer*-inspired interpretation of the minimum standard of treatment claim under NAFTA Article 1105(1), the *Pope & Talbot* tribunal stated:

> "58 [...] The Tribunal rejects this static conception of customary international law for the following reasons.
>
> 59. First, as admitted by one of the NAFTA Parties, and even by counsel for Canada, there has been evolution in customary international law concepts since the 1920's. It is a fact of international law that customary international law evolves through state practice. International agreements constitute practice of states and contribute to the grounds of customary international law.
>
> 60. Secondly, since the 1920's, the range of actions subject to international concern has broadened beyond the international delinquencies considered in *Neer* to include the concept of fair and equitable treatment. This development was focused in the work of the OECD on its Draft Convention on the Protection of Foreign Property, which recognized that such concept was already customary in bilateral agreements then in effect. That draft did not rest upon an effort to discern the ingredients of international law but upon an independent consideration of how host countries should treat foreign owned property. However, the comments to the draft made two observations that are pertinent here: fair and equitable treatment requires treatment at least as good as that accorded by a state to its own nationals and that concept was embodied in 'customary' international law.
>
> 61. Thirdly, the standard of fair and equitable treatment was central to BITs negotiated since the work of the OECD. Many of those agreements, as the Tribunal has previously observed, require state conduct to be evaluated under the fairness elements apart from the standards of customary international law. And even those that do not provide that those elements are owed independently of the requirements of customary international law do add the fair and equitable treatment protections to those rights formerly protected by customary international law. That is, the BITs are not limited to protection against "international delinquencies.
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> 62. Canada's views on the appropriate standard of customary international law for today were perhaps shaped by its erroneous belief

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[11] *Pope & Talbot v. Canada,* UNCITRAL (NAFTA), Government of Canada Counter-Memorial (Phase Two) at para. 260, October 10, 2000, citing *Neer* at para. 4.

> that only some 70 bilateral investment treaties have been negotiated; however, the true number, now acknowledged by Canada, is in excess of 1800. Therefore, applying the ordinary rules for determining the content of customary international law, one must conclude that the practice of states is now represented by those treaties.
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> 63. The International Court of Justice has moved away from the *Neer* formulation:
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> > Arbitrariness is not so much something opposed to a rule of law, as something opposed to the rule of law. ... It is a wilful disregard of due process of law, an act which shocks, or at least surprises a sense of judicial propriety.
>
> 64. That formulation leaves out any requirement that *every* reasonable and impartial person be dissatisfied and perhaps permits a bit less injury to the psyche of the observer, who need no longer be outraged, but only surprised by what the government has done. And, of course, replacing the neutral "governmental action" with the concept of "due process" perforce makes the formulation more dynamic and responsive to evolving and more rigorous standards for evaluating what governments do to people and companies."[12]
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> [Citations omitted. Emphasis added]

26. Similarly, the tribunal in *Mondev* confirmed that the minimum standard of treatment is not static in time, thereby also rejecting a *Neer*-inspired articulation of NAFTA Article 1105(1):

> "115. The Tribunal would observe, however, that the *Neer* case, and other similar cases which were cited, concerned not the treatment of foreign investment as such but the physical security of the alien. Moreover the specific issue in *Neer* was that of Mexico's responsibility for failure to carry out an effective police investigation into the killing of a United States citizen by a number of armed men who were not even alleged to be acting under the control or at the instigation of Mexico. In general, the State is not responsible for the acts of private parties, and only in special circumstances will it become internationally responsible for a failure in the conduct of the subsequent investigation. Thus there is insufficient cause for assuming that provisions of bilateral investment treaties, and of NAFTA, while incorporating the *Neer* principle in respect of the duty of protection against acts of private parties affecting the physical security of aliens present on the territory of the State, are confined to the *Neer* standard of outrageous treatment where the issue is the treatment of foreign investment by the State itself.

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[12] *Pope & Talbot v. Canada,* UNCITRAL (NAFTA), Award in Respect of Damages, May 31, 2002 at paras. 58, 59, 60, 61, 62, 63 and 64, and citing the International Court of Justice's decision in *Elettronica Sicula SpA (ELSI), (United States v. Italy)* (1989) ICJ 15 at p. 76.

> 116. Secondly, *Neer* and like arbitral awards were decided in the 1920s, when the status of the individual in international law, and the international protection of foreign investments, were far less developed than they have since come to be. In particular, both the substantive and procedural rights of the individual in international law have undergone considerable development. In the light of these developments it is unconvincing to confine the meaning of "fair and equitable treatment" and "full protection and security" of foreign investments to what those terms – had they been current at the time – might have meant in the 1920s when applied to the physical security of an alien. To the modern eye, what is unfair or inequitable need not equate with the outrageous or the egregious. In particular, a State may treat foreign investment unfairly and inequitably without necessarily acting in bad faith.
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> 117. Thirdly, the vast number of bilateral and regional investment treaties (more than 2000) almost uniformly provide for fair and equitable treatment of foreign investments, and largely provide for full security and protection of investments. Investment treaties run between North and South, and East and West, and between States in these spheres *inter se*. On a remarkably widespread basis, States have repeatedly obliged themselves to accord foreign investment such treatment. In the Tribunal's view, such a body of concordant practice will necessarily have influenced the content of rules governing the treatment of foreign investment in current international law. It would be surprising if this practice and the vast number of provisions it reflects were to be interpreted as meaning no more than the *Neer* Tribunal (in a very different context) meant in 1927."[13]
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> [Citations omitted]

27. In no unclear terms, the tribunal in *Mondev* concluded:

> "125 [...] [T]here can be no doubt that, by interpreting Article 1105(1) to prescribe the customary international law minimum standard of treatment of aliens as the minimum standard of treatment to be afforded to investments of claimants of another Party under NAFTA, the term "customary international law" refers to customary international law as it stood no earlier than the time at which NAFTA came into force. It is not limited to the international law of the 19th century or even of the first half of the 20th century, although decisions from that period remain relevant. In holding that Article 1105(1) refers to customary international law, the FTC interpretations incorporate current international law, whose content is shaped by the conclusion of more than two thousand bilateral investment treaties and many treaties of friendship and commerce. Those treaties largely and concordantly provide for "fair and equitable"

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[13] *Mondev International Ltd. v. United States of America*, ICSID Case No. ARB(AF)/99/2, Final Award, October 11, 2002, at paras. 115, 116 and 117.

> treatment of, and for "full protection and security" for, the foreign Claimant and his investments."[14]
>
> [Emphasis added]

28. As the Investor has previously submitted, the interpretation of NAFTA Article 1105(1) must thus be guided by the following principles:

- the minimum standard prescribed by customary international law is not frozen in time by the *Neer* Award, but rather is an evolving standard, and in any event, the statements in the *Neer* Award were not made in the context of an investor-state investment dispute;
- the content of the customary international law minimum standard is shaped by the more than 2000 BITs which, for the most part, provide for "fair and equitable treatment";
- a State may treat foreign investment unfairly and inequitably without necessarily acting in "bad faith", and
- the governmental action in issue need not necessarily "shock" an observer; it may be sufficient if an observer is surprised by the impropriety of the governmental action.

29. In response, Canada has contended that the Investor is somehow seeking to lower to threshold applicable to NAFTA Article 1105(1) claims. The Investor has contended no such thing. Rather, in line with the preponderance of NAFTA authority in this regard, the Investor has demonstrated that NAFTA Article 1105(1) will be violated, and has been so found, by a variety of forms of State conduct. Nor does the Investor contend that the level of scrutiny in this regard should somehow be relaxed, as insinuated by Canada in heavy reliance upon certain passages from the recently-issued *Glamis* award.[15] The question of whether the threshold for finding a violation of NAFTA Article 1105(1) has been either "lowered" or "heightened" is purposefully skewed by Canada to divert the attention regarding its actions in this case. The reality is that the approach to be adopted in addressing a claim under NAFTA Article 1105(1) is necessarily circumstantial and that, significantly, as emphasized by the tribunal in *Glamis*, "as an international

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[14] *Ibid.*, at para. 125.

[15] See *e.g.* Canada's Rejoinder at para. 131.

community, we may be shocked by State actions now that did not offend us previously".[16]

C. The Evidence Establishes a Breach of the Fair and Equitable Treatment Obligation under NAFTA Article 1105(1) in the Circumstances

30. Both the Investor and Canada[17] have acknowledged that one may look to the *Mondev* tribunal for the threshold question applicable to a determination of whether the fair and equitable treatment obligation under NAFTA Article 1105(1) has been breached:

> "[T]he question is whether, at an international level and having regard to generally accepted standards of the administration of justice, a tribunal can conclude in the light of all the facts that the impugned decision was clearly improper and discreditable, with the result that the investment has been subjected to 'unfair and inequitable treatment'."[18]

31. Likewise, both the Investor and Canada have noted the following articulation of the minimum standard of treatment put forward by the tribunal in *Waste Management*, inspired *inter alia* by the *Mondev* tribunal:

> "[...] Taken together, the S.D. Myers, Mondev, ADF and Loewen cases suggest that the minimum standard of treatment of fair and equitable treatment is infringed by conduct attributable to the State and harmful to the claimant if the conduct is arbitrary, grossly unfair, unjust or idiosyncratic, is discriminatory and exposes the claimant to sectional or racial prejudice, or involves a lack of due process leading to an outcome which offends judicial propriety – as might be the case with a manifest failure of natural justice in judicial proceedings or a complete lack of transparency and candour in an administrative process. In applying this standard it is relevant that the treatment is in breach of representations made by the host State which were reasonably relied on by the claimant.
>
> Evidently the standard is to some extent a flexible one which must be adapted to the circumstances of each case."[19]

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[16] *Glamis Gold Ltd. v. United States of America*, UNCITRAL (NAFTA), Award, 8 June 2009, at para. 616.

[17] See in particular Canada's Counter-Memorial at para. 678.

[18] *Mondev International Ltd. v. United States of America*, ICSID Case No. ARB(AF)/99/2, Final Award, October 11, 2002, at para. 127.

[19] *Waste Management, Inc. v. United Mexican States*, ICSID Case No. ARB(AF)/00/3, Final Award, 30 April 2004, at paras. 98 and 99.

32. And again more recently, the tribunal in *Glamis* unequivocally confirmed that "there is an obligation of each of the NAFTA State Parties inherent in the fair and equitable treatment standard of Article 1105 that they do not treat investors of another State in a *manifestly* arbitrary manner" [emphasis in original].[20]

33. The Investor accordingly submits that State conduct which may, in a given context and on a given set of facts, constitute individually and collectively a breach of the minimum standard of treatment under NAFTA Article 1105(1), includes:

- lack of sufficient evidence to support the decision at issue and/or basing the decision on irrelevant considerations, resulting in a decision that is clearly improper and discreditable;
- lack of due process, including denial of the right to be heard, leading to an outcome which offends a sense of judicial propriety;
- arbitrary, grossly unfair, unjust or idiosyncratic conduct;
- breach of an investor's legitimate expectations;
- lack of transparency and candour in an administrative process;
- acting beyond the scope of lawful authority;
- failure to act in good faith; and
- failure to ensure a stable and predicable environment for investment.

34. In the present circumstances, and as fully articulated below, the evidence establishes that Canada, through its PMRA, failed to meet the minimum standard of treatment in Article 1105(1) of NAFTA as regards the Investor's investment[21] by:

(a) demanding a "voluntary" withdrawal of lindane products based on irrelevant considerations (*i.e.* trade issues and/or international pressures rather than scientific concerns) – the PMRA's actions leading to the voluntary withdrawal were clearly improper and discreditable.

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[20] *Glamis Gold Ltd. v. United States of America*, UNCITRAL (NAFTA), Award, 8 June 2009, at para. 626.

[21] As set forth in Investor's Memorial (at paras. 365 and following) and Investor's Reply (at paras. 354 and following).

(b) suspending Chemtura Canada's lindane registrations without evidence or a necessary legitimate scientific basis;

(c) failing to abide by promised conditions of Chemtura Canada's withdrawal of lindane products from the Canadian market and, more generally, by the Canadian regulatory regime for seed treatment products, which gave rise to legitimate expectations on which Chemtura Canada had reasonably relied. In particular, the PMRA

(i) threatened and misinformed growers with regard to the July 1, 2001 deadline for withdrawal;

(ii) failed to issue a timely lindane assessment;

(iii) arbitrarily terminated Chemtura Canada's registrations for all uses; and

(iv) failed to expedite registration of Chemtura Canada's lindane replacement products, in particular Gaucho CS FL.

(d) denying Chemtura Canada a right to be heard prior to the suspension of its lindane product registrations;

(e) failing to maintain a transparent regulatory process and acting beyond the scope of lawful authority;

(f) acting in an arbitrary, grossly unfair and unjust manner in dealings with Chemtura Canada; and

(g) failing to act in good faith in respect of the treatment accorded to Chemtura Canada.

D. The Minimum Standard of Treatment that NAFTA Governments Must Meet pursuant to NAFTA Article 1105(1) Is Not Lessened by a "Margin of Appreciation"

35. As noted earlier, regardless of the circumstances in which NAFTA Article 1105(1) is at issue, the minimum standard of treatment that NAFTA governments must meet is not lessened by a "margin of appreciation".

36. This issue, it is recalled, was raised at the close of the Hearing by reference to "the authority of a NAFTA Tribunal under Chapter 11 in relation to a specialist authority of a State which has a particular statutory mandate in a particular field of expertise".[22] Specifically, the parties were invited to provide submissions on "the relationship between

[22] Transcript: 1405:85 – 1406:3.

Article 1105 and that special mandate; and, in particular, on the question whether accepting that there is what is sometimes rather grossly referred to as a 'margin of appreciation' at the domestic level, there is any distinction between 'margin of appreciation' and the 'margin of regulatory appreciation,' we might call it, in the context of the substance of decisions relating to the safety of pesticides as distinct from the procedure by which those decisions are made".[23]

37. This issue, the Investor notes, relates to a notional deference towards a State's authority to regulate its domestic matters. In this regard, the Investor would further observe that for purposes of judging PMRA's conduct as violative of NAFTA Article 1105(1) in the circumstances, this Tribunal is not required to base its findings on PMRA's specific motivations. Indeed, as the tribunal in *Pope & Talbot* explained, it is unnecessary for a NAFTA tribunal to "discern the motivations" behind the conduct of an administrative agency. It is enough, for a breach of NAFTA Article 1105(1), that the end result of such conduct be loss or damage to an investor:

> "180. Implementation of the Regime was a complicated matter, involving complex quota allocations to over 500 softwood lumber producers in the covered provinces, acquiring information from numerous sources and providing direction and guidance to governmental and private entities. Even in the face of these difficulties, the program apparently was administered, in most nuances, in an open and cooperative spirit.
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> 181. Against that background, within the context of the verification review process, the treatment of the Investment stands in stark contrast. The relations between the SLD and the Investment during 1999 were more like combat than cooperative regulation, and the Tribunal finds that the SLD bears the overwhelming responsibility for this state of affairs. It is not for the Tribunal to discern the motivations behind the attitude of the SLD; however, the end result for the Investment was being subjected to threats, denied its reasonable requests for pertinent information, required to incur unnecessary expenses and disruption in meeting SLD's requests for information, forced to expend legal fees and probably suffer a loss of reputation in government circles. While administration, like legislation, can be likened to sausage making, this episode goes well beyond the glitches and innocent mistakes that may typify the process. In its totality, the SLD's treatment of the Investment during 1999 in relation the verification review process in nothing less than a denial of

[23] Transcript: 1405:24 - 1406: 12.

> the fair treatment required by NAFTA Article 1105, and the Tribunal finds Canada liable to the Investor for the resultant damages."[24]
>
> [Emphasis added]

38. Likewise, the tribunal in *Glamis* expressly rejected the argument made by the United States in that case to the effect that "international tribunals as well as domestic judiciaries favour deference to the agency so as not to second guess the primary decision-makers or become 'science courts'".[25] It found that "the standard of deference to already be present in the standard as stated, rather than being additive to that standard".[26] The tribunal in *Glamis* added: "The idea of deference is found in the modifiers 'manifest' and 'gross' that make this standard a stringent one; it is found in the idea that a breach requires something greater than mere arbitrariness, something that is surprising, shocking, or exhibits a manifest lack of reasoning."[27]

39. It follows that there is no distinction to be made in terms of a "margin of appreciation" or "margin of regulatory appreciation" such as to allow a State to circumvent its liability under NAFTA Article 1105(1). Even more so where, as in the present circumstances, the evidence demonstrates that the State is merely serving after-the-fact justifications for the measures in dispute. Indeed, the true impetus for the impugned measures taken by PMRA was a desire to yield to external domestic and international pressure by interest groups and states who had targeted lindane (and who had nothing to lose by its removal) and protect the U.S. market share of Canadian canola growers from possible adverse trade action against growers' exports to the United States, not the occupational health and/or safety concerns Canada now seeks to rely upon to legitimize its conduct. Canada's attempt to bring this Tribunal to conclude otherwise should thus be rejected.

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[24] *Pope & Talbot v. Canada,*, UNCITRAL (NAFTA), Award, 10 April 2001, paras. 180-181.

[25] *Glamis Gold Ltd. v. United States of America*, UNCITRAL (NAFTA), Award, 8 June 2009, at para. 617.

[26] *Ibid.*

[27] *Ibid.*

IV. CANADA FAILED TO MEET THE STANDARD OF TREATMENT REQUIRED BY NAFTA ARTICLE 1105(1)

40. Canada seeks to frame this arbitration and the issues in dispute in the context of Canadian health and environmental concerns, even though these concerns were in no way the motivating factor behind PMRA's conduct in related to lindane. PMRA is a statutory authority and was bound to act within the scope of its statutory mandate, for proper purposes, and in accordance with due process. When a government agency ceases to act in accordance with its statutory framework, it fails to act fairly, in good faith or in accordance with the legitimate expectations and entitlements of investors subject to its authority.

