West Coast District Health Board

Te Poari Hauora a Rohe o Tai Poutini

Corporate Office
High Street, Greymouth 7840

Telephone 03 769-7400
Fax 03 769-7791

24 April 2019

[redacted]

RE Official Information Act request WCDHB 9291

I refer to your letter dated 28 February 2019 and received in our office on 4 March 2019 requesting the following information under the Official Information Act from West Coast DHB. Specifically:

1. Official Investigation Report on [redacted] and [redacted]

As per response to OIA WCDHB 8954 (12/6/2017) – the West Coast Medical Officer of Health, Cheryl Brunton is quoted as saying "I have enclosed a copy of our initial report to the EPA on this incident. A copy of my full report will be available before the end of the month and I will send you a copy as soon as it is available."

a. I am requesting a copy of this report.

A copy of the report is attached as **Appendix 1**. Some of the content of this report (i.e. *Appendix 4*) has been withheld pursuant to Section 9 (2)(a) of the Official Information Act 1982 as it contains personal medical information.

b. Why has this report not been sent as promised?

The undertaking to provide you with a copy of the report was unfortunately overlooked. I apologise that a copy was not sent to you as promised in the response to your previous OIA request (WCDHB 8954).

2. Harold Creek contamination

I understand an investigation was carried out as a result of a large quantity of baits being found in the Harold Creek bed, the water catchment for Hari Hari water supply and a number of rural households and the source for stock water supply.

a. Has the results of the investigation been completed and a report issued?

An investigation was carried out into an alleged misapplication of baits in the area of Harold Creek. I attach a copy of the report of the investigation which was sent to the EPA (**Appendix 2**).

b. What actions are being taken as a result of the investigation?

The actions taken are referred to in the attached report.

3. Prefeed aerial

On 4th August 2018 an aerial prefeed application of supposedly non-toxic bait was applied around Hari Hari – no public warning was given and no warning signs erected.

a. Was there a requirement for signs to be erected and the public to be warned?

No, there was no requirement for signs to be erected or for the public to be warned of the application of non-toxic pre-feed baits. All controls for aerial 1080 operations, including those imposed by public health permissions, apply only to the application of the toxic agent.

4. 1080 Dust (frass)

1080 dust was witnessed and filmed during the operations both in loading the helicopters and when the 1080 was being aerially spread with the helicopters flying at times within 200m of households and over farmland and livestock water supplies.

a. I am requesting a copy of the 1080 dust health report as reported in the Greymouth Star February 2019.

This part of your request was transferred to the Ministry of Health (12/3/2019), as the report referred to in the Grey Star article was commissioned by the Ministry of Health and the article refers to the report being "ongoing".

The report on a scoping study of dust drift from an aerial application of 1080 carried out in 2015 is publicly available at
https://www.esr.cri.nz/assets/Uploads/FW15060-1080-dust-report-FINAL-web.pdf

b. What monitoring of 1080 dust and wind is required?

There is no requirement for routine 1080 dust monitoring either within the loading zone or outside it. Public health staff have no involvement in any wind monitoring so I am unable to provide any information about this.

I trust that this satisfies your interest in this matter.

Please note that this response, or an edited version of this response, may be published on the West Coast DHB website after your receipt of this response.

Yours sincerely

Carolyn Gullery
Executive Director
Planning, Funding & Decision Support

Community & Public Health West Coast

a division of Canterbury District Health Board

INCIDENT REPORT

Inquiry into potential exposure of two members of the public to 1080 during an aerial operation in and around the Kaiata Range on 12 June 2014

Dr Cheryl Brunton
Medical Officer of Health, West Coast

September 2015

Contents

References

Appendices

1. EPA Incident Report
2. Map of operational boundaries and sign locations
3. Article from Greymouth Star 20 September 2014
4. GP Medical Report

Executive Summary

Background

Vector Control Services Limited (VCS) was issued on 22nd May 2014 with a public health permission to carry out an aerial 1080 operation over 9330ha southeast of Greymouth covering the Kaiata Ranges (EPA permission code 14/767/GRYPH/CB). On 11th June , VCS gave 24 hour notice of their intention to commence the toxic phase of their operation. The operation was carried out on the following day, Thursday 12th June 2014.

The incident

Community and Public Health (CPH) staff were alerted on 13th June 2015 to an incident which had occurred during a 1080 aerial operation carried out by Vector Control Services Limited (VCS) the previous day in and around Kaiata on the West Coast. Two women reported that they were present in the operational area on the 12th June 2014 and had found 1080 baits next to their car. They had also seen a helicopter flying in the area. CPH staff were engaged in a field audit of this operation at that time and began an investigation.

