

# **Nadina Beetle Treatments**

**Complaint Investigation 030500**



**FPB/IRC/99**

**November 2004**

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# The Investigation

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A resident of Francois Lake complained to the Minister of Forests in May 2003 about the Ministry of Forests (MOF) using Monosodium Methanearsonate (MSMA), an arsenic-based pesticide, to control bark beetles. In July 2003, as she was dissatisfied with the minister's response, she complained to the Forest Practices Board that the Nadina Forest District had allowed MSMA to be used to kill bark beetles. She asserted that arsenic compounds spread to other species of animals and humans, which caused damage to the environment. The complainant was concerned that MSMA was being applied in close proximity to private property, which was contrary to its intended use as described in advertising and in testimony at an environmental appeal. The complainant asserted that the MOF did not adequately track which trees had been treated and, as a result, treated trees had been harvested, causing harm to fallers. Further, the complainant asserted that milling treated trees and burning the waste caused mill workers and the general population to come into contact with arsenical compounds.

The Board investigated the following issues:

- Is MSMA use considered environmental damage?
- Did MSMA treatments occur in locations other than as advertised?
- Were treated trees tracked?
- Were treatments close to human habitation?
- Were treated trees harvested and milled?

## Background

### Environmental Appeal

In order to set the context for this investigation, it will be useful to describe the results of a recent tribunal decision on MSMA use in the area that is subject to the complaint. In November 2000, the former Morice Forest District (now incorporated into Nadina Forest District) applied for a permit under the *Pesticide Control Act* to use MSMA to combat infestations of spruce bark beetle and mountain pine beetle. The permit was approved by a deputy administrator authorized by the Minister of Water, Land and Air Protection under the *Pesticide Control Act*, allowing application of MSMA to a maximum of 3,300 kilograms of active ingredient—this is equivalent to treating about 150,000 trees. The decision to issue the permit was appealed to the Environmental Appeal Board (EAB) by a member of the public who was concerned about the toxicity of MSMA and its impact on the environment.

An EAB panel heard the appeal. The panel considered whether the use of MSMA would have an adverse effect on human health or the environment and if so, whether that adverse effect would be reasonable under the circumstances of the case.

The panel accepted the evidence of a scientist that the arsenic compounds found in MSMA will have acute and chronic effects if they are ingested or otherwise introduced into the human body. According to the evidence in the appeal, arsenic can enter the body either by being ingested or through an open sore. It is not absorbed through the skin.

The panel concluded that there would not be an unreasonable adverse risk to workers applying the MSMA, due to the safeguards in place. The panel also concluded that there was no evidence of any external risk to animals or children, due to movement of arsenic compounds through the environment. In this regard, the panel noted requirements in the permit to avoid applying MSMA near watercourses and sources of domestic water. It also referenced a government technical report<sup>1</sup> which indicated that no studies have shown that water courses are contaminated following standard 'hack and squirt' application. Although animals might lick drips of MSMA off tree trunks or on the ground, the report said that such exposures can be prevented by proper and careful application by trained, certified applicators.

In July 2002, the panel upheld the permit, with amendments reducing the total amount of MSMA that could be applied.

The decision of the EAB was then challenged in BC Supreme Court. The court found that, having determined that there would be an adverse effect, the panel failed to consider evidence relevant to the question of whether the risk it had identified was reasonable or unreasonable—specifically, evidence concerning alternate methods to combat beetle infestation which did not involve MSMA treatments.

In July 2003, the Court sent the matter back to the EAB for reconsideration.<sup>2</sup> However, by that time the pesticide use permit had expired. Even so, the EAB made a new decision on November 8, 2004. Several aspects of the two EAB decisions are relevant to the concerns raised by the complainant

## **The Legislation**

The mandate of the Forest Practices Board concerns compliance with forest practices legislation. Accordingly, the Board considered whether MOF's decision to use MSMA to control bark beetles complied with forest practices legislation. Government use of pesticides to control bark beetle on Crown forest land is a forest practice, as is harvesting trees. However, the use of MSMA and other pesticides is not explicitly regulated under forest practices legislation. The only requirement that might be applicable is the general prohibition against damage to the environment.