41. PMRA's conduct throughout this matter demonstrates that it did not behave in accordance with its statutory or regulatory framework or in a disinterested exercise of its regulatory authority. Canada and its PMRA involved and applied its statutory and regulatory framework uniquely to the detriment of the registrant investor, without the scientific or regulatory basis that could be the sole justification for its consistently prejudicial conduct. The "Voluntary Withdrawal Agreement" must be considered in this context. In response to questioning by the President of the Tribunal, Mr. Ingulli for the Investor confirmed the absence of an agreement with Canada to withdraw lindane for canola seed treatment prior to October 28, 1999:

> "PRESIDENT KAUFMANN-KOHLER…"If I read in particular Mrs. Sexsmith's Affidavit, she gives her version of the facts--of many of the same facts that you have testified on, either orally or in writing. And in particular on the question of the Voluntary Withdrawal Agreement and whether the relevant terms were agreed upon in November '98 or rather in October '99, and she in particular writes that in December '98, so that's the months following this meeting on 24th of November '98 that was then confirmed by a letter of 26 of November that we have seen several times today, so in December '98 she says, "Chemtura began what turned into a year-long campaign to unilaterally change or add to the terms agreed on November 24."
>
> What can you say to us about--this is one of the important issues we have to resolve here; right?
>
> THE WITNESS: Uniroyal, or Crompton, the Claimant, contends that no agreement was reached at the November 24th meeting. I personally questioned Rob Dupree, who was one of the attendees from our company at that meeting, whether or not he or the other attendee agreed to

anything at that meeting. His response was, "No, we did not agree to the terms and conditions of the Voluntary Withdrawal Agreement as proposed by the CCGA."

Furthermore, no one at that meeting from my company, from Crompton, was authorized to agree to withdraw the company's most profitable product in Canada. There were only two people in the entire corporation with the authorization to make that decision: That was me and the CEO of the company.

As early as two days after the November 24th meeting, a letter was sent, outlining conditions under which Crompton would consider a voluntary, quote-unquote, voluntary withdrawal. So, only two days after that meeting, already conditions were being surfaced. Neither side, neither the plaintiff or the defendant in this case has produced any documents, any signed document, demonstrating that the company--that Crompton agreed on November 24th to anything.

And, to me, it only makes sense that a company that is being asked to surrender its most profitable product for no compensation would only agree to do that under the terms and conditions that was satisfactory to it as opposed to terms and conditions that were manufactured by an industry association or by the PMRA.

So, our view is that absolutely no agreement was reached. There are many references from the PMRA in the record that show that, for instance, the term that "the company agreed in principle," which to me implies there is yet more to come, if it's just an agreement in principle.

PRESIDENT KAUFMANN-KOHLER: Yet the principle is agreed when you have an agreement in principle. The rest is not agreed, but the principle is agreed. How should I understand this?

THE WITNESS: Perhaps the principle of voluntary withdrawal was recognized, but not without terms and conditions that had to be agreed to. And if the terms and conditions weren't agreed to, there was no agreement. Even in the ROU, which refers to this Voluntary Withdrawal Agreement, it talks about the Registrants being asked to voluntarily withdraw, not that they agreed to voluntarily withdraw, but that they were asked to voluntarily withdraw.

PRESIDENT KAUFMANN-KOHLER: We have seen a number of documents where they raised this.

THE WITNESS: There was no final agreement. There was no final agreement until I put my signature to it in October of 1999, and that agreement was acknowledged in writing by Dr. Franklin in a letter to me, saying, "We accept the terms and conditions of your withdrawal agreement."

> PRESIDENT KAUFMANN-KOHLER: That was the letter of 28 October, yes."[28]

42. Moreover, in response the subsequent questions posed by the President, Mr. Ingulli indicated why the Investor's agreement to withdraw was in fact a choice between withdrawal with conditions, or being forced out on PMRA's terms:

> "PRESIDENT KAUFMANN-KOHLER: There is this argument on Chemtura to say that the Voluntary Agreement is not a Voluntary Agreement as a forced--not a forced agreement but an imposition.
>
> I have difficulty with that when I read your letter of October 27th, of October '99, and then see an answer that says, "We agree from the PMRA." Can you explain to me what is meant by this forced agreement.
>
> THE WITNESS: Let me try to explain. We were dealing with the Agency that basically controlled the fate of our registration, and it was my firm belief that the PMRA had an agenda to eliminate lindane—all lindane registrations and take the product completely off the market. And with that anticipation, I felt that we were better off withdrawing the product under our own terms and conditions rather than have it canceled by the PMRA, and in turn we would get the benefit of the terms and conditions that were in the withdrawal letter. As it turned out, we didn't get the benefit of the terms and conditions in the letter. For instance, the accelerated review of the replacement product, Gaucho CS, that registration request went in only four months after I signed that withdrawal letter--four months--and yet it took roughly double the normal amount of time for it to be registered.
>
> We lost the registrations on the non-canola crops, which was part of the conditional withdrawal. Just about every term and condition in the Withdrawal Agreement was violated by the PMRA.
>
> But the reason why we ultimately agreed to, quote-unquote, voluntarily withdraw the registration is the anticipation if we didn't, they would be gone anyway, and we would rather have them go under our terms and conditions than the PMRA's terms and conditions.[29]"

A. Canada's Pattern of Conduct: An Overview

43. Further to the Tribunal's request, the Investor has outlined below the specific "measures" which collectively constitute breaches of NAFTA Chapter 11 (see Section IV.B). It is recalled that "measure" is defined in NAFTA Article 201 as "any law, regulation

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[28] Transcript: 255:4 - 257:6.

[29] Transcript: 257:24 - 259:11.

procedure, requirement or practice". In this case, several measures taken by Canada form a pattern of conduct inconsistent with Canada's NAFTA Chapter 11 obligations, in particular Article 1105(1) which requires that Canada "accord to investments of investors of another Party treatment in accordance with international law, including fair and equitable treatment". The measures described herein, when taken both individually and together, are inconsistent with "treatment in accordance with international law". The motivating factors which gave rise to these measures, illustrated at the Hearing, provide important context to their unlawful character.

1. Canada's Shifting Position in respect of Lindane: From Defence to Demise

44. Prior to 1998, Canada was publicly defending the use of lindane in international fora. Lindane continued to have very important registered uses in Canada, and it would have been highly inappropriate for Canada to support the eradication of lindane while it had legally registered its use in Canada and entitled Canadian investments or investors to formulate and market that product here. As one of Canada's own witnesses, Dr. Claire Franklin, acknowledged:

> "A. We register products under the Pest Control Products Act. And if any action is to be taken against registration, it has to be done under the Pest Control Products Act, which would--we would not ban anything without having a review to see whether that was acceptable or not.[30]
>
> A. I mean, the whole purpose of this is to be very clear that Canada was not in a position to sign--other countries had already banned lindane, so that they had no problem with signing a Protocol that, in essence, was leading to an overall ban. For them the situation was very clear: It didn't make a difference. It was gone in their country, so they could sign that because, in effect, they had already done that. We had registered products in Canada, and we had not done a review, so that there was no way that we were in a position to support a Protocol that, in effect, was going to ban them."[31]

45. This public support by Canada for the continuation of specific beneficial uses of lindane, such as seed treatment and pharmaceutical uses, informed Chemtura's legitimate

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[30] Transcript: 1071:4-8.

[31] Transcript: 1072:18 - 1073:3.

expectations throughout the 1990s that its lindane seed treatment business in Canada would not be arbitrarily destroyed.

46. Among those contemporary documents evidencing Canada's continued support for existing registered lindane uses in Canada are the following:

(a) Canada's Draft Briefing on Technical HCH for the UNECE LRTAP POPs Protocol, June 3, 1997:[32]

> "Any restriction on the production of Technical HCH must nevertheless allow continued protection for uses as an intermediate in the manufacture of other substances (e.g. lindane).
>
> [...]
>
> We support attempts to distinguish very clearly between 'lindane' and "Technical HCH'. It would be preferable that controls on the use of Technical HCH not be included indirectly as a sub-condition pertaining to lindane. This simply furthers the confusion around the use of the term 'lindane'.
>
> By focusing on lindane exclusively, we are omitting the specific HCH isomers which are of greater concern. It is in fact the use of Technical HCH which can be more reasonably attributed to the levels of HCH isomers formed in Arctic or remote regions and found to be bioaccumulating."

(b) An internal PMRA email from Suzanne Fortin (not produced as a witness) to MJ Kelleher and Jeff Parsons (not produced as witnesses), August 29, 1997[33] concerning the draft POPs Protocol:

> "[...]
>
> We would like to ensure that if lindane does not make its way into the protocol, that current Canadian uses of lindane are not compromised.
>
> [...]"

(c) Briefing Note excerpts prepared by Suzanne Fortin of PMRA, October 30, 1997[34] concerning HCH Lindane:

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[32] Joint Hearing Bundle, Tab 13.

[33] Joint Hearing Bundle, Tab 14.

[34] Joint Hearing Bundle, Tab 18.

> "As a result of extensive rewriting of the protocol text, the proposed commitments allow the use of HCH-mixed isomers as an intermediate in chemical manufacturing only, and allow products containing lindane to be used for the following purposes: (1) seed treatment; (2) soil application directly followed by incorporation into the top soil surface layer; (3) professional remedial and industrial treatment of lumber, timber and logs; (4) public health and veterinary topical insecticide; (5) tree plantations, lawn use, and indoor and outdoor use for nursery stock and ornamentals; and (6) indoor industrial and residential applications. It also requires that the uses of lindane be reassessed under the protocol by 2005.
>
> It should be noted that Canada was the only country asking that the uses in (5) and (6) be among those permitted under the protocol. Denmark/Greenland is concerned about the volatilization potential associated with the soil application uses in (2), required by several countries. The EU, speaking on behalf of all members states, is expressing strong concern over the potential for volatilization and long-range transport of lindane associated with some of these uses, and is pressing for a deadline date of 2005 for the uses in (5).
>
> [...]
>
> We have explained that we cannot commit to such a deadline at this time, and require that all of the aforementioned uses remain acceptable under this protocol. The reassessment of existing uses by 2005, under the protocol, is seen as a compromise whereby the concerns associated with lindane would be addressed. Through the Executive Body, Parties would have a say in the kind of assessment that is necessary. And Parties would have flexibility in determining their degree of participation in the reassessment.
>
> [...]"

47. During the Hearing, it became apparent that there was a movement within the Canadian government, and PMRA leadership in particular, to eliminate lindane in response to international and domestic pressure.

48. Dr. Franklin testified that "[e]verybody was pressuring" Canada to ban lindane.[35] As President Kaufmann-Kohler observed, the pressure on PMRA in respect of lindane is "a recurrent theme":

> "PRESIDENT KAUFMANN-KOHLER: When we were discussing earlier the draft agenda for the July 30th, 2001, meeting, which is Tab 197 in Volume 6, if you want to go back to it, you said we were under

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[35] Transcript: 1073:15.

> enormous pressure to move this review. You have spoken about pressure at different times in your testimony, but it is a recurrent theme."[36]

49. And indeed, Dr. Franklin stated that "the countries that had taken action were definitely anxious to see that other countries would follow suit."[37] This, notwithstanding that in Dr. Franklin's earlier testimony she explained that countries which had already banned lindane no longer had lindane registrations domestically or had never registered lindane for use in their territory, therefore for them "[i]t didn't make a difference":

> "A. I mean, the whole purpose of this is to be very clear that Canada was not in a position to sign--other countries had already banned lindane, so that they had no problem with signing a Protocol that, in essence, was leading to an overall ban. For them the situation was very clear: It didn't make a difference. It was gone in their country, so they could sign that because, in effect, they had already done that."[38]

2. Emergence of the Trade Irritant

50. In 1997, Gustafson called to the EPA's attention the importation of unregistered pesticide-treated canola seeds for planting in the U.S. In turn, in early 1998, the United States Government began raising complaints with the Government of Canada (in response to complaints by U.S. canola farmers) over imports of lindane-treated canola seeds for planting from Canada because U.S. growers were at a disadvantage compared to Canadian growers, who had access to effective and low-cost lindane products. Although lindane was registered in the United States for other agricultural uses, it had never been registered for use on canola because the canola crop market was too small to justify the cost of registration.

51. This tension was highlighted in a letter from Lynn Goldman of the EPA to Roger Johnson, Commissioner of Agriculture, North Dakota Department of Agriculture on August 5, 1998:

> "You requested EPA to establish a 'level playing field' for lindane use on canola, either by quickly establishing a tolerance in the U.S. or by

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[36] Transcript: 1087: 13-18.

[37] Transcript: 1088: 21-22.

[38] Transcript: 1072: 18-24.

> persuading Canada to discontinue using lindane on canola. In response to your concerns, I will clarify EPA's commitments on lindane and treated seed, and give you a brief status report on lindane registration in the U.S., our treated seed policy and ongoing cooperative work with Canada.
>
> As you know, EPA has been working in a number of ways to address trade problems arising from differential pesticide registrations between the U.S. and Canada for treated seeds. [...] In light of the confusion over the U.S. policy on treated seed, EPA made the decision to place a low priority on enforcement of its requirements for the 1998 growing season.
>
> [...]
>
> EPA committed to working with growers, registrants, the Canadian government and others involved to help avoid trade problems with treated seed in the 1999 growing season.
>
> [...]."[39]

52. Dr. Goldman subsequently conveyed the EPA's commitments in respect of the issues surrounding lindane for use on canola to Peter Sher of the U.S. Trade Representative in a letter dated October 7, 1998:[40]

> "[...] We are told that these pesticide issues are exacerbating the dispute over trade practices. EPA is prepared to take specific actions which are consistent with our already significant bilateral harmonization efforts and which should reduce friction over pesticide issues.
>
> One of the most pressing issues for our northern state growers is the greater availability in Canada than the U.S. of approved pesticides for canola, flax, dry beans and lentils. [...] U.S. and Canadian registration evaluation practises and standards are quite similar in scope, focus and effect. But the market for pesticides used on these crops, particularly canola, is substantially greater in Canada than in the U.S."[41]

53. PMRA clearly recognized the potential for this trade issue to advance its agenda, driven by a commitment to ban lindane for <u>all</u> uses. As by far the most commercially important use, canola seed treatment elimination would constitute a mortal blow to the viability of the lindane market generally.

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[39] Joint Hearing Bundle, Tab 37.

[40] Joint Hearing Bundle, Tab 42.

[41] Joint Hearing Bundle, Tab 42.

54. By late 1998, PMRA was committing (with EPA) to phase out all uses of lindane.[42] From a trade issue that concerned canola seed treatment, an unregistered use in the United States, it had become a PMRA-inspired proposal to get a commitment between the two agencies to phase out all uses of lindane. During cross-examination, Ms. Sexsmith confirmed this commitment:

> "Q. And I just want to clarify this because the paragraph above those, "The resulting proposal has emerged," and then "commitment between EPA and PMRA to work together to phase out all uses of lindane."
>
> Does that mean, was there an actual commitment, or was it proposed to have a commitment?
>
> A. By an actual commitment, you mean something in writing, or how do you mean "commitment"?
>
> Q. I will take whatever version it came out. Was there a verbal commitment?
>
> A. I believe in this case it would have been more verbal than anything, that we were in conversation related to the request that the Canola Council had made for us to contact EPA and see, you know, if the Agreement was something that, you know, they would be able to buy into as appropriate."[43]

55. This commitment is further confirmed in a contemporaneous email from Ms. Sexsmith to Dr. Franklin, addressing the "*timing on the demise of lindane....*" There is no uncertainty in these words – the unqualified intent at that time is clear.[44] That this was a focussed effort to do away with lindane exclusively and specifically is confirmed by the testimony of Mr. Anthony Zatylny. In the pledge by PMRA to facilitate canola grower access to replacement products, PMRA committed to facilitate registration of products which contained other active ingredient pesticides not registered in the U.S. In fact, PMRA's eventual approval of Gaucho CS FL, which contained the same fungicides as the Investor's lindane-containing all-in-one pesticides of the Vitavax group (thiram and carbathiin), not registered in the U.S., demonstrates that PMRA's interest was not in

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[42] Joint Hearing Bundle, Tab 12.

[43] Transcript: 799: 8-22.

[44] Joint Hearing Bundle, Tab 72.

pesticide harmonization between Canada and the U.S. but rather about a single-minded, concerted purpose, *i.e.* the phase-out of lindane alone:

> "Q. One of the components--two of the components of that Withdrawal Agreement were, one, that the PMRA would expedite the registration of lindane-free formulations, existing formulations where you pull the lindane out.
>
> A. Yes.
>
> ...
>
> "Q. Crompton's products at the time, Vitavax and the Vitavax family of products, do you know what the Active ingredients were in those products?
>
> A. Well, lindane was certainly one of them.
>
> Q. Right.
>
> A. Thiram and--I can't recall the other one, but--
>
> Q. Would it surprise you if it was carbothion [Sic.Carbathiin]?
>
> A. It wouldn't surprise me.
>
> Q. Okay. Were you aware that the Lindane Products on the market, the fungicide component of the Lindane Products, many of them did not have a U.S. registration or tolerance?
>
> A. I was aware of that, yes.
>
> Q. So, as part of this agreement to diffuse the trade situation, PMRA agreed to fast-track the registration of products which would themselves, according to the EPA, not be allowed untreated seed and could cause an FDA problem.
>
> A. Right."[45]

B. Canada's Revisionist History of Lindane Termination

56. At key points in the Hearing, certain witnesses for Canada at the epicentre of PMRA actions in issue offered a re-interpretation of documents on the record in an attempt to construct a benign or routine significance to extraordinary events. On cross-examination, Wendy Sexsmith characterized her revision of a CCC news release, which fundamentally

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[45] Transcript: 704:4-8, 12 - 705:11.

altered the message originally submitted to her, in relation what the pesticide and grower industry were doing: discontinuation of lindane use was changed by the PMRA to the industry leading with new pesticide products, something "governments do all the time":

> "Q. So, you were--in addition to selling to the EPA the idea of a Voluntary Withdrawal Agreement, you were also assisting the Canola Council in promoting, if I can say that. I'm asking to you confirm this or you can clarify it for me if you like, but promoting the discontinuation of lindane use and the--well, in this news release, the adoption of new alternative products.
>
> A. Um-hmm. Well, I wouldn't categorize it like that at all. I mean, this is a very normal procedure if Governments are working with stakeholders and stakeholders are putting in a document that's going to be for public release, something that refers to a Government activity. And what I was doing was merely providing accurate information that they could include or could not include as they saw fit.
>
> So, it was neither promotion or--it was certainly not promotion. It was really providing accurate information to include in an external document. And this is something that Governments do all the time."[46]

57. In later testimony Ms. Sexsmith re-interpreted the statement "EPA is concerned about the continuing use of lindane on canola in Canada apparently with a view to seeking cancellation of the use:"[47]

> "...really refer[ing] to the issue of canola treated seed moving into the U.S. and the issue of EPA considering the border closure...because of that." She concluded as follows:
>
> "So, from my perspective, what it means is that it really refers to the issue of canola treated seed moving into the U.S. and the issue of EPA considering the border closure, if I could use those words, because of that. So, that's how I would interpret that sentence."[48]

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[46] Transcript: 790:22 - 791:14, Joint Hearing Bundle, Tab 68.