Initial Investigation and assessment of compliance with permission conditions

The initial investigation found that the operator, VCS, did not breach any of the permission conditions for this operation. The women involved in the incident had inadvertently entered the operational area, having driven past but not seen two warning signs on Maori Gully Road. The track which they entered off Maori Gully Road had nothing at the junction to indicate that an aerial 1080 operation was taking place, though there were signs warning of an earlier ground control operation While not a public road, the track was publicly accessible. The older signage in the area appears to have contributed to potential confusion and the date on these may have led the women to believe that any danger was past. When the initial complainant was interviewed she described seeing a helicopter only once during their visit to the area. At that time she did not say that she had seen baits drop from the hopper, although she confirmed that she had found baits on the ground when they returned to their vehicle and both referred in later interviews to seeing dust. The timing of events is not completely clear but sowing of 1080 baits in the vicinity commenced at 0820 and was completed by 1325 hours.

Although no permission conditions were breached, this report makes recommendations for changes to operator practice to ensure that a similar situation does not arise again.

Further investigation and developments

In the weeks following the initial investigation, further information was sought and received from the operator and the site of the incident was visited by the local Health Protection Officer and Medical Officer of Health. Additional information was received from two other people that the women had approached with their concerns. A further interview was carried out with the initial complainant and her sister was also interviewed. In September 2014, a local newspaper article about the incident appeared which was reprinted in the NZ Herald and the women were interviewed on the TV3 show Campbell Live. One of the women subsequently visited the site of the incident with a local Health Protection Officer to verify its location in person.

Assessment of potential 1080 exposure

An exposure assessment was carried out. While the initial investigation established that the women were present in an aerial 1080 operational area it is less clear exactly when and where, in relation to the sowing of toxic baits in the part of the block, they were present. Because of this, worst case scenarios for duration of exposure were used, even though the women were almost certainly exposed, if they were exposed, for only a short time. The concentration of 1080 in the cereal baits used in this operation was 0.15%. At this concentration, the absorption of around 23 grams of bait would be required to reach an acutely toxic dose for a 70kg adult (or around 20 grams for a 60kg adult). This is a very large amount of dust particulate, which would need to be a very small inhalable size. The application rate of 2kg of bait/ha (effectively 3.0g 1080/ha) used in this operation means that it would simply not have been possible for anyone in the operational area to be exposed to anything like that dose.

Based on the evidence from the investigation and exposure assessment, it is highly unlikely that the women could have been exposed at any point to significant amounts of 1080. However, because of the uncertainties around the timing of reported events, it is not possible to completely rule out that they may have experienced short duration, very low dose exposure.

Assessment of health concerns

The women had called the Poisons Centre on the evening of the incident and visited their usual medical practice the following day where they were seen by a nurse. They complained of sore stomachs, a metallic taste in their mouth, headache and an irritating cough for 24 hours but told the nurse that they were improving. The nurse also called the Poisons Centre for advice and reassured the women. The women experienced continued ill health over the following months and saw their GP in September. She initiated a number of investigations and discussed their cases with the Medical Officer of Health who requested that she provide a formal medical report. This was received in late February 2015. The Medical Officer of Health requested peer review of the report from three expert toxicologists.

The expert reviewers considered that while it was possible that the initial symptoms suffered by the women could relate to 1080 exposure, this was unlikely and the women's continuing health problems were more likely to be related to other causes. Had a blood test been taken shortly after the incident it would have been possible to confirm if exposure to 1080 had taken place. However, there is no test which can be done at this stage to relate the women's symptoms and signs to 1080 exposure.