To put forest practices legislation in context, it is important to examine the federal and provincial legislation which deals with pesticides. The federal government controls pesticide approval in Canada through Health Canada's Pest Management Regulatory Agency (PMRA). Before a pesticide is registered in Canada, data must be provided to the PMRA so that the safety, merit and value of that product can be assessed. The PMRA may refuse registration if there is an unacceptable risk to human health and/or the environment.

Each pesticide is re-evaluated every five years and the federal government may ask for more data at that time. Currently, MSMA is being re-evaluated and the PMRA requires that the current registrant provide additional research data. The registrant reported to the Board that this research will be more costly than the expected revenue from sales, therefore it is not going to provide the data. Even so, MSMA will continue to be registered until the PMRA has arrived at a decision.

Provincially, the *Pesticide Control Act*<sup>3</sup> regulates distribution and use of federally-approved pesticides. This Act allows additional conditions, beyond those on the federally controlled label, to be added to a pesticide use permit to further restrict the use of a pesticide. The administrator who approves the permit under the *Pesticide Control Act* cannot approve a pesticide use permit if there will be an unreasonable adverse effect—one that results in damage to humans or the environment. As well, the Minister of Water, Land and Air Protection may determine that a pesticide has or may have an unreasonable adverse effect and suspend its use.

## **Analysis**

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The provincial *Pesticide Control Act* and the federal *Pest Control Products Act* specifically deal with the environmental effects of pesticides and therefore provide better tools than forest practices legislation for regulating pesticides. The scope of this report is limited to the Board's mandate to investigate public complaints with respect to the application of forest practices legislation.

### **Damage to the Environment**

The complainant was concerned that arsenic spreads to other species of animals and humans, therefore causing damage to the environment. The Board notes that it does not have expertise concerning pesticides and did not conduct research into health issues associated with MSMA or the mobility of MSMA in the environment.

Section 45 of the *Forest Practices Code of British Columbia Act* (Code Act) prohibited forest practices that result in damage to the environment. However, the prohibition did not apply to forest practices carried out in accordance with an operational plan, site plan, exemption or permit issued under the Code. In other words, damage to the environment was sanctioned for approved forest practices.

The Board views an approved pesticide permit as equivalent – for the purpose of section 45— to an approved operational plan. Both the permit and the plan are government’s sanction of some change to the environment. The Board accepts that if the pesticide is applied according to an approved permit, its use should not be considered damage to the environment under the Code Act. The Board found no evidence of MSMA being applied contrary to the permit.

In this case, the appeal of the permit approval was subsequently remitted to the EAB by a court ruling. The EAB made a new decision and concluded that if MSMA was used according to the permit that there would be no unreasonable adverse effect.

As of January 31, 2004, the *Forest and Range Practices Act* (FRPA) and regulations replaced the Code. Section 46 of FRPA prohibits forest practices that damage the environment. Unlike the Code, FRPA defines ‘damage’ to the environment. The definition—found in section 3 of the *Forest Planning and Practices Regulation*—does not include pesticide use. For this reason the Board concludes that the use of MSMA to control bark beetles would not contravene section 46 of FRPA.

## **Advertised Location**

The complainant was also concerned that MOF had applied MSMA close to private property, contrary to the way it advertised its application for a pesticide use permit. The advertisement stated, “Treatment areas are in isolated locations, generally on rock ridge tops and hills.”

The *Pesticide Control Act* requires a permit holder to show where the pesticide will be applied. Usually, this is a specific geographic area. However, beetle epidemics start from endemic populations present throughout healthy forests. It is impossible to predict with any precision where the patches will develop. Applicators need to treat trees that are successfully attacked within four weeks in order for the MSMA treatment to be effective. Therefore, it is not possible to map all localized outbreaks, obtain a permit and go back to treat the beetles. So, rather than describing the exact location for treatment, the advertisement gave out a general description of where MSMA would be used.