[47] Joint Hearing Bundle, Tab 41.

[48] Transcript: 796: 5-9.

58. In subsequent testimony Ms. Sexsmith again re-interpreted a clearly unequivocal statement, "Commitment between EPA and PMRA to work together to phase out all uses of lindane:"[49]

> ... that's how I would interpret that statement, not as categorical as it sounds because certainly Canada was in no position to say it like that because we can't just phase things out without doing a risk assessment and having some reason to phase things out."[50]

59. Ms. Chaffey, another of Canada's witnesses, also purported first to not recognize a meeting note prepared in contemplation of the Special Review which indicates that, in the planning stages of the Special Review, PMRA had determined it would not pursue a Data Call-In, then subsequently to dismiss the note entirely as "handwritten" and therefore not reflective of "a decision". [51] Ms. Chaffey attempted to further diminish the significance of this contemporaneous document through a blurring of the timeline when PMRA decided to avail itself of the EPA's database – several months after preparation of the meeting note.

1. Negotiation of the Conditional Withdrawal of Lindane for Canola Use

60. Notwithstanding Canada's attempts to shelter its actions behind a veil of "public health and the environment" (its only legitimate mandate), the CWA was proposed, entered into and strictly enforced prior to PMRA publicly commencing, let alone concluding, it's "Special Review of Lindane." This was an early indication that PMRA had clearly targeted lindane for cancellation, notwithstanding the absence of any scientific basis for such a position and therefore the absence of a statutory authority to cancel the use of lindane products. Under Canadian law, controlled products, including lindane, must be registered in order to be imported, sold or used in Canada. But once registered, Canada can only cancel or suspend the registration when "based on current information available [...] the safety of the control product or its merit or value for its intended purposes is no

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[49] Joint Hearing Bundle, Tab 41.

[50] Transcript: 789:22 – 799:1.

[51] Transcript: 485-1 -; 486: 2-3.

longer acceptable."[52] Canada did not have the legally required foundation to cancel or suspend the registration of the Lindane Products. Accordingly, it fostered and exploited industry fears to pressure producers to voluntarily withdraw their products, as the only alternative. The EPA and the U.S. industry, on the other hand, considered only that a level playing field was needed.

61. PMRA pressured Chemtura Canada, and other lindane registrants in Canada, to enter into an agreement for the withdrawal of the registration of all lindane products for use on canola. As explained above, Canada had privately committed to end Chemtura Canada's canola-based lindane business, as all other lindane agricultural uses, leaving Chemtura Canada no alternative but to negotiate a viable accommodation of PMRA's demands.

62. Contemporaneous PMRA correspondence and witness testimony confirm that the PMRA's actions leading to the conditional withdrawal of lindane registrations for use on canola in Canada were improperly motivated by trade and other foreign-driven concerns, and not environmental, health or any other domestic safety-related concerns.

63. The close collusion of PMRA with the CCC is confirmed by the testimony of Wendy Sexsmith, and documentation in the record, whereby PMRA coached the communications of the CCC:

> "Q. So, you were--in addition to selling to the EPA the idea of a Voluntary Withdrawal Agreement, you were also assisting the Canola Council in promoting, if I can say that. I'm asking to you confirm this or you can clarify it for me if 1 you like, but promoting the discontinuation of lindane use and the--well, in this news release, the adoption of new alternative products.
>
> A. Um-hmm. Well, I wouldn't categorize it like that at all. I mean, this is a very normal procedure if Governments are working with stakeholders and stakeholders are putting in a document that's going to be for public release, something that refers to a Government activity. And what I was doing was merely providing accurate information that they could include or could not include as they saw fit.

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[52] *Pest Control Products Regulations*, Section 20, Exhibit A2 to the Investor's Memorial.

> So, it was neither promotion or--it was certainly not promotion. It was really providing accurate information to include in an external document. And this is something that Governments do all the time.[53]"

64. Ms. Sexsmith's testimony also confirmed that the PMRA advanced the agenda to eliminate lindane with the EPA:

> "At WS-12, which is the tab I asked you to turn to, in the last line where you say, "I am now going to try to sell this to the EPA with go-ahead from Tony as a way to stop the fuss."
>
> A couple of--just asking you for clarification. What is "this"? To try to sell "this"?
>
> A. Well, this would have followed on from discussions that the Canola Council had already had with Registrants and with the growers with the concept of the development of the Agreement in mind. I would have received a call from the Canola Council saying, you know, "This is what we're thinking.
>
> Can you talk to EPA to see if, in fact, this is something that they would consider as viable regarding stopping the border closure for a couple of years if we did this."
>
> And so, that's what was meant by "this." So, essentially, the Canola Council would have informed me of what they were thinking and asked me to contact EPA as regulatory authority to regulatory authority to have a discussion about this so that this would have been the Voluntary Agreement, okay, and the fuss would have been the border closure.[54]"

65. In their testimony, the representatives of the CCC repeatedly asserted that the withdrawal agreement was an industry-led initiative not only to quell the trade concern in relation to exports of canola seed and products to the U.S., but to distance canola's healthy image from negative connotations associated with lindane.[55] This, however, is contradicted by evidence in contemporaneous correspondence of the CCC. In January of 2001, Joanne Buth wrote to the Investor anticipating the possibility that the Special Review would restore regulatory approval of the continued use of lindane:

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[53] Transcript: 790:22 – 791:14, Joint Hearing Bundle, Tab 68.

[54] Transcript : 789-13 - 790:7; Exhibit WS-12.

[55] Transcript: 701:14.

> "Q. [reading from Exhibit WS-90:] "I suspect that the delay may be due to EPA's workload. We had hoped to have a [RED] decision by now. If the [PMRA Special Review and EPA RED] decision was positive for both Canada and the U.S., it would give the [lindane product] manufacturers enough time to gear up production for the 2002 season. I know there are varying views on whether or not lindane for seed treatment uses will pass the review, but we need to be ready in case the decision is positive."
>
> "A couple of things. Have any of you have had contact with the EPA regarding the time line for the completion of the review? Is there any way to advance the review? I suspect Canada would be able to follow along with EPA if we could get the"--obscured by an exhibit mark--"to commit to an earlier decision time." I assume it said "PMRA" there.
>
> "Two, what amount of lead time do you need to gear up for production for the 2002 season? What is the latest possible date?""
>
> This is from JoAnne Buth to, as we can see from the e-mail above, in fact, to Uniroyal, to Chemtura. It may as well have been sent to other people. It's been obscured. This was the copy that we--obviously you attached to your Affidavit, I don't know, but I'm referring to is in Section one where it says, "Have any of you have had contact with the EPA."
>
> In any event, I guess I'm going to focus on the obvious point of the e-mail, which is that if PMRA had made a positive nontermination, noncancellation of use finding in relation to lindane, they would be right back with it; isn't that right?
>
> Well, I would certainly read from this that JoAnne Buth was trying to be prepared as to whichever might happen."[56]

66. Notwithstanding the availability of alternative products, Helix and Gaucho, the Canadian canola industry was in fact prepared to revert to lindane, a fundamental contradiction of the position advanced by Canada's witnesses in this proceeding that lindane use in canola was rejected by the user industry. To the contrary, the CCC's position at the time was that the only consideration for continuing lindane product use was regulatory approval.

67. This point was further confirmed in the testimony of Dr. Lynn Goldman for Canada, where she confirmed that Canadian growers, far from their characterization by Canada's witnesses as "moving away" from lindane, sought its registration in the U.S. as late as 2002:

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[56] Transcript: 826:21 - 827:23; Exhibit WS-90.

> "Part of the issues in this hearing as well as what did the growers really want, and so that's why I'm boring you by reading from your own words, and also so the record reflects it.
>
> Under Tab 17 of your second Report, I'm looking at page--Tab 17, it's that old memorandum, agency response to Phase III comments on lindane again, January 30, 2002. The third page in, A 3, there is an Appendix A that point 3 says "Canadian canola growers and seed treaters comments. Many comments came from canola growers and canola seed treatment businesses in Canada. They urged that lindane be registered for use on canola in the U.S. Currently lindane use as a pre-plant seed treatment on canola is voluntarily suspended in Canada."
>
> A. I see that, yeah.
>
> And again, what I was referring to is the comments to the final RED and not the comments during the draft, but your point is taken that the Canadian canola growers certainly wanted the U.S. to register the lindane."[57]

68. In short, the growers' alleged reluctance to use lindane because it might taint canola's healthy image is not in evidence. The reverse was true: had PMRA permitted the use of lindane-containing products, the user industry would have returned to lindane.

69. In short, had Canada conducted the Special Review in accordance with good scientific and procedural prescriptions later articulated by the Board, lindane registrations would not have been terminated, and had EPA approval also been obtained (as the 2002 RED was on the road to granting,) the Canadian canola industry indicated an intention to resume using lindane seed treatments for canola. In questioning by the Tribunal, Ms. Sexsmith confirmed that PMRA would have reinstated lindane use for canola seed treatment if the EPA had issued a tolerance for lindane on canola products. This decoupled from the alleged industry "rejection" of lindane use, the cessation of lindane use for canola seed treatment, and all other agricultural uses, is attributable to PMRA's actions alone, beginning with the flawed Special Review and continuing today:

> "ARBITRATOR BROWER: Because I thought or as I saw it the thrust of the question was that Paragraph 4 seems to say that action by the EPA in issuing a tolerance for determining lindane exempt from requiring a tolerance would alone require you to reinstate the lindane registrations, even though the review was ongoing.

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[57] Transcript: 1207:13 – 1208:6.

THE WITNESS: Yes.

ARBITRATOR BROWER: For how long would they be reinstated? There is no limitation indicated.

THE WITNESS: It would be until the completion of the review, because in the Special Review we were reviewing the canola uses as if they were still a registered use. And if under our Special Review we hadn't found any negative—any safety concerns, which we did, then in principle we would have had no issue in reinstating if a tolerance had been set in the U.S. But, in fact, through our review, we did have safety concerns, and when that happened, we would not have been able to reinstate because the conditions essentially had changed.

ARBITRATOR BROWER: I understand that, but the point that I thought was being made by or sought to be made by Mr. Somers was that, to the extent the EPA might have acted favorably in respect of lindane seed treatments before your process was concluded, you were willing to basically have your action tied to and determined by the EPA. In other words, the EPA action could automatically reinstate in Canada some--

THE WITNESS: Only related to the tolerance--excuse me, sorry.

ARBITRATOR BROWER: I understand. But that's all that was needed in the United States.

THE WITNESS: And only if through our review we hadn't come up with some health or environmental safety concerns which, in fact, we did.

ARBITRATOR BROWER: I understand. But it's an issue of timing involved also.

THE WITNESS: Yeah, yeah."[58]

70. Parenthetically, as is well known now, of course, no environmental bases were established for lindane deregistration in Canada, and the sole "health" concern was occupational risk which was unmasked as unjustified by the Board.

71. In an internal note, PMRA observed that Gustafson will not participate in a voluntary withdrawal unless certain conditions are met, then proceeded to discuss how much longer lindane-based canola seed treatments would have on the market: "It is important that the PMRA and the EPA discuss what length of time registrants would be allowed to continue selling their existing lindane based canola seed treatments and seed treated with

[58] Transcript: 840:3 – 841:12.

lindane."[59] In other words, lindane for canola use was going to be removed from the market, regardless of Gustafson/Chemtura's position. In this sense, it was not merely the "lesser of two evils", rather Chemtura was damned if it went voluntarily and damned if it refused.

72. Following the commitment by PMRA to Chemtura Canada to abide by several critical conditions, the PMRA and Chemtura Canada concluded the CWA in late October 1999[60]. The key conditions in the CWA process were:

(a) Chemtura Canada's Lindane Products could be used to treat canola seed until July 1, 2001, with no stated restrictions on when that treated seed could be sold or planted;

(b) The PMRA would coordinate and collaborate with the U.S. EPA on a timely scientific review and re-evaluation of any new lindane data already submitted and/or to be submitted in accordance with any data call-in or regulatory request and ultimately provide a scientific assessment of lindane by the end of 2000;

(c) Chemtura Canada's Lindane Products would continue to be registered for use on all remaining (non-canola) crops; and

(d) The PMRA would expedite the registration of lindane-free products (i.e., the existing products with the lindane removed) and lindane replacement products (i.e. combination insecticide-fungicide products without lindane).

(e) Reinstatement of lindane for canola if a tolerance was obtained in the United States and/or there was a positive outcome to PMRA's review.

73. In questioning by the Tribunal, Mr. Ingulli for the Investor confirmed that while the application for expedited registration of Gaucho CS FL was not an explicit condition of the CWA between PMRA and Investor, it had been, from the first discussions of withdrawal of lindane for canola seed treatment by the industry, understood as a reciprocal commitment by PMRA to the industry as a whole:

> "THE WITNESS: The expectation for an accelerated review was based on correspondence and discussions with the PMRA that preceded this letter, and I apologize. I misspoke when I said it was in the letter. It's not.

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[59] Joint Hearing Bundle, Tab 51.

[60] Joint Hearing Bundle, Tabs 117 and 118.

> ARBITRATOR BROWER: Okay. Well, that leaves us with a question of what is the status of the situation on that point. You feel that is a legitimate expectation, although not an agreement, or how would you describe it?
>
> THE WITNESS: The accelerated registration?
>
> ARBITRATOR BROWER: Right.
>
> THE WITNESS: It wasn't a point that was acknowledged in writing by Claire Franklin when she accepted the letter that I wrote, but there is much documentation in the materials that you have where the PMRA commits to facilitate accelerated registrations of replacement products. There must have been enormous pressure on the PMRA to register a product to replace lindane. They were going through a process where they were asking Registrants to withdraw their products that were needed by canola growers in Canada to treat a devastating pest, the flea beetle, without having a registered product to hand the growers so that they could protect themselves from the damage of the flea beetle."[61]

74. PMRA had agreed in 1998 with the CCC and industry to expedite replacement product reviews in consideration of the industry agreeing to withdraw its registration voluntarily, as a matter of record.

75. The exchange of letters between the Investor and PMRA dated respectively October 27 and 28, 1999 formed the basis for a legitimate expectation on the Investor's part that PMRA would abide by the agreement they evidenced, in the clearest possible terms. The provisions agreed to by PMRA were all within its discretionary mandate. They did not require PMRA to bypass or alter its statutory duty, its policy or its processes. In any event, the Investor's expectation was confirmed by the express agreement of the agency. Had the matters that the agency agreed to been outside of its power or authority to perform, its good faith in entering into such an agreement (its consent to which was never subsequently qualified or retracted) is put directly in issue. As the record demonstrates, PMRA agreed to the Investor's conditions, and proceeded to breach them in the manner outlined below.

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[61] Transcript: 259:21 – 260:17.

76. In questioning by Arbitrator Brower, Ms. Sexsmith for Canada confirmed in her testimony that there was no obstacle to reinstatement in accordance with the agreed upon condition of a tolerance issuing from the EPA:

> "ARBITRATOR BROWER: Could I ask you a question, however.
>
> THE WITNESS: Certainly.
>
> ARBITRATOR BROWER: Because I thought or as I saw it the thrust of the question was that Paragraph 4 seems to say that action by the EPA in issuing a tolerance for determining lindane exempt from requiring a tolerance would alone require you to reinstate the lindane registrations, even though the review was ongoing.
>
> THE WITNESS: Yes.
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> ARBITRATOR BROWER: For how long would they be reinstated? There is no limitation indicated.
>
> THE WITNESS: It would be until the completion of the review, because in the Special Review we were reviewing the canola uses as if they were still a registered use. And if under our Special Review we hadn't found any negative--any safety concerns, which we did, then in principle we would have had no issue in reinstating if a tolerance had been set in the U.S. But, in fact, through our review, we did have safety concerns, and when that happened, we would not have been able to reinstate because the conditions essentially had changed.
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> ARBITRATOR BROWER: I understand that, but the point that I thought was being made by or sought to be made by Mr. Somers was that, to the extent the EPA might have acted favorably in respect of lindane seed treatments before your process was concluded, you were willing to basically have your action tied to and determined by the EPA. In other words, the EPA action could automatically reinstate in Canada some—
>
> THE WITNESS: Only related to the tolerance--excuse me, sorry.
>
> ARBITRATOR BROWER: I understand. But that's all that was needed in the United States.
>
> THE WITNESS: And only if through our review we hadn't come up with some health or environmental safety concerns which, in fact, we did. ARBITRATOR BROWER: I understand. But it's an issue of timing involved also.
>
> THE WITNESS: Yeah, yeah.

ARBITRATOR BROWER: Okay. Thank you."[62]

77. This was again confirmed in cross-examination, by Dr. Claire Franklin:

> "Q. All right. If--did this represent an undertaking by the PMRA in agreeing to this, that if the EPA issued a canola tolerance, you would reinstate the use in Canada?
>
> A. If the EPA issued a tolerance before we had completed our review, then, yes, we were in a position to be able to reinstate. If we had reviewed it and it was not acceptable, and I think that may well be the point on the page before, that if it has adverse effects, that they would not seek reinstatement.
>
> Q. But because your review would not have been completed at that time?
>
> A. Right.
>
> Q. You wouldn't have known about adverse effects, so as far as—
>
> A. That's correct.
>
> And, you know, I think the issue with the request that could it be put back quickly was really something that we determined that if the reason that the companies had withdrawn voluntarily was because of the trade issue, and if we had no reason to believe that there were serious unacceptable effects, that we would be prepared to put it back. Now, that could have been a very short-lived period of time because, of course, once the reviews were done, then the potential would be, but we were signaling in good faith that we would--that there was a mechanism for that to be reversed, but it was extremely contingent upon the outcomes of what the re-evaluations were doing.
>
> But it did give that opportunity since they'd voluntarily withdrawn because of trade; that if there were no reason to say that there were unacceptable risks that it could be put back.
>
> So, I think in good faith that was the intent with doing that."[63]

78. This was a trade issue, pure and simply manipulated by PMRA and using its regulatory authority, to terminate lindane use in Canada.