1. Background

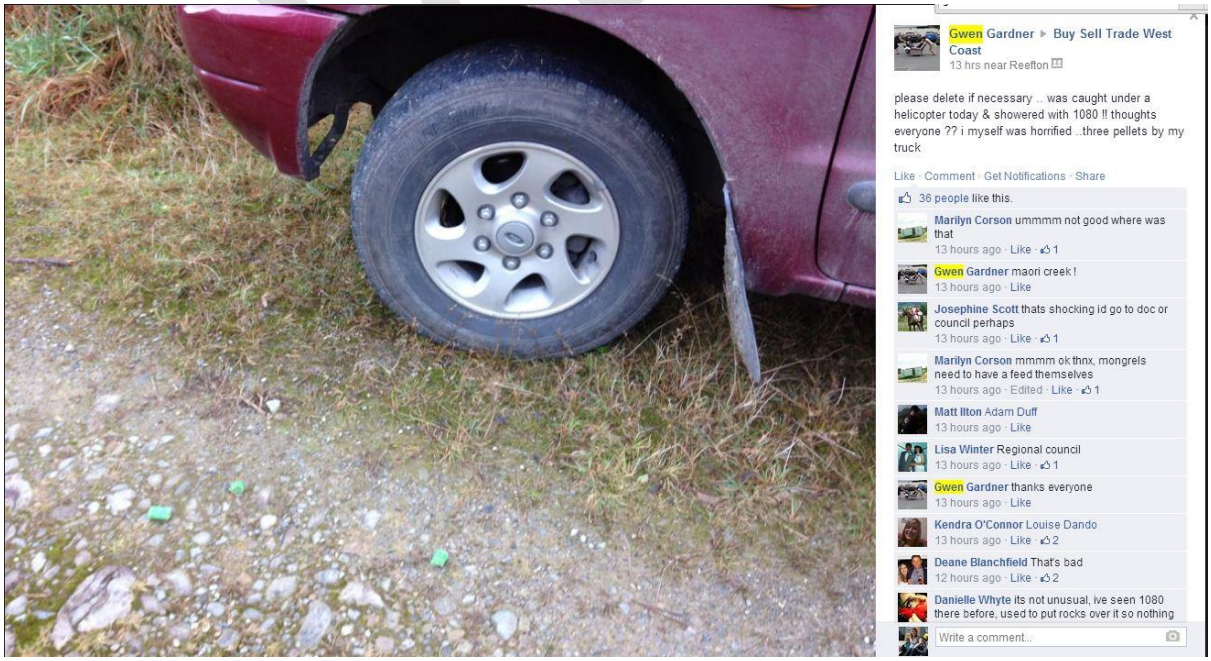
Vector Control Services Limited (VCS) was issued on 22nd May 2014 with a public health permission to carry out an aerial 1080 operation over 9330ha southeast of Greymouth covering the Kaiata Ranges. The name of this operation was Kaiata Aerial (EPA permission code 14/767/GRYPH/CB). On 11th June, as required by Condition 1 of their permission, VCS gave 24 hour notice of their intention to commence the toxic phase of their operation. The operation was carried out on the following day, Thursday 12th June 2014. Community and Public Health staff from Greymouth and Christchurch carried out a field audit of the operation on Friday 13th June.

2. The reported incident

CPH was advised in an email sent on 13th June from David Priest, the operator in charge of the VCS operation that a picture had been posted on Facebook (Figure 1) the previous day by Gwen Gardner reporting that she *"was caught under a helicopter today & showered with 1080!! Thoughts anyone?? myself was horrified..three pellets by my car".* The posting identified the location of the car as Maori Creek. Condition 4 of their public health permission for this operation required VCS to notify CPH of any incidents or complaints in relation to their operation that are likely to impact on public health and this report complied with that requirement. Mr Priest also phoned the CPH staff who were in the field carrying out an audit of the operation to alert them.

Mr Priest also provided the information that Ms Gardner had also contacted the Grey Star newspaper to report the incident. Laura Mills from the Grey Star had then contacted TBFree for comment.

Figure 1 Screen grab from West Coast Buy, Sell, Trade



Once made aware of the incident, CPH staff commenced an investigation.

3. Initial investigation

This was carried out by a local CPH Health Protection Officer (Amelia Haskell) and led by a Health Protection Officer and HSNO Officer from CPH's Christchurch office, Sue McEwan, who was assisting in carrying out the field audit of the operation on 13th June. This involved checking the location of signage and track clearances.

They were contacted by David Priest in the afternoon of the 13th June and returned to CPH's office in Greymouth to meet him and the TB Free's Aerial Co-ordinator, Stacy Foster just before 1600. A run down of the basic information available at the time was given and further investigation into the incident was deemed warranted. VCS were requested to provide flight lines data from the operation.

On the 14th June, Sue McEwan and Stacey Foster returned to the area to attempt to locate the specific location of the reported incident and assess if any breaches of the conditions of the permission had occurred. The track was located on the left and just before the turnaround on Maori Gully Road (see Figure 2 below). The track is not named but follows Maori Gully Creek.