The complainant expected the term ‘isolated’ to have the common sense meaning; out-of-the-way, secluded and away from habitation. MOF staff advised the Board investigator that the ministry interpreted ‘isolated’ in an operational sense; in their terminology, isolated meant not to be harvested in the short term. In this regard it is interesting to note that the EAB, in deciding that there was no indication that children would be exposed to MSMA, referred to the evidence of MOF personnel as follows:

This is particularly so given ... evidence that MSMA will only be applied in isolated locations such as rock ridge tops and hills. This requirement was further confirmed

in the “Application for Pesticide Use Permit” that was published in local newspapers by the Ministry of Forests when it applied for the permit.

This decision appears to support the complainant’s interpretation. The Board has a similar interpretation for the term ‘isolated’, that is: out-of-the-way, secluded and away from habitation. It is the Board’s view that advertisements for public review and comment should be clear and use the normal meaning for all terms contained in the text rather than use technical or ambiguous definitions of common terms.

## **Tracking of Treated Trees**

Another issue of concern to the complainant was that MSMA-treated trees were not properly tracked. Since the exact location of the MSMA treatment could not be determined before the permit was issued, the permit required the applicator to report where the MSMA had been used to the Ministry of Water, Land and Air Protection (MWLAP). The permit also required that each treated tree be marked with a notice. As well, the MOF policy at the time required that treated trees not be harvested for at least a year after treatment, implying that after that time it was acceptable to harvest the trees.

Board staff did find marked trees in some parts of the operating area, and there is no evidence to support the assertion that treated trees were not marked and reported to MWLAP. However, there was no mechanism for MOF to track where trees had been treated in order to ensure that they were not harvested.

## **Application Close to Human Habitation**

The complainant was concerned about MSMA being applied near her home. The investigation found that MSMA had been applied approximately one kilometre from the complainant’s home. This site had been clearcut and the treated trees removed. Another treated site was within 2 kilometres of the complainant’s home and within 200 metres of an access road to another property. Both sites were on gentle terrain overlooking Francois Lake. Although people would not normally visit these sites, using the Board’s interpretation of the common-sense definition of the word ‘isolated’, they are not ‘isolated locations’.

## **Harvesting and Milling Treated Trees**

Another concern of the complainant was that treated trees were harvested and processed in sawmills, exposing workers and others to arsenical compounds. The EAB assumed that treated trees would be left where they stood, rather than being logged.

The Board investigation found that MSMA-treated trees were in fact harvested in the Nadina Forest District and they were harvested within a year of being treated. The logs

were milled, potentially exposing loggers, mill workers and residents to some level of arsenical compounds.

This happened despite the treated trees being marked with a notice, an MOF policy in place which restricted harvesting of treated trees for one year and their location being reported to MWLAP. Unfortunately, there was no system in place within government to ensure that treated trees were not harvested.

There are signs of improvement in this area. In November 2003, the Babine Business Area of BC Timber Sales implemented standard operating procedures designed to prevent MSMA treated trees from being harvested and milled. Most significantly, the procedures require BC Timber Sales to identify treated trees and reserve them from harvest. As well, the MOF district manager has directed that all licensees use MSMA only on slopes greater than 45 percent and remote sites—remote sites mean that there is little chance of the treated trees being harvested in the long term and no chance of harvest for at least three years. Even though this policy is better, the Board notes that it is still an operational policy and it does not reflect possible exposure to people.

## Conclusions

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The Board has come to the following conclusions.