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[62] Transcript: 839:25 – 841:13.

[63] Transcript: 1063:16 – 1064:23.

2. PMRA's Failure to Live Up to its Commitments in respect of the Investor's Lindane Products Investment

79. Subsequent to the CWA, Canada failed to meet all of the key commitments it has made to Chemtura Canada:

(a) Canadian seed treaters were told that they would be subject to substantial fines if they sold treated canola seed after July 1, 2001.[64] Canadian farmers were also told that they would be subject to substantial fines if they planted lindane-treated canola seed after July 1, 2001. The deadline of July 1, 2001 was supposed to apply only to sales of lindane products and to the treatment of seed, not to selling or planting treated seed;

(b) The scientific review was not completed by the end of 2000, and the scientific review (an occupational exposure risk assessment) that was ultimately concluded in October 2001 (i.e. the Special Review) was highly flawed and improper, as confirmed thereafter by an independent government-appointed expert panel;

(c) Based on that improper scientific review, the PMRA in February 2002 cancelled Chemtura Canada's registrations of Lindane Products for all uses, despite the PMRA's agreement not to do so and despite the seriously flawed process leading to, and the equally flawed methodology and conclusions of, the PMRA's scientific review;

(d) The PMRA significantly delayed the registration of Chemtura Canada's replacement product (Gaucho CS FL) by such an extent that Crompton essentially lost all of its canola seed treatment business, while at the same time the PMRA ignored its own procedures and requirements in its accelerated registration of a competitor's (Syngenta) non-lindane product, Helix.

80. These failures are outlined in further detail in Section IV.C below.

3. Confirmation of Flaws in PMRA's Process and Science by an Historic Board of Review

81. Canada has attempted in its documentary materials, including the affidavits of Wendy Sexsmith, to attribute the delays and obstruction to the appointment of the Lindane Board of Review to the actions of the Investor. In cross-examination, however, Ms. Sexsmith disclaimed any knowledge of the attempts by Investor to have the Board established fairly. Accordingly, as a threshold matter, and in the Investor's submission, all of Ms. Sexsmith's testimony on this matter and associated documentation ought to be

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[64] Joint Hearing Bundle, Tab 159.

disregarded by the Tribunal, as the contrivance of persons other than the affiant, out of the reach of cross-examination:

> "Q. I'm now jumping to Paragraph 168 where the second sentence from the bottom, "Far from commencing proceedings to compel the Government of Canada to perform its statutory duty, Chemtura instead delayed the process by a year only to withdraw its objection."
>
> Do you know who actually appointed the Lindane Board of Review, as it happened? It was the Minister of Health, wasn't it? In the materials attached to your Affidavit, it's--
>
> A. Well, I have to say I wasn't directly involved at that point in time.
>
> Q. I see.
>
> A. So, some of the other witnesses can address this better than I can.
>
> Q. So if I said that the objection of Chemtura that resulted in this delay was to the fact that it was the PMRA initially that was going to appoint the Review Board, and that after this legal process in Federal Court went on, it was the Minister that ended up appointing the Review Board, that wouldn't amount to withdrawing its objection. Chemtura wasn't withdrawing its objection; it was achieving the relief that it sought by having the Minister appoint the Board instead of the PMRA.
>
> A. Well, I really have to plead ignorance on that.
>
> Q. Oh, okay.
>
> A. And I think my colleague, Dr. Claire Franklin, who was directly involved, would be better situated to deal with that directly.
>
> Q. Okay. The legal documents and then all of those applications and the letters to lawyers and stuff were all attached to your Affidavit and commented on in it, so that's why I'm taking it up with you, but I appreciate your clarification."[65]

82. Similarly, Dr. Claire Franklin for Canada disavowed knowledge of the appointment of the Board of Review:

> "Q. You'll agree with me in any event that the concerns of the counsel for Chemtura which led to the Court action which led to the Minister freezing all action on the file and a year of delay, the concerns of counsel were not that the PMRA was involved, but that the PMRA would either

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[65] Transcript : 823:8 – 824:14.

appoint the Board or that the PMRA would be the Board, and that's what this letter at Tab 247 makes very clear.

A. Right, right.

And I would contest that their concerns were unfounded because that was not the case.

Q. Did you respond at any point to the company as far as—

A. I did not have any direct, that I recollect, any direct correspondence with the company over appointment of the Board.

Q. Do you know whether the Minister responded to this letter of June 3rd, 2002, at Tab 247?

A. I think they filed action before she had a chance. They filed, I believe, if memory serves me, on the 8th. That would be unbelievable speed for a letter to come from a Minister's office, and so that my recollection is that they actually filed before the Minister had an opportunity to respond and to clarify the situation.

Q. Under Tab 248, the filing date appears to have been June 12, actually.

A. June 12.

Q. Still, unbelievable speed for your Minister?

A. For any Minister, yes.

ARBITRATOR CRAWFORD: If I may make a comment, it's a great pity that the Minister didn't respond because the first letter from the Minister was inappropriately formulated. The Minister should have said, of course not. I make the appointment. I'm simply asking for advice on the members.

THE WITNESS: Yes.

ARBITRATOR CRAWFORD: And it would have saved you a lot of time.

THE WITNESS: But the Minister may have thought that the Claimant would be familiar with the legislation, which does indicate, I believe, that this Board is appointed by the Minister.

But you're right. I mean, I think that that's something that could perhaps-- and I understand why a Claimant would be concerned, that if the group that's done the review is the one that's going to do the larger review, but that was never the intention."[66]

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[66] Transcript : 1098:14 – 1100:8.

83. Canada has attempted to justify PMRA's conduct and findings in the Special Review by trivializing and repackaging, through the lens of yet another expert, the Board's findings. Canada has further sought to portray Chemtura Canada as the author of its own misfortune by characterising the legal proceedings initiated by Chemtura Canada in June 2002 to ensure that the Minister's discretion to appoint the members of an independent board was not improperly delegated to PMRA as unnecessary and the cause of delay.

84. Dr. Franklin initially responded with a refrain now familiar to all participants in these proceedings, that in PMRA's view it had no responsibility toward the Investor, Chemtura Canada was simply assumed to have known the process, and moreover, was to assume that the process was properly carried out.[67] This reflects the kind of circular and gratuitous logic present in much of Canada's witness evidence, whether in respect of the Board proceedings, the Special Review or negotiation of the CWA. Dr. Franklin ultimately conceded that "you're right. I mean, I think that that's something that could perhaps – and I understand why a Investor would be concerned, that if the group that's done the review is the one that's going to do the larger review ....", this would be a legitimate concern.[68] Canada had, in fact, already conceded this point at the time, as reflected in the Consent Order on costs.[69]

85. The Board was the first such board in the history of PMRA.[70] It was composed of eminent scientists whose reputations are unimpeached (and unimpeachable) in this proceeding, agreed by both Chemtura Canada and PMRA, and appointed by the Minister of Health. Canada's attempt to undermine the Board's conclusions by engaging an expert almost five years after the fact to opine on and reinterpret the Board's report is unpersuasive. The Board's report speaks for itself and is the only reliable, independent evidence in this proceeding on the procedural and scientific integrity of PMRA's Special Review.

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[67] Transcript: 1096-1100.

[68] Transcript: 1100:4-8.

[69] Canada's Annex R-110.

[70] Transcript: 1086: 2-6.

86. The Board found that PMRA's process leading to the Occupational Exposure Assessment (the culmination of the Special Review) and its conclusions therein were highly flawed and recommended that PMRA re-evaluate lindane properly in accordance with its recommendations. The Board's findings on process may be briefly recalled as follows:

(a) Registrants should be afforded a meaningful opportunity to make representations to PMRA, particularly where the decision is as dramatic as a cancellation of registrations. This is particularly so in respect of Lindane, which had a long-standing approval for use in Canada.

(b) The PMRA had an obligation to advise Chemtura that its focus was going to be on occupational risk, since the Special Review made no mention of occupational risk and all communications with Crompton were primarily in respect of environmental risk.

(c) The comment period afforded Crompton was inadequate.

(d) There was considerable haste on the part of the PMRA after the risk assessment was released to bring the matter to a close. This haste was "particularly perplexing" given that Lindane had been in use for over 40 years.

(e) Given the timing of the announcement and the limited use season for Lindane, other options for effective control could have been invoked in the short-term. In other words, it was not necessary to cancel Chemtura's registrations immediately. PMRA's stated concern was worker exposure which could have been addressed through mitigation. Moreover, other registrants were granted a wind-down period, which suggests that the concerns about worker exposure were not so pressing and significant as to require an immediate cessation of use.

(f) Addressing mitigation is fundamental to the scientific inquiry leading to a regulatory decision, and this did not occur in the case of Lindane.

(g) PMRA should have been aware of the current status of industry practices regarding worker exposure.

(h) PMRA's risk mitigation stage was not adequate, the decision was made without consideration of adequate risk mitigation opportunities, and resulted in an outcome that was not fair to affected parties.

87. Canada attempts to dispute these findings through the fact witness evidence of individuals previously involved in PMRA's Special Review, whose conduct would have implicitly been impugned by the Board. Mr. Worgan's testimony is a case in point:

> "[...] What the Board, I put it to you, was suggesting or even recommending was that, given the seriousness of these issues, it would have been better to entertain a dialogue with the people who would be in

> a position to either assist or be consulted anyway on mitigation of those risks. But, in fact--
>
> A. But they were given an opportunity. I recognize that the Board felt that it was too short, but it was still a month, and the issues around lindane had been raised for a number of years. ... Chemtura would have been well aware that there would have been possible mitigation measures that they could have come in to address with us, but essentially what they did is they just rejected the Assessment. They didn't come in and inquire with respect to what were some of the possible mitigation measures."[71]

88. Again, this attempt to re-argue the Board's proceeding is unpersuasive. Canada has repeatedly misrepresented the Board's finding in respect of PMRA's failure to advise Chemtura Canada of PMRA's occupational risk concerns. The Board's report is clear: "... the Board is of the view that once PMRA knew its focus in the Special Review was going to be on occupational risk, it should have advised Crompton, knowing that the Special Review announcement made no mention of occupational risk, and knowing that all communications it had with Crompton were primarily in respect of environmental concerns"[72].

89. Mr. Worgan again insisted that the Investor simply ought to have intuited the PMRA's concerns with respect to occupational exposure, based on concerns raised in other jurisdictions over lindane use on other crops:

> "But, you know, the Claimant as well was well aware of, you know, the concerns that had been raised internationally with respect to occupational exposure, and I'm kind of surprised that, you know, they didn't knock on our door to propose specific mitigation measures, you know, if they had those in mind, given the concerns that they were well aware of that had been raised internationally on this chemical."[73]

90. But, even Mr. Worgan was not able to say unequivocally that the Investor did or should have known occupational exposure was a concern ("if they had those in mind") and, moreover, the Board found that the Investor's knowledge was not the issue – PMRA's failure to act responsibly in not informing the Investor of these concerns was the issue.

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[71] Transcript : 605: 11-25.

[72] Joint Hearing Bundle, Tab 275, para. 112.

[73] Transcript: 596:12-18.

91. Where the Board found that PMRA had an obligation to consider adequate risk mitigation opportunities, Mr. Worgan claims it would have been "unethical" to consult with the Investor on current risk mitigation strategies even though it knew that the data in its possession was outdated.[74] In Mr. Worgan's view, this would be "unethical" because it would potentially impose a cost on the Investor to generate new data when PMRA had done a "quick calculation" on the basis of another study suggesting that risk estimates may be unacceptable.[75] In other words, it was "unethical" for PMRA to give the Investor any opportunity to defend its lindane registrations. It was unethical, because the uncertainty factor chosen by PMRA would have frustrated any possible risk mitigation measures. This of, course, stands in direct contrast to his insistence that Chemtura Canada could have come in at any time (assuming it had a reason to) to address possible mitigation measures.[76]

92. Mr. Worgan's testimony in this area reflects the extent to which PMRA was and continues to be wholly disconnected from its mandate and commercial reality, to the detriment of the Investor and its lindane seed treatment business in Canada.

93. The Board also found that PMRA made several unacceptable scientific findings. The main conclusions of the Review Board may be recalled as follows:

(a) While the evidence for sensitivity to the young cannot clearly be refuted, the evidence in support is "minimal" and "suggestive" rather than conclusive.

(b) With respect to immunotoxicity endpoint, the PMRA relied on studies published in the open scientific literature, which it would not normally do. Further, the PMRA did not consider the extent to which contaminants could be a major contributing factor in the underlying immunotoxicity. The evidence for Lindane-related immunotoxicity is not compelling.

(c) The additional 10x uncertainty factor is not justified. The PMRA itself acknowledged that an additional uncertainty factor as low as 3x would be considered adequate by many toxicologists for the specific endpoints at issue. In

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[74] Transcript: 594:13.

[75] Transcript: 594:18-21.

[76] Transcript: 605:20-25.

this regard, the PMRA's own witness indicated that a factor as low as 3x would have been considered adequate.

(d) The PMRA's conclusion of common toxicological endpoints and aggregated exposure for both inhalation and dermal exposure is not sufficiently supported by the evidence and available data.

94. Mr. Worgan again attempted to weaken the Board's scientific findings, claiming "the Board's conclusions regarding the toxicological Assessment [were that] the evidence is suggestive as opposed to conclusive."[77] Ms. Chaffey similarly denied that the Board found PMRA's selection of a safety factor to be unreasonable.[78] However, this belies the ultimate conclusion reached the Board, which states in no uncertain terms:[79]

> "The Board is of the view that the additional 10x uncertainty factor is not justified. It therefore recommends that PMRA consider an adjustment factor other than the additional 10x maximum default. [...]"
>
> [Emphasis added]

95. In response to Arbitrator Crawford's question as to the likely outcome of the Special Review if PMRA had chosen a risk factor of 100 instead of 1000, Mr. Worgan claimed not to be able to say what it would be.[80] Ms. Chaffey testified, however, that PMRA's determination of "unacceptability comes down to our margins of safety and what we deem to be acceptable or not".[81] It is clear from the Board's assessment that the additional safety factor was the "critical issue" because "a margin of exposure of 1000x is a formidable hurdle".[82] But for this "formidable hurdle", there is no evidence on the record to suggest that lindane would not have been acceptable for continued registration.

96. In fact, the evidence of Dr. Lucio Costa on the Board of Review is discredited by the Board's own conclusions. There would have been no need for recommendations, no

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[77] Transcript: 618:11-12.

[78] Transcript: 505:1-4.

Joint Hearing Bundle, Tab 275, para. 222.

[80] Transcript: 650:2-4.

[81] Transcript: 472:11-14.

[82] Joint Hearing Bundle, Tab 275, para. 216 (emphasis added).

need for a Re-Evaluation, if the differences of views of PMRA and the Board had been within the parameters of "reasonable disagreement between scientists." In fact, the Board found that on the basis of the scientific data before it, PMRA's choice of uncertainty factor was not justified, and recommended that a different one be considered. PMRA simply refused. In the words of Canada's own expert Dr. Costa:

> "So, my suggestion to you at least is, as to the scientists at PMRA and the scientists at the Lindane Review Board, they did not agree. They did not justify--PMRA did not justify in the way that the Lindane Board of Review asked them to, because when I lay the Special Review side by side with the REN 2008, I don't see any difference in the justification, I guess, and I was wondering if you did and if you could help me with that.
>
> A. Well, as I said earlier, regulators have the possibility of applying different numbers.
>
> Q. Yes.
>
> A. It could be 3, it could be 10. PMRA applied the factor of 10. The Board of Review said, "Why don't you consider a lower value?" PMRA, in their 2008 REN, decided to stick to their number and applied again a 10-fold safety factor. As I mentioned earlier, you could say that this is leaning toward a somehow conservative position, but in my opinion, it is a scientifically acceptable position and justified by the role and mission of PMRA."[83]

97. These "weaknesses" in the PMRA's exercise of its mandate, which gave rise to "serious questions" about the PMRA's overall regulation of pesticides, can be seen throughout the process that led to the destruction of Chemtura's lindane product business in Canada and are not refuted by Canada's evidence:

(a) The PMRA's decisions regarding lindane for use on canola were driven by trade, political and international pressure factors, not based on science;

(b) In its Special Review, the PMRA greatly overestimated the occupational exposure risks of lindane;

(c) There was no genuine public consultation in the Special Review process;

(d) The PMRA significantly postponed the conclusion of the Special Review based on the justification that it was awaiting the EPA's assessments; and

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[83] Transcript: 1124: 4-22.

(e) The PMRA then disregarded those assessments and thereby defeated any Canada-U.S. prospects for harmonization with respect to lindane.

98. These elements will be further discussed below in connection with each specific measure taken by Canada.

C. Canada's Measures in Detail

1. First Measure: Conduct of a Seriously Flawed and Delayed Special Review (Breach December 19, 2001)

99. The March 15, 1999 Notice announcing the Special Review, which cites unspecific environmental concerns with lindane but no toxicological or occupational concerns, requested no data or other information from lindane registrants, provided no procedures or schedule for the conduct of the Special Review, and provided no obvious way for affected parties to participate in the regulatory process, apart from an address that is given for "inquiries".[84]

100. Nevertheless, Chemtura Canada expected that the Special Review would entail a rigorous scientific process consistent with PMRA's mandate, as set out in its governing legislation. In the October 1999 exchange of letters between Mr. Ingulli, on behalf of Chemtura, and Dr. Franklin, on behalf of PMRA, it was understood that this review was well underway. Indeed, one of the express conditions agreed to in this exchange of letters was the completion of the scientific review by the end of 2000. While Canada has repeatedly attempted to dismiss the significance of this date, President Kaufmann-Kohler astutely observed that "it is not obvious [from the face of Mr. Ingulli's October 27th letter] that it is a target date". Rather, this letter – and Dr. Franklin's response – suggest exactly the opposite.[85]

101. PMRA only released its Occupational Exposure Assessment, which was ostensibly the culmination of its Special Review, in October 2001. If PMRA had completed a proper scientific assessment on lindane by the end of 2000, as it had committed to do so,

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[84] Joint Hearing Bundle, Tab 87.