Figure 2 Entrance to track off Maori Gully Road

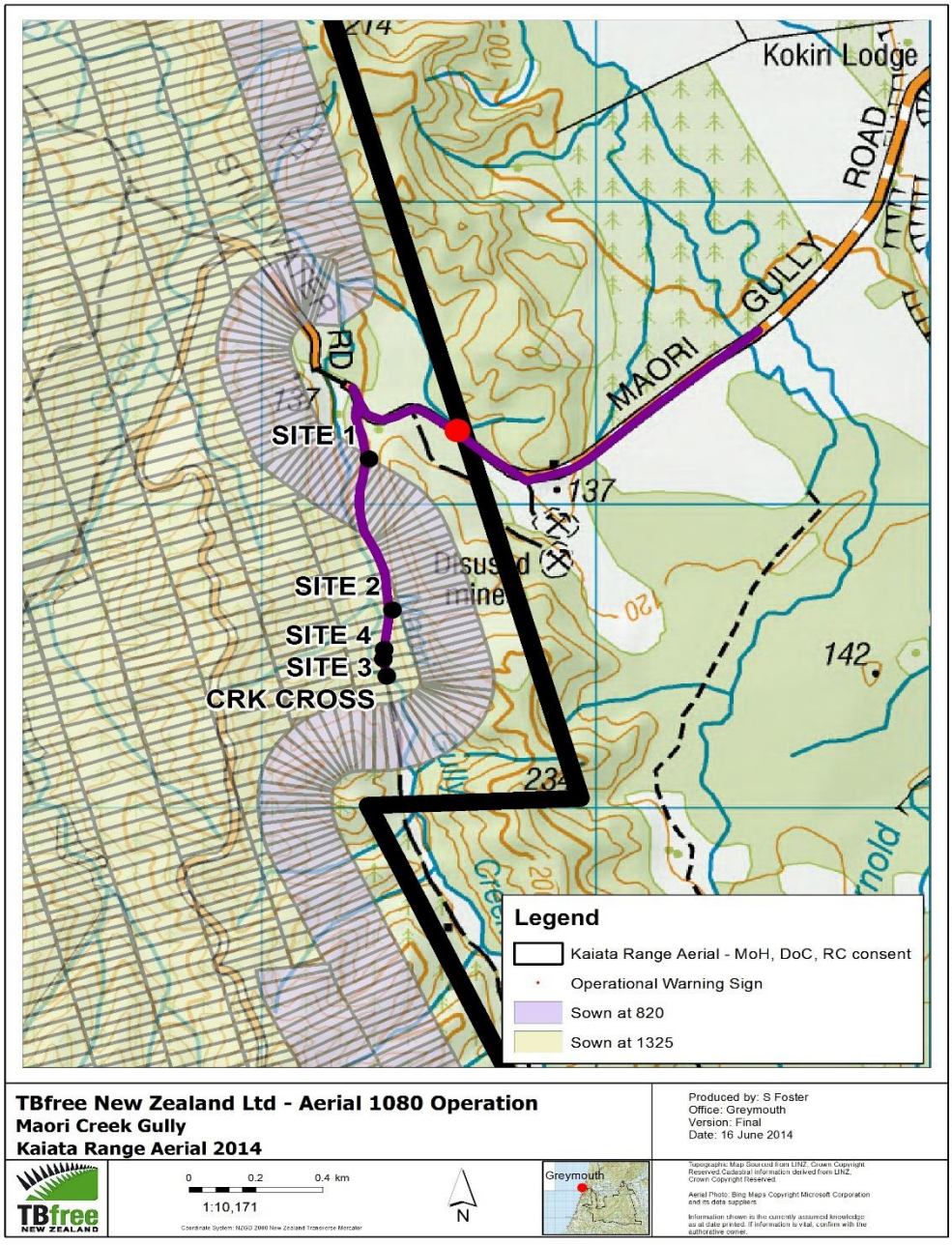
Entrance to side track on left. Note no specific signage, tape or other barrier to entrance of side track. Track on right is a turnaround. Position of control point further ahead on this road. Old sign centre of photo (small white shape) is related to a March 2014 ground operation.

They found four possible layby sites large enough to park a vehicle were found along the track. They did not drive past the point of the stream ford as the track was overgrown and in poor condition at this point. Sue McEwan photographed these locations and recorded their GPS co-ordinates. They

also reviewed the location of signage. Several of the laybys had access to the stream and the ford area itself gave easy access to the stream bed.

The GPS co-ordinates of the laybys were superimposed on the flight path map by Stacey Foster and results of that confirmed the side track was in the general area that had been flown earlier in the day of the operation (initial boundary drop begun at 0820 hours, and final swathes completed by 1325) (see Figure 3 below). As the women reported seeing only one flight of the helicopter later in the afternoon this supports the information initially provided by the operator that the track area may have already been treated by the time the women entered the track, but was still subject to a track clearance.