1. The Board only has jurisdiction over forest practices legislation. Other federal and provincial legislation governs the application of MSMA. These statutes are more specific and better suited to regulate the use of pesticides in forests than forest practices legislation.
2. MSMA application by government complied with the Code prohibition against damage to the environment. Under FRPA, the prohibition against damage to the environment does not apply to the use of pesticides.
3. The Board views the MOF definition of ‘isolated locations’ as jargon that lead the public to believe that MSMA would not be used near homes and that harvesting treated trees was unlikely. Advertising for public review should use common sense terminology so there is no chance of misleading the public.
4. Workers and others were subject to an increased risk of exposure to MSMA because MSMA-treated trees were harvested and milled within a year of treatment. Although contrary to district policy, this did not contravene forest practices legislation.

## Commentary

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It is the Board's view that forest managers should recognize that there is some scientific debate about the safety of MSMA, particularly with regard to persistence of breakdown products in the environment. Where MSMA is used, it is increasingly important to ensure that it can be used safely, without exposure to both workers and the public at large. Therefore, forest managers should elevate the level of caution they exercise when considering its use.

The extent of the mountain pine beetle epidemic in the province has increased the risk of harvesting trees that have been treated with MSMA. Although MOF has dealt with this issue in this district and timber sales area, the Board is concerned that this issue has not been dealt with on a provincial scale.

Although the local MOF policy has reduced the risk of harvesting MSMA-treated trees, the Board notes that the definition of 'remote' is still basically an operational definition. In other words, the definition depends on the likelihood of a tree being harvested, not the risk of exposure to people or the environment.

At publication of this report, the PMRA is currently re-evaluating MSMA. Both the current registrant and the MOF have reported that they believe the product will not pass the re-evaluation process because the data required by the PMRA is too costly for them to provide. Even if MSMA loses its registration, they have reported that there is still a stock pile of approximately three years worth of active ingredient available. The PMRA will not speculate on the outcome of the re-evaluation or length of time that MSMA will be registered. They plan to publish a regulatory proposal at a future stage of the re-evaluation.

The Board's view is that forest managers should use methods other than MSMA to control bark beetles in areas that may be frequented by the public such as recreation sites and trails, residential areas, berry picking sites, etc. If MSMA is used it should only be used in isolated areas meaning out-of-the-way or secluded, with no chance of harvest and not near homes or areas frequented by people.

The Board commends both the complainant for bringing this issue to the attention of MOF and the local MOF and BC Timber Sales offices for implementing policies to ensure that MSMA-treated trees will no longer be harvested.

## Recommendations

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1. The Board recommends that MOF:
  - provide provincial policy for tracking MSMA-treated trees to ensure that treated trees are not harvested and milled;

- provide provincial policy, with regard to MSMA use, that the terms ‘isolated’ or ‘remote’ mean out-of-the-way or secluded, with no chance of harvest and not near areas that are or could be frequented by people; and
  - provide direction to those advertising for comments from the public to use clear and normal wording, and not use technical or ambiguous definitions.
2. That the Ministry of Water, Land and Air Protection re-assess the risk that MSMA will do damage to humans as well as to the environment in the light of emerging new scientific information, and in consideration of the board’s findings that MSMA was used near human habitation and MSMA-treated trees were subsequently logged and milled within a year.

Under section 132(a) of FRPA the Board requests that MOF and MWLAP report steps taken to answer these recommendations by March 2005.

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<sup>1</sup> Dost, FN, 1995. *Public Health and Environmental Impacts of Monosodium Methanearsonate as used in Bark Beetle Control in British Columbia*, Queen's Printer for British Columbia, Victoria.

<sup>2</sup> The decision can be found at <http://www.courts.gov.bc.ca/ldb-txt/SC/03/14/2003BCSC1441.htm>.

<sup>3</sup> In 2003, the government passed the *Integrated Pest Management Act*. Although it is not yet in force, it will repeal the *Pesticide Control Act* and replace it with a significantly different system. The new system will require pest management plans to be prepared but not approved. Under the new legislation, the government would only consider an "adverse effect" if the Minister chooses to exercise that power.