[85] Transcript: 1091:25 – 1092:2.

Chemtura would have actively pursued its U.S. application for registration and/or tolerance of lindane for use on canola[86].

102. Beyond PMRA's failure to timely complete the Special Review, PMRA's Special Review was fatally flawed in process and end-result. Dr. Franklin claims that "the significance of worker safety should have been evident to [Chemtura], and I think that regulatory action having been taken in another country, it certainly is a flag, a trigger, that worker exposure, worker safety has been a concern."[87] Dr. Franklin's opinion can be contrasted to that of the Board, which found that PMRA had a positive obligation to advise Chemtura of the focus of its inquiry and review.[88] In other words, regardless of what information might be generally available in respect of reviews proceeding elsewhere, before other administrative agencies operating under different regulatory regimes, PMRA had a positive obligation to inform Chemtura of its focus. Its failure to do so not only evidences a lack of transparency and candour, but also necessarily led to a manifestly arbitrary and unjust result, in violation of Canada's duty to ensure fair and equitable treatment under NAFTA Article 1105(1).

103. The evidence also establishes that the discussion of occupational exposure which transpired between PMRA and Chemtura was with a view to finding reliable existing data on the subject, and not an indication of any substantive concerns about worker exposure. This is further proof of PMRA's disingenuous conduct in the circumstances. As Mr. Thomson testified on cross-examination, "they were interested in understanding the evaluation that went on with [U.K.] PSD",[89] and in particular "the use pattern of seed

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[86] Mr. Thomson affirmed this position on cross-examination: "Q. Sure. I just want to make sure that one of the reasons you say that Chemtura declined to pursue a U.S. tolerance was that the PMRA had already terminated all of Chemtura's Canadian registrations; is that correct? A. Correct." (Transcript: 291:17-21.)

[87] Transcript: 1052:7-11.

[88] Joint Hearing Bundle, Tab 275, para. 113.

[89] Transcript: 285:6-12.

treatments in Canada and the difference between how those were used in the U.K. versus Canada".[90] Mr. Thomson elaborated on this response in re-direct:

> "Q. ... On the different issue about the concern for worker exposure, which the debate was about whether PMRA had communicated that or communicated an adequate degree of concern to the company about worker exposure, and you clarified that it was because of different use patterns between Canada and other countries.
>
> A. And other countries.
>
> Q. Could you explain what those differences in use patterns might be and how they might affect a concern about worker exposure or worker exposure data?
>
> A. Well, certainly. I mean, the risk associated with the use of any seed treatment product is really if it's the same active ingredient depends on the exposure. Seed treatment is the application of a particular pesticide to a seed, and there is many, many ways to do that. In the U.K., they had particular equipment that was mechanical in nature, was open, and generated a lot of dust in the process. It was very unlike the kind of closed systems that were used in Canada at the time, so the comparison of the two in terms of the exposure was vastly different, and it was really not possible to use the risks associated with the exposure we would get from a rather open and mechanical system to the ones that we had in Canada at the time. So, that's the concern about whether, you know, you can use that data in one application to infer anything in another.
>
> Q. So, could I summarize your statement by saying it was concern about the reliability and usability of data and not concern over worker health, for instance?
>
> A. Right. Right."[91]

104. This was the context for the identification of "worker exposure" concerns in Mr. Ingulli's October 4, 2000 meeting notes, as Mr. Thomson explained in response to President Kaufmann-Kohler's query:

> "THE WITNESS: Just on the particular, the top one highlighted here, that the concerns again are about the use patterns and not the worker exposure. There is obviously an interest in worker exposure, but I don't believe that the interpretation is the concerns are the worker exposure. It's the use patterns for seed treatment.

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[90] Transcript: 286:4-9.

[91] Transcript: 327:14 - 328:17.

> PRESIDENT KAUFMANN-KOHLER: But how should we understand this? It says worker exposure, so how do we understand that does not mean worker exposure?
>
> THE WITNESS: I'm sorry. Dr. Franklin indicated that worker exposure area that the PMRA had some concerns about because the use pattern for seed treatments in Canada often differed. So, what the concern was was that the use patterns were different and that evaluating worker exposure in one scenario was different than the other, and so using that data was what the concern was."[92]

105. At a meeting with PMRA six months before the conclusion of the Special Review, notes of attendees from CIEL and Chemtura independently indicate the political pressure that was of such concern to PMRA in relation to the lindane file.

106. Turning to the risk assessment itself, the evidence shows that the quality and objectivity of the assessment is highly suspect, and influenced by pressure from external sources. Again, this illustrates that the process having ultimately led to lindane's deregistration was both improper and discreditable, and thereby contrary to Canada's duty to ensure fair and equitable treatment under NAFTA Article 1105(1). Dr. Franklin testified that PMRA was under "enormous pressure from all sectors. The environmental groups figured we were too easy. We did things too quickly. Growers figured they never … saw the same products as were in the U.S. which, in fact, was not untrue. In many instances they simply weren't sent into Canada, and industry felt that gains should be made and time should be faster."[93]

107. It is clear from Dr. Franklin's testimony, despite the impression that Canada would *like* to leave in respect of the scientific process[94] and the process that the PMRA engaged to review lindane in particular, that the "[s]cience is not so cut and dry".[95] It involves the exercise of judgment, which may be influenced by the broader politics surrounding a

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[92] Transcript: 288:19 - 289:9

[93] Transcript: 1081:20 – 1082:1.

[94] According to Mr. Worgan, "the science will lead you where the science goes" Transcript: 651:6-7.

[95] Transcript: 1068:7.

pesticide.[96] In the case of lindane, the evidence shows that this judgment was exercised in a manner that ensured the demise of lindane in Canada.

108. PMRA relied on an out-dated worker exposure study, despite Ms. Chaffey's claim that PRMA reviews studies to determine whether they are reliable.[97] Canada's claims that Chemtura never offered a more recent study[98] ring hollow in view of the Board's finding that the Special Review, and in particular PMRA's focus in the Review, was not transparent. Rather than advise Chemtura of the unreliability of the study on record with PMRA, PMRA used data in a study submitted by Syngenta (formerly Novartis) in support of its Helix registration to conduct a "back-of-the-envelope" estimate of exposure risks:

> "Q. How come it was acceptable to PMRA--and I will ask you this in a nonleading way--to use the Helix more sophisticated study in reviewing thiamethoxim, but not lindane?
>
> A. Well, the lindane Registrants, first of all, never offered a study that was from a high-tech facility.
>
> And, furthermore, the PMRA did not ask for that study because we had actually done, although we were not--we could not formally use the Helix study in support of a lindane submission because of data protection issues, we did look at the Helix exposure numbers that came out of that exposure study, and we did a back-of-the-envelope calculation, and that calculation showed us that the exposure that we got, even with the high-tech facility, we still did not get acceptable margins for lindane.
>
> So, from our point of view, it would have been negligent for us to ask the company to have conducted a new occupational exposure study that we knew probably had very little likelihood of allowing the Registrant to continue registration of that product at the end of the day.
>
> Q. I take it that napkin wasn't filed in these proceedings?
>
> A. You're absolutely correct. It was not filed."[99]

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[96] Transcript: 657:21-24, 658:16-20.

[97] First Chaffey Affidavit, para, 29; Transcript: 479:7-21.

[98] Transcript: 481:21-22.

[99] Transcript: 481:23 - 482:24.

109. The reason offered for PMRA's failure to advise Chemtura is embarrassing: the proposition that it would be "negligent" of PMRA to invite a company to conduct a new occupational exposure study when the fate of its investment in Canada hangs on the very issue of occupational exposure is not credible, at the least. It is disingenuous – and indeed unfair and inequitable - when one considers that it was not "negligent" for PMRA to ask Syngenta to do exactly this with respect to the Helix exposure study, after the original study submitted was rejected by PMRA.

110. It is also astounding that a registrant involved in the Canadian pesticides market for decades and holding the most important registration for the treatment of one of Canada's largest crops was simply flicked away with a casual "back-of-the-envelope" estimate of potential risks posed by its products.

111. The safety factor employed by PMRA – which purportedly rendered a request for an updated study "negligent" – may be compared with the safety factor used by the EPA (3x) and the United Nations Food and Agriculture Organization ("UN FAO") (5x) in assessing occupational exposure risk associated with lindane.[100] Ms. Chaffey explains this differential by reference to PMRA's role as a "health regulator".[101] Yet, the EPA and UN FAO serve essentially the same function as PMRA, over their different jurisdictions.

112. The wide difference in approach taken by PMRA and the EPA to occupational risk is not only puzzling today, it was puzzling to the EPA then, particularly in view of the high level of harmonization between Canada and the United States in respect of pesticides regulation[102] ("U.S. and Canadian registration evaluation practices and standards are quite similar in scope, force and effect"). As the table (produced at the Hearing) comparing the two agencies' conclusions on lindane notes, "different studies used leading to vastly different results."[103] Given that PMRA elected not to conduct a Data Call-In

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[100] Transcript: 496:13 - 497:10.

[101] Transcript:497:20.

[102] Transcript 524:17 - 525:3; Joint Hearing Bundle, Tab 42.

[103] This table was to be added to Exhibit 21 to the Second Costa Report, Joint Hearing Bundle, Tab 197.

and to rely on the EPA's database, the only explanation for this comment is a conscious choice on the part of PMRA to rely on an out-dated study which facilitated the application of a high safety factor and a non-acceptability determination.

2. Second Measure: Prohibition on the Planting of Treated Seed after July 1, 2001 (Breach July 1, 2001)

113. That the industry was aware of fines for planting treated canola seed after the July 1, 2001 deadline date for treating seed with lindane-containing products was confirmed by the testimony of Mr. Alfred Ingulli:

> "Q. Mr. Pettigrew is a PMRA enforcement officer; you agreed? Or Compliance Officer.
>
> A. Compliance Officer, yeah.
>
> Q. Okay. So, the threat is not coming from the PMRA Compliance Officer, is it?
>
> A. The threat is attributed to Mr. Reid, I believe, who you're not going to be producing as a witness. He was the Compliance Officer who made the comment that fines could be levied up to $250,000, is my understanding.
>
> Q. You're aware that, when asked what Canadian legislation provided, Mr. Reid explained what that legislation provided?
>
> A. I'm not aware--I wasn't at the meeting where he made these statements. I don't know that the question was put to him, "What is the law?" I don't know in what context the threat of fines came up.
>
> Q. All right. Why don't we look at five, point five, on this e-mail. Already at point two you see they will be focusing on making sure there are no stockpiles of product and that nobody is intentionally treating and stockpiling seed for 2002.
>
> So, you don't have any reason to disbelieve that this is what PMRA was actually focusing on?
>
> A. I'm sure that the PMRA was interested in having people, especially the manufacturers, not overproduce and stockpile for use beyond the cut-off date of July 1, 2001, so I would agree.
>
> Q. Right.
>
> And number five of this e-mail, the 200,000-dollar number probably came from someone asking the question, "What are the potential fines that PMRA could administer for a violation of the PCP Act?" He felt that the 200,000-dollar number was put out as a motivation to get lindane used up and is not realistic.

> And Mr. Vaughan goes on to say, "My general feeling from talking to Ross is that there won't be a big problem if everyone does their best to get the lindane used up. There may be a problem if it looks like anyone is stockpiling product or treated seed."
>
> So, in fact, Chemtura knew at the time, it was quite clear that PMRA wasn't going to take enforcement action unless seed treaters or growers deliberately hoarded or stockpiled lindane seed treatment past the date of the phase-out?
>
> A. It appears to me from reading number five that Mr. Pettigrew was speculating. He says the number 200,000 probably came from someone asking the question. He wasn't at the meeting. And while I don't doubt this is what the man said, I think he's speculating on what went on at that meeting.
>
> Q. And you weren't at that meeting, either?
>
> A. I wasn't at that meeting, either.
>
> And again, I repeat, in my view, it doesn't matter what Mr. Pettigrew said--thinks or what Gustafson thinks. It's--what matters is what the growers and the associations that represent the growers think, and they think there is a threat of fines, and that resulted in substantial reduction in the sale of Lindane Products specifically attributable to the threat of fines because the seed companies did not want to wind up at the cut-off date with an inventory of treated seed that they would then have to dispose of as hazardous waste."[104]

114. Sales were coming up for the 2001 year. If anyone was caught with a lindane-treated seed after July 2001, they would be penalized with a substantial fine. Would treaters treat, or growers retain or plant, a seed with lindane under these circumstances? Unlikely. PMRA's conduct in this regard was blatantly unfair, and the impact on the Investor's sales was substantial and immediate.

3. Third Measure: Cancellation of Chemtura's Lindane for Canola Registrations (Breach February 11, 2002)

115. According to the *Pesticide Control Products Regulations*, a registration can be cancelled or suspended where the Minister has safety-based concerns. Alternatively, a registrant can choose to discontinue the sale of a product and the registration shall be continued to allow any stocks of the product to be substantially exhausted through sales, subject to any conditions imposed by the Minister. In this case, PMRA told registrants that they could

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[104] Transcript: 239:25 - 242:14. See also Joint Hearing Bundle, Tabs 159, 175, 182, 191, 219, 221, 222.

either "voluntarily" withdraw or that their registrations would be terminated through suspension. As Chemtura Canada did not agree to "voluntarily" discontinue use of its Lindane Products, it was not granted the right to a phased-out termination of lindane use as provided for in section 16 of the Regulations.

116. PMRA's "concerns" were evidently not so significant that the immediate termination of the registration was required. Instead, provided that registrants agreed to PMRA's terms, the product could be used for another two years. Since Chemtura Canada did not agree to those terms, however, PMRA terminated its registrations immediately.

117. In questions from opposing counsel and from Arbitrator Crawford, Ms. Sexsmith for Canada admitted that Chemtura could have been afforded a phase-out for its non-canola lindane products, but was not:

> "ARBITRATOR CRAWFORD: It would have been possible under Section 20 of the Act for the Minister to de-register the product on terms and conditions, which could have allowed a phase-out.
>
> THE WITNESS: But that's right. This is what I'm saying, but it would have been canceled or suspended.
>
> ARBITRATOR CRAWFORD: Yes.
>
> THE WITNESS: Which is equivalent to the word "ban." And frequently, if not always, companies like to avoid that word because it has negative connotations. If they come in and withdraw it, there is no banning.
>
> ARBITRATOR CRAWFORD: You have explained why you offered the Section 16 to the Registrants; I can see that entirely. What you haven't explained is why you didn't consider—
>
> THE WITNESS: Mm-hmm.
>
> ARBITRATOR CRAWFORD: --the Section 20 possibility of a phase-out for the Claimant, and I asked whether the Claimant had asked for that phase-out.
>
> THE WITNESS: And they did not. Nowhere in the correspondence is it in evidence. They said that they disagreed with the reason for termination or that it needed to be terminated, but they didn't provide that.[105]"

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[105] Transcript: 858:14 – 859:11.

118. The immediate termination of Chemtura's registrations was a wholly arbitrary act designed to punish Chemtura for refusing to go quietly and accept without question a highly suspect review of lindane. Again, this was an arbitrary act, punitive in nature, particularly when viewed in the light of the Lindane Review Board's conclusions.

4. Fourth Measure: Cancellation of Chemtura's remaining Lindane Registrations (Breach February 21, 2002)

119. As a result of PMRA's actions, all of Chemtura Canada's lindane registrations were suspended. As such, Chemtura Canada could not sell certain of its Lindane Products after February 11, 2002, and could not sell any Lindane Product after February 21, 2002. PMRA terminated these lindane registrations without the right to phase-out use, notwithstanding that Chemtura Canada had provided the sales and inventory information requested by the PMRA in order to be granted this right. PMRA gave as its reason that Chemtura Canada had stated in providing the information that it was not concurring with the proposed "voluntary" discontinuation and that Chemtura Canada did not provide the required form letter of "voluntary" discontinuance by the January 31, 2002 deadline.

5. Fifth Measure: Failure to Accord Expedited Treatment to Gaucho CS FL (Breach: March 27, 2000 – July 17, 2002)

120. Chemtura in its evidence has described in detail PMRA's discriminatory treatment of Chemtura's replacement product Gaucho CS FL *vis-à-vis* Syngenta's product Helix. The testimony at the Hearing only served to underscore the extent of the discrimination.

121. The evidence and testimony on the registration of Gaucho CS FL on the one hand and Helix and Helix XTra on the other hand is very technical. In particular, the evidence and testimony regarding the dates and conduct of PMRA's review of those products is very lengthy and involved. For this reason, the detailed analysis of this issue has been set out in the Appendix to this Post-Hearing Brief. Notwithstanding that this section has been placed in an appendix, the Tribunal is urged to review that analysis closely to fully understand the extent to which PMRA unnecessarily and, indeed inexplicably, thwarted the timely registration of Gaucho CS FL at every turn, while pushing Helix and Helix XTra through the registration at breakneck speed.

122. Although much of the detail is set out in the Appendix to this Brief, the following is a brief summary of the PMRA's conduct in its treatment of the registration of Gaucho CS FL.

123. As part of the Conditional Withdrawal Agreement, the PMRA agreed to work with registrants to facilitate access to lindane replacement products.[106] Notwithstanding this, Canada's position at times in this proceeding appears to be that the PMRA made no commitment whatsoever with respect to the registration of lindane replacement products.[107]

124. Not only did PMRA not provide any expedited treatment of Chemtura's replacement product Gaucho CS FL, but in fact PMRA discriminated in its registration of Gaucho CS FL as compared to Helix.

125. Chemtura's first registered non-lindane insecticides for use on canola, Gaucho 480 FL and Gaucho 75ST, were not commercially viable over the long-term because Canadian canola growers were accustomed to using an all-in-one fungicide-insecticide. These products were stopgap products while Chemtura was working on its intended competitive product, Gaucho CS FL, in order that Canadian canola growers would at least have something to use to control flea beetles. Further, by having the insecticide-only Gaucho products registered earlier, this should have simplified the registration of Gaucho CS FL.[108]

126. Since Chemtura was conditionally agreeing to the withdrawal of its lindane products for use on canola, Chemtura might reasonably have expected to have the registration application for its replacement product Gaucho CS FL treated at least as favourably as the Novartis application for Helix, since Novartis had no lindane products and was not giving up anything in the withdrawal process; indeed, its product was obtaining a tremendous boost by the elimination of its only real competition, lindane.

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[106] See, e.g Joint Hearing Bundle, Tab 65.

[107] First Sexsmith Affidavit, para. 46.

[108] Transcript: 356: 3-13.

127. However, the Gaucho CS FL application was accorded no preferential treatment whatsoever. At the time of its submission for registration, the two fungicides and one insecticide comprising Gaucho CS FL were already registered in Canada, and were already registered for use on canola. The Gaucho CS FL formulation was identical to Vitavax Dynaseal, except with the lindane replaced by imidacloprid.[109] Under the circumstances, the registration of this product should have proceeded quickly even in the absence of a commitment for accelerated review.

128. At the time of the submission of Helix for registration, the insecticide thiamethoxan had never been registered in Canada at all and two of the three fungicides it contained had never been registered in Canada for use on canola.[110]

129. Given that Gaucho CS FL was essentially a new formula of already registered constituents, it was treated as a Category B submission which should have taken at most 11-12 months. Even if one accepts Canada's position that there were delays as a result of Chemtura, it should have taken perhaps 15 months. PMRA took 28 months to register Gaucho CS FL.[111]

130. As a result, Gaucho CS FL finally received registration on July 17, 2002, too late for the 2002 planting season, let alone the 2001 season.[112]

131. Helix, with the new insecticide and new uses for the two fungicides, was treated as a Category A submission, the most complex and time-consuming category. A regular Category A submission would take 28 months. Because of the way the Helix application proceeded (i.e., with PMRA rejecting the initial application, requiring a new occupational exposure study, and the submission of a second application), it should have taken 48 months.[113] PMRA approved Helix in 24 months. In fact, Helix XTra was registered in 24

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[109] First Kibbee Statement, paras. 9, 16.

[110] First Kibbee Statement, para. 27.

[111] Memorial, para. 229.

[112] First Kibbee Statement, para. 23.

[113] Exhibit D1 to First Kibbee Statement.

months and the lower rate Helix was registered in less than 3 months.[114] Helix and Helix XTra were registered in November 2000, in time for the 2001 planting season and allowing them to be well-established in the market by the 2002 planting season, when seed could no longer be treated with lindane.

132. The alleged deficiencies in the Gaucho CS FL application as stated in Canada's submission were trivial and were timely addressed by Chemtura. Further, the reason that Chemtura did not initially file such information as efficacy data at the time of the application was because Chemtura, in reliance on the CWA, and in light of the fact that all active ingredients were already registered for use on canola, did not expect PMRA to require this data, since the efficacy was already known and approved by PMRA.[115]

133. Further, there were numerous instances where PMRA took extraordinary amounts of time to review very basic data and filings. When an application is filed, PMRA compares the submission against a checklist to see whether all of the required elements have been included. PMRA's standard for such a review is 45 days, although it should take much less time for a simple submission like Gaucho CS. It took PMRA 118 days to compare a submission consisting of a small stack of paper against its checklist.[116]

134. By contrast, PMRA processed the Helix submission at incredible speed and ignored its own policies and made repeated concessions to Syngenta in order to quickly approve Helix. The initial screening of the Helix submission, which was much more complex than the Gaucho CS FL submission, took 23 days.[117]

135. Each stage of the process was marked by similar disparities.

136. Incredibly, during the 118-day basic checklist review of the Gaucho CS FL submission in the spring/early summer of 2000, the original Helix submission had been rejected by the

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[114] Exhibits SC-74 and 78 to Second Chalifour Affidavit.

[115] Transcript: 387: 1-3.

[116] Transcript: 384: 3-22.

[117] Exhibit SC-74.

PMRA as a result of concerns about the worker exposure study filed with that submission. As a result, the only insecticide-fungicide product being considered by the PMRA that (in theory) could have been available in time for the upcoming 2001 season was Gaucho CS FL. One might have thought that the PMRA would be devoting resources to the Gaucho CS FL submission, given that the industry had no practical alternatives to lindane for 2001. As is now known, of course, Helix was available in time for the 2001 season, because the second Helix submission, filed on September 8, 2000, passed every level of PMRA review including label review by November 27, 2000. From submission to registration was 79 days. The PMRA was barely two-thirds of the way through the checklist review of Gaucho CS FL in 79 days.[118]

137. As described in the Appendix, all of the Level B deficiencies were addressed by Gustafson by September 7, 2000. PMRA should have begun a full and proper Level C review at this stage. Gustafson filed the product chemistry and acute toxicity studies on October 26, 2000. If the initial absence of these studies had been a Level C deficiency (and there is no evidence that PMRA had ever advised Gustafson that the absence of these studies were a deficiency), this issue was in any event resolved by October 26, 2000. Notwithstanding that the absence of these studies was not a Level B deficiency, PMRA put the submission through a second Level B screen.

138. In response to a conference call on November 23, 2000 about further deficiencies, Gustafson replied on November 30, 2000. PMRA then did not advise Gustafson of any further issues until February 15, 2001 – 77 days later – when it sought certain clarifications. In response to that letter, Gustafson addressed all of these issues six days later on February 21, 2001. Since this was a matter of clarifications, not data deficiencies, it should not have had any impact on the review.

139. Notwithstanding this, the PMRA put the submission through another Level B screen and Level C review.

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[118] Exhibit SC-78.

140. Eventually, the submission was placed in Level D Review where one or more reviewers did not start work on the submission for 360 days. Once that one or more reviewer began work, the submission passed Level D in 20 days.

141. Mr. Kibbee in his First and Second Statements identified numerous other concerns regarding the approval of Helix/Helix XTra, namely the permitted tail-gating by the PMRA, the permitted use a green seed colouring by PMRA, the failure by PMRA to ensure that the lowest effective rate of fungicides was used, the failure by PMRA to include a ground-water warning on the label, and the numerous, novel risk mitigation measures that were accepted by PMRA in respect of Helix/Helix XTra. Since these have been covered in those written Statements, they need not be repeated here.

142. The critical point for the Tribunal to understand is that PMRA processed the Helix/Helix XTra submissions incredibly quickly, without following its own procedures, and making numerous concessions to ensure its rapid approval. In the case of Helix, in order to meet the demand for an alternative to lindane, PMRA cut corners and conducted an incomplete scientific review, and granted Helix a temporary registration, notwithstanding the numerous deficiencies in the registration application.

143. Meanwhile, for Gaucho CS FL, PMRA impeded its approval at every opportunity. This is not the conduct of a regulator acting properly within its mandate, and it is clear when one reviews the evidence that the disparity of treatment must be considered to be intentional.

6. Sixth Measure: Conduct of a Seriously Flawed Re-evaluation of Lindane (Breach ongoing)

144. The testimony of Mr. Peter Chan for Canada clearly indicated the continuity in the role of PMRA's management, and particularly that of Mr. John Worgan, in perpetuating the same fatal biases that were identified by the Lindane Board of Review in the Special Review and in turn in PMRA's re-evaluation of lindane. The Science Management Committee of PMRA, on which Mr. Worgan sat:

- supervised the re-evaluation of lindane:

Q. "So, the re-evaluation of lindane is part of the Science Management Committee's mandate, isn't it?

A. Yes. It's no difference than any other submissions that go through the process within the Agency.[119]

- approved the re-evaluation of lindane:

Q. But at some point when the REN is in preparation or concluded, it goes to the Science Management Committee, does it not?

A. It's at the end of the evaluation process.

Q. Right.

A. When the health evaluation scientists came to a conclusion or a decision at the time from the health perspective or from the Environmental Assessment perspective. They will then combine and go through the Science Management Committee.

During that process of the evaluation process to the Science Management Committee process, if I understand your question correctly, John was not involved in that process.

Q. No--well, that wasn't my question, but your expansion is helpful.

At the conclusion of the REN process, it would go to the Science Management Committee, I will just come back to that, all right, and the Science Management Committee operates on consensus, so any of the individuals who comprise that Committee can prevent the approval of Re-evaluation Decision; isn't that right?

A. Possible, yes."[120]

- had decisional authority on the manner in which risk assessments, including lindane's, would be conducted:

"Q. No doubt that's part of their role, but that's not how I read it here where it says, for example, "make decisions on expedited reviews, on deviations to submission management policy." They make decisions. They don't make recommendations.

A. That's correct. They make decision on the final outcome of that, but they do make recommendation if they say there is something that is not consistent. Let's say health evaluation Directorate as an example. We may be conducting an

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[119] Transcript: 547: 2-5.

[120] Transcript: 548:8 – 549:4.

> assessment and then we will submit it to the Science Management Committee. They will look at the process to ensure that the decisions that were made have considered all the criteria and all the--take into consideration all the policies that occur and are in place.
>
> Q. I understand that, but as far as their mandate goes in their terms of reference, they're also empowered to make decisions?
>
> A. They are.
>
> Q. Thank you.
>
> A. They are."[121]

145. More pointedly, Mr. Worgan in particular was specifically mandated to participate in all science discussions including the re-evaluation of lindane:

> "Q. Right. Right.
>
> And in that capacity, he will or did definitely, according to the Terms of Reference, participate in the discussions and in the final decision?
>
> A. Right. He will be bringing his history and his--well, not the history, sorry. He will be bringing his expertise as any other submissions that comes in for REN from whether it is from the premarket authorization request or for re-evaluation decision.
>
> So, all the Director Generals are involved in the same capacity at the SMC. So, that's the way--and we just tried to have that discussion in SMC to make sure that the decision are consistent throughout from this perspective of whether it's the health, or environment of value or reevaluation with some of the existing chemicals that may link to another chemical. We brought that integrated sort of thinking into making decisions."[122]

146. The same individual who was involved in the Special Review condemning the continued use of lindane and who appeared before the Board, supervised, participated in and approved the re-evaluation of lindane that reached the same negative conclusions. The objectivity of lindane's re-evaluation by PMRA is patently negated by Mr. Worgan's key role in that process. These circumstances give rise to the inference that the re-evaluation

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[121] Transcript: 550:10 – 551:4.

[122] Transcript: 556:15 – 557:4.

of lindane, begun in 2005 and ongoing today, had its condemnation as a foregone conclusion.

147. This was confirmed by the testimony of Mr. Worgan himself. In the re-evaluation, PMRA determined to reject the Board's recommendation to lower the uncertainty factor used in the Special Review. PMRA gave no reasons and conducted no further analysis to address the Board's concerns regarding the uncertainty factor. It merely continued to use the same impeached factor. This, together with the deliberate use of dated, inapposite occupational data, permitted PMRA to affirm its original Special Review finding of unacceptable occupational exposure risk:

> "A. In the case of the Special Review, the exposure assessors did take a look at the Helix Assessment at that time and did a quick calculation to see whether or not under those very strict conditions of use that only existed in a very limited number of plants in Canada, would we achieve acceptable risk from an occupational point of view, and the response was, no, that it did not. However, we would not be able to, you know, use that to support registration.
>
> But an examination of that data was looked at, so, you know, to--even if we had access to that data, it would have resulted in unacceptable risk for the Assessment.
>
> Q. And that's because of the risk factors that the PMRA determined in the Special Review?
>
> A. That would be one of the considerations, yes.
>
> Q. If the risk factor had changed and the Helix study or a study that was--reflected the same practices as the Helix study had been used--
>
> A. Possibly.
>
> Q. Possibly.
>
> A. Theoretically.
>
> Q. The outcome might have been different?
>
> A. Yes, you know."[123]

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[123] Transcript: 576:11 – 577:7.

148. All that the re-evaluation confirmed in relation to occupational risk was that the same data applied to the same arithmetic yields the same result.

149. In the Investor's submission, PMRA's predetermination of the outcome of lindane's assessment in the Special Review and in the Re-Evaluation is exemplified by Mr. Worgan's evidence and testimony in these proceedings:

- invoking the precautionary principle in defence of the deregistration of lindane in affidavits while confirming that the precautionary principle was neither applicable nor applied:[124]

- positioning the re-evaluation as a bona fide scientific process, while in fact, planning only to substantiate the flawed Special Review finding:

> "I'm suggesting to you or asking you to confirm that the reason that the PMRA decided to conduct a re-evaluation was because of these proceedings?
>
> A. Which proceedings?
>
> Q. The proceedings that I'm asking you these questions in right now. It says here on this document, "The timing and substance of the response," in the middle paragraph. Do you see that?
>
> A. Right.
>
> Q. "Of the response to the Review Board Report could have impact on a NAFTA Claim." That's us here today.
>
> A. I think, you know, that was a consideration that would be addressed at this particular very senior level of Health Canada, but the--you know, we had asked the Board of Review for recommendations. We received some recommendations that we took very seriously, and we decided that it would be--that we would actually, you know, undertake a follow-up review in light of that.
>
> So, you know, we had those recommendations. We looked at them. We'd asked for the advice. We took them seriously and implemented them. So, that was really the motivator here. You know, this is, you know, just background information basically with respect to considerations.
>
> Q. Right. Okay. Thank you for that. I'm going back to Exhibit JW-61.

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[124] Transcript: 758:23 -580:15???

A. JW-61? Okay.

Q. That's the Science Management Committee.

A. Right.

Q. On the second page of that. It states in the third paragraph on that page, "The PMRA has consulted with the Trade Law Bureau and legal counsel to assess the impact that the next steps of re-evaluation could have on the Registrant claims to the Federal Court and the NAFTA Tribunal. The recommendation of both the Trade Law Bureau and Justice Canada is to complete the Assessment of Lindane."

Now, it seems to me if they had to recommend to you complete something, that there was some question as to whether you would complete something.

A. No. Actually, you know, as we state here, the intent was to inquire with Chemtura and the other Registrants to see whether or not they were interested in pursuing reinstatement of products in Canada. If they were not, in light of, you know, the decision in the U.S., then, you know, there would be no need to proceed. It was just that, you know, given that this had happened in the U.S., we wanted to inquire with respect to, you know, what the intentions were of Chemtura.

Q. I appreciate that, and there was a reference to that on the prior page, but here it says the recommendation is to complete the Assessment, period.

A. Yes. But we were not at that time, you know, intending on, you know, stopping the re-assessment that eventually was finalized in the REN. It was just in light of this decision in the U.S., we said, well, you know, maybe we should phone Chemtura and find out what their intentions are. That was the only reason why we had this discussion at the Science Management Committee.

Q. Oh, because this gives a different reason in the next sentence where it says, "This would clarify/substantiate the position taken by the PMRA in 2001." That presumably is the Special Review. "And support the government's position in Court."

That seems to be the reason that you're giving here to complete the Assessment.

A. No. The Assessments are, you know, done, you know, to determine the acceptability in terms of risk, both health and environmental risk of products, and that's really the basis for continuation of the review. It wasn't, you know, to, you know, support our government position in Court. We had committed--we had committed to, you know, undertake a follow-up review, and that's something that we were pursuing. In light of this decision in the U.S., we were just going to inquire with respect to what the intentions were of the Registrant. And we decided on the basis

of a very brief discussion that, no, we will obviously, you know, continue and finalize the review.[125]"

- testimony before the Board of Review in relation to the adequacy of the Special Review comment period in contrast to PMRA's then-current practice:

"Q. "The Board finds," I'm reading from that paragraph, "that the comment period afforded to Crompton once PMRA completed its Risk Assessment was inadequate," so the Board disagrees with you.

A. They felt that it should be longer than 30 days.

Q. Right. In other words, the Claimant complaining that it was too short was backed up by the Board.

And then in your Paragraph 169 of your first Affidavit, like I just read, you said the period granted was consistent with that use for other re-evaluations, but the Board says in the last sentence, "In his evidence John Worgan of PMRA himself admitted that it was unusual for PMRA to come to a decision so quickly and without adjusting its findings at all after comments from Registrants."

A. Unusual in that over time we did, you know, adjust the comment period, so now that it is in the range of 45 to 60 days instead of 30 days.

Q. Well, you have extended it?

A. Yes.

Q. So, it used to be--it used to be shorter?

A. It was shorter at this time, in that, you know, our re-evaluation activities began probably in earnest around 2000.

Q. Sure.

A. We did a limited number of reevaluations initially, but some of them did include things such as chlorpyrifos and diazinon, and we were also working on the tributyltins at that time. For these, for the residential uses of chlorpyrifos, as we were proceeding with our re-evaluation, we determined that there were risks of concern for children and some homeowner risks due to the use of chlorpyrifos, so we took quick regulatory action and, you know, had a relatively short comment period with Registrants who voluntarily discontinued their products as good product stewards.

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[125] Transcript: 572:14 - 575:12.

Q. Thank you, but I'm going back to Paragraph 120. At Board of Review, you said that was an usually short period; isn't that right? Am I reading that correctly?

A. Yes, you are. Yes."[126]

- invocation of urgency of its "serious concerns" in the termination of the Investor's lindane deregistrations, while permitting a lengthy phase out period for other lindane registrants:

"Jumping ahead to Paragraph 171, and there I think--well, confirm for me or correct me, you're giving reasons as to why that comment period after the Special Review was so short, you say, it must also be remembered that this was a comment period relating to a special review, where the PMRA had reason to believe that continued use of the product could lead to damage to human health and the environment.

A. Right.

Q. So, that's sort of an urgency appeal that you were making there; is that right?

A.. That was part of the consideration because a special review is triggered by specific concerns. In the case of lindane, based on that Risk Assessment, we had significant serious concerns with respect to worker risk.

Q. Hence, this four-week comment period.

But--and we know that the Special Review led in fairly short order within a few months to the termination of Chemtura's registrations, but that if Chemtura had signed on the dotted line, as other Registrants did, it would have been allowed to continue to sell for two more years?

A. That was their choice.[127]

- trivialization or misrepresentation of the Board's conclusions regarding the Special Review's findings:

"Looking at Paragraph 184 of your first Affidavit now, where you say, of course the Board of Review would have taken a different approach on various points and had different evidence before it. My colleague, Cheryl Chaffey, reviews the PMRA's thoughts on various recommendations of the Board, and I therefore refer to the Tribunal to her evidence. What I

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[126] Transcript: 598:13 – 599:25

[127] Transcript: 600:2 - 602:22.

do note is that the Board of Review process was a discussion between scientists about a scientific process discussing the range of options open from a scientific point of view.

A. That's correct.

Q. The Board of Review never called in question the integrity of the PMRA process. Now, I'm going to ask you to turn again to Tab JW-30 in the Board of Review's Report and just by way of example point to Paragraphs 103 to 106, and ask you to either confirm or correct me. Those paragraphs--

A. 103?

Q. 103, 104, 105, and 106. They're a discussion of fairness, aren't they, they're a discussion of process, of adequate time to respond, of consultation. They cite a Supreme Court in Paragraph 104 of the Supreme Court of Canada decision.

And so, in fact, the Board of Review did call the integrity of the process into question, didn't it?

A. The Board of Review--what we are referring to here is the scientific process that we have followed, and the Board of Review did conclude that the--while they may have taken a different approach on some parameters in the Assessment that overall the scientific process and Risk Assessment was well within the range of acceptable. So, they did not criticize the process. They would have maybe come to a different--the process, scientific process, the Risk Assessment was well within what would be expected.

Q. I guess I'm going to a different point from that, where you say it was a discussion between scientists about a scientific process.

A. That's true.

Q. But it was--

A. It's the Risk Assessment process.

Q. It was also--it was--the Board of Review was more than that. It was a discussion about the overall deficiencies in fairness about the process, and that's why in Paragraphs 103 to 106 they talk about fairness. They don't talk about science and at risks and percentages or anything like that?

A. Not at that point, but this particular text is related to, you know, the scientific Risk Assessment that's in--described in Cheryl Chaffey's Affidavit."[128]

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[128] Transcript: 611:15 - 613:11.

- disregard of the Board's recommendations, without additional justifications for such disregard, in arriving at the same conclusions in the Re-Evaluation of lindane:

"Q. And as I explained to the Tribunal at the outset, you will have to go to that page that I gave you because that was inadvertently omitted from both of your affidavits, and it's Page 53 of the Lindane Review Board Report, and I'm looking at Paragraph 222.

A. Right.

Q. There it says that the Board is of the view that the additional 10X uncertainty factor is not justified.

A. Um-hmm.

Q. So, I guess I had a couple of questions coming off of that, and one is: Isn't it so that there is no better justification now in the re-evaluation than there was in the Special Review, because your reasons are the same and the Board found them unjustified, so the Board would equally have been constituted to review the Re-evaluation Note and come to the same conclusion: It's not justified. It's the Board.

A. Again, I'm not familiar with all of the details with respect to the Health Risk Assessment not being responsible for that. Here what they are doing is they are recommending and the recommendation was that we consider another uncertainty factor, safety factor for this particular issue. It is something that was looked at by our scientists that were involved in the re-evaluation follow-up review, in light of the new policy that we have with respect to uncertainty and safety factors; and also having looked at, I believe there was some data in the published literature and this whole issue of sensitivity was, you know, re-examined, and then on the basis of that new data, that new information, that it confirmed the need for a 10X safety factor to cover up sensitive subpopulations. So, you know, at that time they were recommending a different factor, but, you know, it has been looked at by our scientists in light of our new policy, in light of new information, and they've arrived at the conclusion that the 10X is justified.

Q. The Board made that recommendation to change--to change, not to just look at again. The Board, in Paragraph 222, went on to say: "It therefore recommends that PMRA consider an adjustment factor other than the 10X justification default." That is the recommendation. But the recommendation, I suggest to you, is based on their scientific rejection of the justification for the additional 10X. They did recommend a different one, quite so, but the reason they did that was, as you testified earlier in the conversation of scientists between scientists, that it wasn't justified, and the justification is a scientific evaluation of assessments of evidence leading to a logical conclusion.

A. Right.

I think, you know, you also need to look at, you know, the Board's conclusions regarding the toxicological Assessment and they are saying that the evidence is suggestive as opposed to conclusive, and they recommend that that be taken into account when considering the need for an additional certainty factor. This is Paragraph 217 of the JW-30. That is exactly what was done by our scientists in light of the safety factor policy document that we developed in consultation with a variety of stakeholders, including industry.

But again, you know, the details with respect to the actual application in this case and how they arrived at those questions would need to be directed to, you know, the scientists and Health Evaluation Division. But we did reconsider it. We, I believe, had new information, you know, that was gleaned from the published literature, and, you know, on the basis of that, deemed that it was fully supported, that there were, you know, clear indications of sensitivity, but, you know, that they would need to be, you know, discussed further with the health evaluation scientists. I manage the process. I'm not directly involved in the Risk Assessments per se.

Q. I guess what I would ask you to distinguish from, on the one hand, is policy.

A. Mm-hmm.

Q. And you testified, I think, that the PMRA changed its policy in regard to uncertainty factors?

A. The PMRA had a consultation process, a public consultation process, on the uncertain--application of uncertainty factors, safety factors in Risk Assessment. There are a few meetings, I believe, plus a document that went out the door for comments. We looked at those comments or it was looked at by the scientists in Health Evaluation Division, and the policy was finalized in light of those comments that we did receive. So, we underwent that policy review, you know, as one of the commitments that we had made as a result of the Board of Review Report that we received.

Q. But notwithstanding the establishment of this new policy, as I read your testimony and the Board of Review and the Special Review, the justification for the 10X factor on the testimony is the same, and yet the Board found that it wasn't justified. And so my assertion to you, and I would ask you to confirm, is that the Board would recommend again if it was assessing the REN for the same reasons--

A. Right.

Q. --that it be looked at again.

A. Right.

Q. You go back and use a different uncertainty factor.

A. Well, you know, again in terms of the details, I really can't speak to that, but they were saying that the evidence was suggestive at that time. I

> believe that--and you would need to verify with Health Evaluation Division, that they looked at the evidence again and found that it was certain as opposed to suggestive, but I really--I can't go any further than that with respect to the details of application of safety factors for specific chemicals having not been directly involved in the Risk Assessments for this chemical or any chemical for that matter. They applied their policy that they developed, you know, in consultation with a variety of stakeholders, including Chemtura's own industry association.
>
> Q. And ended up with the same result, ten--1,000X; right?
>
> A. In this case, yes, based on the evidence that they looked at."[129]

150. To date PMRA has not changed the key decisions by which lindane in its Re-Evaluation is headed to the same condemnation as it was in the Special Review. PMRA has maintained the same uncertainty factor multiplier of 1000, for the same reasons, and subject to the same objective denunciation as originally determined by the Lindane Board of Review.

151. This behaviour by Canada should come as no surprise. In its own internal documents, PMRA in August of 2006, (in other words well before any objective outcome could have been known), determined that completion of the Re-Evaluation of lindane would clarify/substantiate the position taken by PMRA in 2001 and support the government's position in court.[130] In cross-examination the sponsor of that document John Worgan denied the plain meaning of these words, but was unable to furnish a reasonable alternative explanation.[131]

152. Canada is also unassisted by Dr. Costa's evidence and testimony in respect of the REN. First, Dr. Costa conceded that he is not able to opine on process issues.[132] This applies to procedural issues as they arose in the context of the Special Review and the Re-Evaluation. The implications of Mr. Worgan's involvement in both the Special Review and the Re-Evaluation, including the impact that involvement may have had on the

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[129] Transcript: 616:11 - 620:20.

[130] Joint Hearing Bundle, Tab 302, Exhibit JW-61.

[131] Transcript: 574:20 – 575:12; 655:19 – 657:20.

[132] See Costa I, para. 112; Transcript: 1119: 18-20.

outcome of each process, are therefore beyond the scope of Dr. Costa's evidence or expertise.

153. Second, Dr. Costa's evidence on the substantive outcome of the Re-evaluation is also of limited utility. As Dr. Costa explained, a risk assessment is composed of both toxicity and exposure. Dr. Costa has no expertise in risk mitigation, which is determinative of exposure. While Dr. Costa claimed that even a safety factor of 3x would not have resulted in a determination of acceptable risks, he also acknowledged that he reviewed only a portion of the original studies relied upon by PMRA[133] and that he was not qualified to opine on the potential impact of risk mitigation measures which may bring the margins of exposure to an acceptable level of risk.[134]

154. Third, as previously noted, Dr. Costa in fact does not elucidate but contradicts the Board's conclusions where he asserts that the Board and PMRA's disagreement fall within acceptable parameters of scientific disagreement. The unjustified choices of PMRA identified by the Board by definition (the key uncertainty factor) are not within acceptable parameters – they are not justified.

D. Canada's Role in Precluding Issuance of a Tolerance by the U.S. EPA

155. Chemtura, in its evidence, has described in detail how it could have obtained a time-limited tolerance in the United States in early 2003. Such a tolerance would have obviated any concern about barriers to the importation into the U.S. of Canadian canola oil and meal grown from lindane-treated seeds. Chemtura's evidence further demonstrated that there was no obstacle to maintaining a tolerance until at least 2022.

156. The Tribunal has received extensive evidence on this issue, therefore it is only briefly summarized here.

157. Technology Sciences Group ("TSG") filed an application with EPA on June 5, 1999 requesting a tolerance for lindane on canola. In the case of canola, a tolerance allows for

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[133] Transcript: 1146: 12-15.

[134] Transcript: 1147:14 – 1148:10.

a maximum limit of residue in seeds, meal and oil obtained from the crop grown from canola seed treated with a pesticide.[135]

158. EPA responded that it would not issue a tolerance until it had completed the risk assessment that was being done as part of its Re-registration Eligibility Decision (RED) process.[136]

159. Mr. Johnson confirmed that TSG had requested a waiver from the requirement for a plant metabolism study and requested that EPA issue a time-limited tolerance. Mr. Johnson testified that a waiver was reasonable in this case, given the extensive metabolism data that EPA had in its files.[137]

160. Although EPA continued to require the plant metabolism study, Mr. Johnson testified that he believed that EPA could have granted a time-limited tolerance prior to having received this study:[138]

> "Q. Okay. Now, that means if it's the middle of 2003, that misses the early 2003 time frame that you said in your Witness Statement you expected a tolerance could have been issued by the EPA; is that right?
>
> A. Yes, it does, and that is based upon waiting for the metabolism study. When I wrote the Expert Report, I was thinking about the situation as we saw then, and we felt that if there was an action-forcing event on EPA that they would go back to what we asked for them to do originally, which was the time-limited tolerance. And one of the forcing factors could have well been the continued use of lindane in Canada because then you would have had the trade irritation again, and the EPA would tried to say, we've got to do something. Okay, let's do it and get the study later.
>
> As I said, they had plenty of metabolism data. It's not like they had nothing and they just needed this one."[139]

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[135] Transcript: 399:15 - 400:20.

[136] Transcript: 403:15- 404:8.

[137] Transcript: 406:21 - 407:15.

[138] Transcript: 410: 1-5.

[139] Transcript: 412:18 - 413:8.

161. Mr. Johnson confirmed this again later in his testimony:

> "Q. ... Do I take it to mean that when you say, "the only data request of any significance," it means there were other data requests?
>
> A. There were requests for three studies. Plant Metabolism was the study that related to the tolerance.
>
> Q. Right.
>
> A. With respect to the registration, they asked for some environmental studies. One was the Seed Leaching Study, and the other was Metabolism, Anaerobic Metabolism Study.
>
> Q. Right.
>
> And these were also prerequisites to getting a canola tolerance in the United States as well?
>
> A. Well, I think you have to look at the process. I mean, the routine studies that are normally asked are those kinds of studies, but the process is really flexible. And if EPA has some reason to do it, they can give you a provisional registration. They can give you a time-limited tolerance while you're doing the studies. It depends on whether there is a good reason for it or not. And had lindane still be used in Canada, in order to avoid a continuing trade irritant, they would have had a good reason to do something. And then as far as the registration goes, I suspect that North Dakota, given their previous behavior, would have been on EPA to give a registration so that they could have a level playing field, and that would have forced the EPA to do something.
>
> Well, the whole environment changed. There was no lindane use in Canada, so for them to rush through and do something would just have set up a reverse trade irritant, and therefore they sort of said, let's do this the regular way and just sit there and wait until they send the studies in because there wasn't that action-forcing situation."[140]

162. Mr. Johnson, again, concluded his testimony by reiterating that he would have expected a time-limited tolerance from EPA, if lindane had been available for use on canola in Canada:

> "Q. ... Now, I'm going to ask you--this is about that point and about the time-limited tolerance that you were apparently not getting an immediate answer from EPA on in terms of the line of questioning that I heard. If lindane--and I invite you to do a little bit of speculation, but if lindane had continued to be available as a seed treatment use in Canada, would

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[140] Transcript: 420:19 - 421:24.

you consider that the EPA might have focused more on whether it could grant a time-limited tolerance or this conditional registration? Would that have made a difference?

A. Yes, I do. I mean, I think I mentioned that several times, that if EPA had had something to force their action, then they would have done something different than if they had no pressure on them. So, if there was an imminent another trade problem, for example, then that with some pressure put on them to try to deal with that trade irritant, and they well could have--I don't know that they would have, but they well could have said, geez, this kind of changed the situation. Let's give them the time-limited tolerance so we don't get into all this back and forth with Canada again, and then they can provide the study, and then we will make a final decision.

So, the environment changed. That was the whole thing. There was a lot of impetus to do something when the petition was submitted and when the 2002 RED came out. But then after that there wasn't any lindane use in Canada anymore, so there wasn't much pressure to do anything. There was no trade irritant anymore. Guys in North Dakota were happy. I mean, they didn't have lindane, but neither did Canadians, so it was an even playing field again.

And so, there wasn't anything forcing EPA to do anything."[141]

163. Mr. Thomson similarly testified in re-direct examination that a time-limited tolerance could have been obtained from EPA in 2003, notwithstanding the on-going plant metabolism study:

"Q. You also discussed the metabolism study which the 2002 RED required of the company, and observations were made as to the length of time it took to obtain that metabolism study.

Were there alternative means available to the company to obtain a tolerance before that study was completed in 2005?

A. There were options available through the EPA to get time-limited tolerances, and we could have made the request for a time-limited tolerance, which would have allowed a temporary tolerance to be issued while the study was being conducted. It certainly was an option. It was not an option we pursued because the pressure for us to get that tolerance was, you know--had been diminished by the removal of our products from the Canadian market.

Q. Canada also took you to Paragraph 41 of your first Witness Statement, and I'll ask you to turn to that now. He asked you if it was your evidence or testimony, I believe the transcript will confirm, but that it was your

[141] Transcript: 449:23 - 451:2.

> evidence that you could have obtained a registration or a tolerance in time for the 2003 season, and you answered a yes, "and, frankly, I still believe that."
>
> I wanted to ask you if you could expand on your basis for belief.
>
> A. I believe that if we--you know, if we had established that as a priority because we were--because the Canadian market was still there, then we could have pushed to get a time-limited tolerance. We could also have accelerated the metabolism study. Granted, it takes time to grow the plants, but we would have either farmed that out or put more resources into getting that done if we felt that we needed to be in the market in 2003. Unfortunately, we were out of the Canadian market at the time, so the pressure to do that was obviously not there, and, you know, in dealing with all kinds of issues at the company, we have to establish some priority, so it was not a priority for us at that particular time.
>
> Q. Would it be fair to describe, then, that in the Canadian developments between the 2002 RED and the 2006 Addendum to the RED that that was--the developments in Canada were what were governing the company's actions in relation to the EPA?
>
> A. Certainly, certainly. I mean, the big driver in even getting U.S. tolerance was to be able to eliminate this issue with the--the trade issue with the border, and so we needed to have a registration in the U.S. But without any registration in Canada, where that was the larger market, the U.S. registration had significantly less value to us."[142]

164. Mr. Aidala confirmed that if there had been an "action forcing" event, EPA had options, notwithstanding that there may have been studies outstanding:

> "A. ... There were, as I say in my statement, some remaining outstanding data requirements [arising from the 2002 RED]. If there is a need for EPA, and I think Mr. Johnson may have referred to action forcing or something pressing, EPA would have some options to still find a path for it, notwithstanding those data deficiencies, and that's--well, that's I think what he was referring to at some point."[143]

165. And again:

> "The tolerance is possible in early '03 because if EPA had made some bridging assumptions, for example, in the EPA review process, they can include an additional what they call database deficiency uncertainty

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[142] Transcript: 330:9 – 332:3.

[143] Transcript: 1162:23 - 1163:4.

> factor. Those are the kinds of things EPA can use to act without--with a deficit in the database."[144]

166. Mr. Aidala is also clear that there is nothing in the 2006 Addendum that would have precluded EPA from continuing to allow a time-limited tolerance.

> "Q. ... Now, if you would not be able to say with certainty whether there is a risk of harm, you also can't say with certainty whether the EPA would or would have found an acceptable amount of risk that would enable it to issue a tolerance for lindane use in canola, can you?
>
> A. They could still issue a tolerance by saying--after explaining to the public why you're issuing this tolerance in light of whatever considerations, whether they raised them or outsiders raised them in public comments, and they would then say, for example, things that they could add, additional uncertainty factor, and they have done that in other cases, it's partly their evaluation of the data, partly their policy choices, but when I described in my statements a path forward, those are the kind of things that decision-makers would be faced with when they would be brought the full set of facts and analyses for determination."[145]

167. Mr. Aidala described the various options that EPA had to deal with a tolerance for lindane, pending the filing of the outstanding studies:

> "A. As I said in the questioning, there is a number of ways EPA can deal with data deficiencies. There is, in some sense, and almost in sort of casual parlance, EPA is never satisfied. There is always a need for more information. You'd always be improved, you'd always want more information. Why not? These issues are usually data rich, and you can see, as I mention in my statement, there is, I think it's a 40-page-plus bibliography, and there is a long two-page list of the EPA Assessments alone on this material going into the '02 RED.
>
> So, was there a fundamental bar in the '02 RED at that time frame, and the answer is, okay, they had data deficiencies, certainly for an import tolerance alone, plant metabolism, and for a registration they had a few other registration-related issues or data gaps. This is not unusual for many, many compounds. Again the example I mentioned before, this material called cyhexatin, it was neurotoxicity, and a metabolite that they hadn't characterized and some other things, and they allowed time, give it tolerance and allowed time to develop the data, number one.
>
> Number two, you would increase--and in that case, for example, they said there is a database uncertainty factor, an additional safety factor

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[144] Transcript: 1163: 14-19.

[145] Transcript: 1177: 5-20.

> because regulatory agencies are very typically, if you will, need to make decisions in various time frame, and so what EPA could have done here, for example, and especially because the risk cup was empty--I shouldn't say empty, fairly roomy, it was 17 percent of the risk cup after all their calculations because calculations included conservatism, including things like in light of the missing Plant Metabolism data, what they called a total--TRR. If you look in the heading of the tables, total radioactive radio residues, there's conservatisms built in that could lead to them to make a case if they were to approve a tolerance that would be the justification, that would be their rationale, that would be their explanation of how it met the standards of the law.
>
> So, they could add these extra safety factors if they needed to act more quickly, among other methods, or just allow a time-limited one because they were secure enough, given the risk cup calculations at that time.
>
> Q. So, in other words, the missing study, the missing Plant Metabolism Study or the one that only arrived years later after the '02 RED, was not an obstacle to the issuance of the tolerance that an alternative would have been what you've just described?
>
> A. Correct. There are alternative ways to get to a positive determination, that's correct, in my opinion."[146]

168. Dr. Goldman, Canada's expert witness, confirmed that there were options available to EPA where there instances of uncertainty:

> "Q. ... We heard earlier, though, that for in particular urgent or pressing situations, additional risk factors could have been built in or uncertainty factors could have been built in to take into account pending data, data that had not been completely received or analyzed yet by the Agency, and tolerance or time-limited tolerance could issue, pending receipt of that data, if--with those additional uncertainty factors for the data gap, I will say, the Agency didn't have a risk of concern.
>
> A. And sometimes that has occurred, and I think we heard a lot today about uncertainty factors. And it depends on what uncertainty factor might be imposed, whether that would quote-unquote work in terms of being able to issue the tolerance, and so how uncertain you are."[147]

169. Dr. Goldman also confirmed that an import tolerance was possible and she was aware of one instance where an import tolerance had been granted to address a trade irritant.[148] She

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[146] Transcript: 1180:1 - 1181:23.

[147] Transcript: 1190:20 - 1191:8.

[148] Transcript: 1193: 11-24.

also confirmed that she was aware of "five pesticides on the books with import tolerances".[149]

170. Arbitrator Brower, in his comments to the parties at the close of the Hearing, posed the questions: (1) on what basis is the Tribunal to choose between the evidence of Mr. Aidala and Dr. Goldman and (2) if the Tribunal finds both experts credible and is unable to choose between the two experts, what is the result?[150]

171. First, it is submitted that the evidence of the two experts is not directly contradictory. In particular, both experts agreed that an import tolerance was a possible option in the US. The difference in opinion relates to the likelihood of that tolerance being issued.

172. Second, in our respectful view, in the unusual case that the Tribunal finds each witness equally credible, it must nevertheless choose. There are other bases than credibility to compare, distinguish and prefer testimony. Chemtura submits that Mr. Aidala's testimony and evidence was simply more reliable than that of Dr. Goldman. Although Dr. Goldman's testimony was presented quite starkly in her written reports, it was clear from her oral testimony that there were several instances in her written reports where she had, with respect, over-stated certain facts.[151]

173. Third, Mr. Aidala, as well as Messrs. Thomson and Johnson, were clear that if lindane had been permitted to be used on canola in Canada, Chemtura would have more actively engaged in the EPA process and EPA itself would have been faced with pressures from both sides of the border. These factors would have completely changed the landscape for lindane in North America, the political pressure that Canada complains of, and the events that unfolded.

174. Indeed, it cannot be a just and equitable result for Canada, through PMRA, to have improperly extinguished Chemtura's lindane for canola business in Canada, setting up a

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[149] Transcript: 1238: 8-18.

[150] Transcript: 1404: 5-15.

[151] Transcript: 1194: 3-11; 1195: 14-17; 1203: 24-25; 1204: 1-8, 23-25; 1205: 1-15; 1207: 13-25; 1208: 1-6; 1214: 10-19; 1230: 1-25; 1231: 1-23; 1243: 22-25; 1244: 1-25: 1245:1-2.

chain of events whereby EPA no longer has any pressing interest in working with Chemtura to issue an import tolerance, and then to claim that since EPA did not issue an import tolerance, Chemtura has suffered no damages because the US market was not accessible.

175. All of Canada's decisions in regard to lindane were uniformly directed towards termination of its use. Whether in the choice of voluntary withdrawal as the only means to level the playing field with the U.S., the press releases it doctored for the Canola Council, scientifically unjustified choices it made in the Special Review, and the disregard of the Board's recommendations in the Re-Evaluation, it systematically and uniformly advanced the agenda first articulated on the record as "commitment to phase out all uses of lindane."[152] Bulletized indeed.[153]

176. There is no obligation on the Investor to establish that Canada formed a specific intention in bad faith to breach its NAFTA obligations in relation to the Investor. The treaty obligation is one requiring Canada to objectively adhere to a standard of conduct. Nevertheless Canada's actions, including its failure to adhere to its undertakings to Chemtura, the unfairness of its Special Review procedures as noted by the Board, and its patent anti-lindane bias in lieu of scientific objectivity throughout certainly support the inference that the breaching conduct was not innocent or unintentional.

177. This history is paralleled by Canada's postures in relation to the POPs Protocol. Canada was the hold-out in the LRTAP Convention in 1997-1998, insisting that lindane for seed treatment remain an acceptable use. Then, in 2009, Canada voted in favour of the inclusion of lindane on Annex A of the Protocol (notwithstanding the ongoing domestic lindane "re-evaluation"). The Protocol requires unanimity in order for a product to be placed on Annex A. Canada cannot point to this international development as some extraneous event: Canada, by its agreement to annex lindane, was a direct cause of this

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[152] Joint Hearing Bundle, Tab 41.

[153] Transcript : 1058 :24.

event, just as its support of lindane in 1997-1998 ensured that lindane could not be placed on Annex A at that time.[154]

178. Canada's conduct is the cause of the events leading to EPA's lack of interest in working with Chemtura to issue a tolerance, and should not be permitted to invoke the lack of a tolerance being obtained as a *post hoc* justification for its actions which negated the conditions under which a tolerance would have issued.

179. As the Tribunal knows, in 2006, Chemtura withdrew its U.S. registrations for lindane. Chemtura did so only because of PMRA's on-going actions against lindane and its refusal to act in accordance with the letter and intent of the Lindane Review Board's recommendations as well as because of the new availability of non-lindane alternative products for crops other than canola to fill the hole left by its deregistrations of lindane products. Again, Canada should not be permitted to benefit at Chemtura's expense, in terms of damages and causation, from its unlawful conduct.

180. As Mr. Ingulli testified to the Tribunal, the delayed Special Review, used to base the termination of lindane registrations, and the delays in having its shortcomings addressed, and the pre-ordained REN outcome "substantiating" the Special Review cumulated to destroy the Investor's lindane business and prevent its reinstatement.[155] The efforts by Chemtura to reinstate its Canadian registrations were the focus of the company's resources for obvious reasons, and absent a market in Canada, no purpose would be served by obtaining a tolerance in the U.S., as Canada had no further interest in trade issues surrounding lindane-for-canola use, and was now using regulatory "science" as a means to ensure that lindane would not be reinstated.

V. QUANTUM

DAMAGES BY MEASURE

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[154] Transcript: 1070:23 – 1073:5.

[155] Transcript: 248:22 – 249:21.

181. Table I below is a list of Canada's measures, the period of time during which they affected Chemtura, their consequences and the corresponding damages suffered by Chemtura as a result, all as set forth by the Investor's damages expert. The evidence of damages by impugned measure was requested by the President of the Tribunal[156] at the Hearing. For ease of reference, measures (b), (c) 2nd (e) below correspond to the first, second, third and fourth measures described earlier in this Post-Hearing Brief under Section IV.C.

Table I. Damages to Chemtura by Measure[157]

	Measure	Date	Consequence	Damages to Chemtura (MM US$ of June 30, 2008)
a	PMRA failed to complete the scientific review of lindane by late 2000 as it committed to do in the Agreement.	Oct 2000–Oct 2001	There are no damages from this measure alone. This measure is included in both b and e.	-
b	The scientific review ultimately completed by PMRA was highly flawed, biased as to the result and did not provide the parties with a meaningful right to participate in the review process.	Jan 2003-2022	Canada terminated Crompton's lindane business for canola and mustard. (Damages arise from Crompton's and Gustafson's canola businesses).	[***]
c	PMRA misinformed canola growers on the true meaning of the July 1st deadline, by telling growers that canola seeds treated with lindane purchased before July 1st, 2001, could not be sold or planted after that deadline.	Jul–Dec. 2001	Canada prevented Crompton from depleting its inventories of lindane products for canola by July 1st, 2001.	[***]
d	PMRA failed to expedite the registration of Crompton's lindane-substitute products as it had committed to do.	2001-2003	Damages from this measure alone are not assessed. In the but-for scenario, lindane registrations are reinstated and Crompton's (and Gustafson's) substitute products do not have a significant market participation. PMRA's delays in registering Gaucho CSFL frustrated Chemtura's ability to mitigate damages arising from lindane product terminations.	N/A
e	PMRA deregistered the remainder of Crompton's lindane products registrations in February 2002.	Feb. 2002–2022	Canada terminated Crompton's lindane business for non canola crops.	[***]
	Total Damages			**78.6**

[156] Transcript: 1339: 7-22.

[157] LECG Exhibit 4, LECG Tab 31.

182. In the but-for scenario used to calculate Chemtura's damages, Crompton and Gustafson would return to manufacturing and marketing lindane products, thus leaving little competitive room for lindane replacements (such as Gaucho CS and Helix) in the marketplace.

Total Damages by Year, Period of Time and Business Line

183. During the Hearing the Chair inquired about any differentiation between historical and future damages to Chemtura.[158] Figure I below presents total annual damages suffered by Chemtura. In short, Canada's measures deprived Investor of on average US$ [***] per year for a total of US$ 108.1 MM between 2001 and 2022 all in current US$, or US$ 78.6 MM expressed in US$ currency as of June 30, 2008.

184. Historical damages in current US$ were on average US$ [***] per year for the 2001-2007 period, totalling US$ [***]. Future damages (between 2008 and 2022) equal (on average) US$ [***] per year, for a total of US$ [***] in current US$.

185. As explained during the Hearing[159] and presented in Figure I, historical damages totalled US$[***] and future damages US$ [***], for a total of US$ 78.6 MM, all expressed in constant US$ of June 30, 2008.

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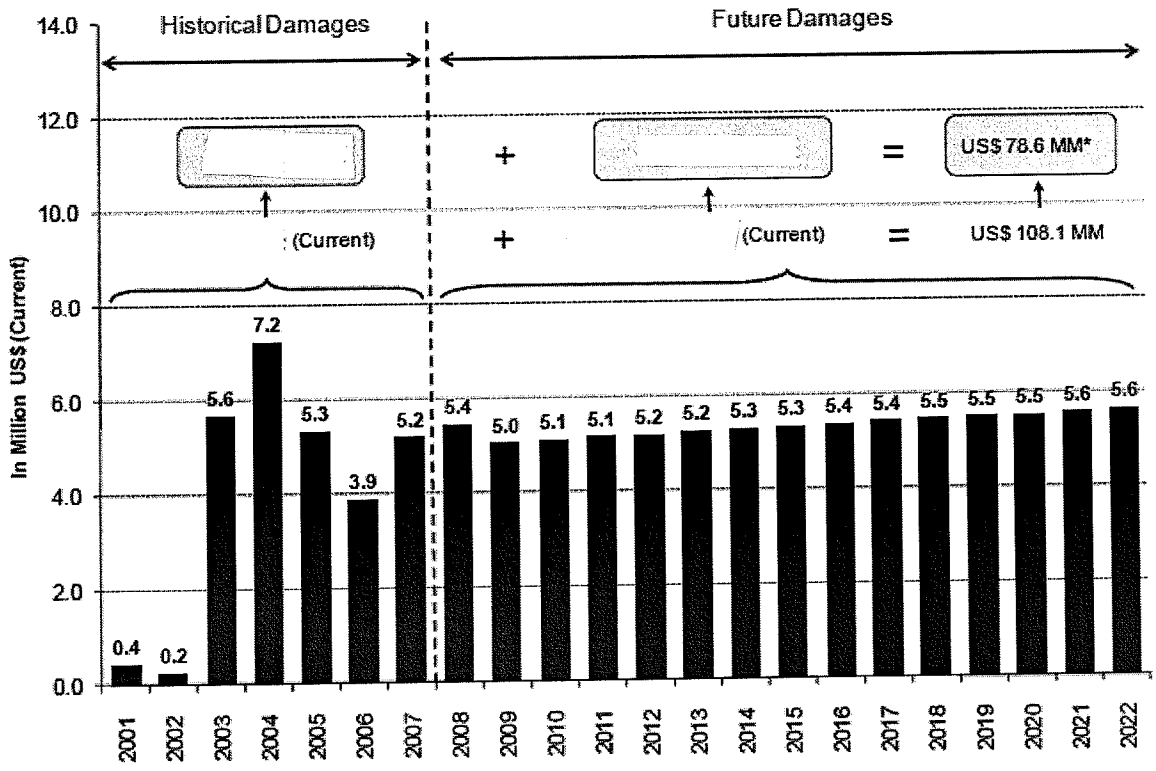
[158] Transcript: 1345: 3-6.

[159] Transcript: 1345: 7-13.

Figure I Historical and Future Damages



Source: LECG Tab 31

** In Constant US$ of June 30, 2008*

186. Table II indicates annual damages to Chemtura flowing from Chemtura (Crompton) Canada and Gustafson by business line.

Table II. Damages by Year and by Business Line (In Current US$)

Damages to Chemtura				
	Crompton		Gustafson	Annual Total (In Current US$)
	Canola	Non-Canola	Canola	
2001				
2002				
2003				
2004				
2005				
2006				
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				

Source: LECG Tab 31

Note: Partial figures may not add up to the total because of rounding of decimals.

187. During year 2001, Figure I and Table II show damages to Chemtura of US$ [***] in current US$.[160] This figure arises from but-for sales of the remaining inventories of lindane products for canola that Crompton could not sell in the actual scenario due to PMRA's misinformation campaign on the July 1st deadline in relation to the planting of already-treated seeds for the 2002 season.

188. During year 2002, damages to Chemtura amount to US$ [***] in current US$, attributable to the de-registration of lindane products for non-canola crops by PMRA in February 2002.[161]

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[160] This is equivalent to US$ [***] in US$ of June 30, 2008.

[161] LECG Exhibit 4, point 1.e.

189. From 2003 until 2022, Chemtura suffered damages on its lindane products for canola business from both Crompton and Gustafson.[162] During 2003 and 2004, there was a 10% increase in canola seeded area (from 4.7 to 5.2 million hectares) that triggered an increase in Crompton's and Gustafson's but-for sales of lindane products and as a result, damages increased from US$ [***] to US$ [***] in current US$. Starting in 2005, Gustafson began mitigating damages with the introduction of Prosper (2004). Therefore, Chemtura's damages, reduce to US$ [***] in 2005 and to US$ [***] in 2006 (both in current US$).

190. Between 2006 and 2007, there was an increase in damages to Chemtura in current US$ from US$ [***] to US$ [***]. The reason for this is a 13.8% increase in Crompton's but-for sales (in pounds) of lindane products for canola due to a similar increase in the seeded area of canola during those years. This area went from 5.3 million hectares in 2006 to 6.0 million hectares in 2007 (12.8%).

191. It can be seen from Figure I, that damages are stable during the 2007-2022 period, at approximately US$ [***] per year in current US$. Although canola seeded area and but-for prices of lindane products continue to increase during this period, this effect is offset by the conservative assumption of a reduction in Crompton's market share from 82.7% in 2008 to 58% in 2022.

192. Finally, Table III presents annual damages to Chemtura and accumulated damages between 2001 and 2022, in current US$ and also in constant US$ of June 30, 2008.

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[162] Damages flowing from Gustafson were calculated for the time period 2001-2008, in accordance with the reasons set out in LECG's original Report paragraph 76.

Table III. Total Damages to Chemtura by Year and Accumulated (In Current and in Constant US$ of June 30, 2008)

Damages to Chemtura				
	In MM of Current US$ Annual	In MM of Current US$ Accumulated	In MM of US$ of June 30, 2008 - Annual	In MM of US$ of June 30, 2008 - Accumulated
2001				
2002				
2003				
2004				
2005				
2006				
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				78.6

Source: LECG Tab 31

VI. CONCLUSION AND RELIEF SOUGHT

193. The Investor repeats and relies upon its claim in relation to NAFTA articles 1103 and 1110. Pursuant to the Tribunal's direction, it has not elaborated on them here, but refers the Tribunal to the materials in its Memorial and Reply in this regard.

194. Similarly, the Investor relies upon its claim for relief in its pleadings regarding damages and costs. In summary, the Investor claims:

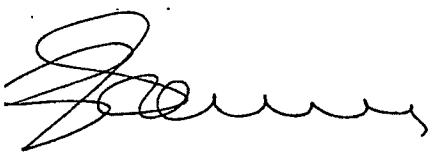
(a) Damages for breach of Article 1105, 1103 and/or 1110 in the amount of US$78,593,520;

(b) Its costs of this arbitration including expert and legal fees, as well as applicable taxes thereon;

(c) Pre and post-award compound interest on the amounts claimed above.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

DATED at Ottawa, this 23rd day of October, 2009



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