Figure 3 Location of laybys on track off Maori Gully Road superimposed on flight lines



Note: Heavy dark line represents operational boundary as per permission 14/767/GRYPH/CB

The track in question had already been cleared of any toxic baits early on the morning of the 13th June prior to the audit visit to the general area on Maori Gully Road at 1450 that day. No baits were observed by the auditors on the 13th June in that general area or on the 14th June when Sue McEwan and Stacy Foster returned to conduct a more detailed site investigation of the specific track where the incident took place.

The flight lines data shown in Figure 3 indicate that 1080 bait was sown at or around 0820 in the areas of the track including sites 1 and 2 and near sites 3 and 4 later on the 12th June at around 1325.

On 16th June, Sue McEwan spoke to a staff member at Kokiri Lodge, Ronnie Carroll, by phone and they confirmed that another staff member had a conversation with two women late on the afternoon of the 12th June. They estimated that the time had been between 1630 – 1700 hours. They stated that it had still been light at the time and sunset occurred at about 1720 on that day. The staff member had been walking back to the Lodge along Maori Gully Road with a party of teenagers and they were about 200 metres from the lodge. Two women in a dark coloured 4WD truck had stopped to tell them that they had been out walking and had found 1080 near their truck. The staff member could not recall other details of the conversation.

The landowner with property for sale off Maori Gully Road, Wayne Collins, confirmed on 19th June 2014 that he had received a phone call from Gwen Gardner around 1035 on 12th June. He said that Gwen had not wanted to wait for him to come down to the property to speak to her. This means that the two women must have turned off Maori Gully Road and travelled down the side road shortly after this.

An initial Incident Report was emailed to the Environmental Protection Agency by email on 16th June 2014 (see Appendix 1). Jackie Adams, the West Coast Regional Council Compliance Manager, provided initial information that day that he did not think the resource consent conditions applying to the operation had been breached.

Ms Gardner telephoned CPH Greymouth on 16th June 2014 and spoke briefly to Amelia Haskell who passed her contact details on to Sue McEwan.

4. Initial interview with complainant

Sue McEwan interviewed Gwen Gardner by phone on the 18th June 2014.

Gwen Gardiner said that she and her sister Kathleen Bartlett had travelled to the general area of Maori Gully Road on the 12th June 2014 to view a property for sale (one of two on that road). Gwen reported that they were familiar with the area and had planned a day's recreation and a picnic in the area following the property viewing. Gwen thought that they had left Reefton about 0900 hours but said they had not been in any hurry.

She said they had driven up Maori Gully Road and stopped briefly to look at a property advertised for sale. Gwen had rung the owner (Wayne Collins) but decided not to wait for him to come down to meet them. They drove past the old cemetery and had turned off to the left further on onto a side track off Maori Gully Road. She said they were able to drive up to the entrance to the track with no barriers or security points preventing their access. The entrance to the track is shown in Figure 2 above. She estimated that they parked their vehicle at around 1100 - 1130 hours but was not

certain about the time. They parked in a layby next to an abandoned vehicle (see Figure 4 below). This site corresponds to Site 3 in the map shown in Figure 3 above.

After leaving the car they walked through the bush to Maori Gully Creek where they had a cup of tea and ate their picnic. They saw a helicopter with a monsoon bucket fly overhead close to where they were sitting. Gwen said they did not see any baits being dispersed from the monsoon bucket. They watched a trout spawning and took photographs of it. They then walked up the creek to the gorge area. They both felt unwell about a half an hour after seeing the helicopter: Gwen had a "tinny" taste in her mouth and her sister had a headache and a cough. They returned to their vehicle some time later and Gwen reported that they then noticed the 1080 baits on the ground near the wheels of their vehicle. They photographed the baits and posted the photo on an internet site later that evening (see Figure 1 above). Gwen said they left the area about 1630 hours.

Figure 4 Layby with car wreck where women parked their vehicle

Route to Maori Gully Creek is through bush to the rear of vehicle wreck

On their way out of the area, Gwen said they stopped to talk to a group of students and their supervisor who were walking back to Kokiri Lodge along Maori Gully Road. She said she was concerned that they might not be aware of the 1080 operation and wanted to warn them.

Sue McEwan questioned Gwen about whether or not she or her sister had seen any warning signs. Gwen said she seen a sign before turning off Maori Gully Road onto the side track (this is the sign just visible in Figure 2 above). She said there was another sign with a March date on it along the side track. One of the signs on the track is shown in Figure 5. Other signs in the vicinity warned of the presence of cyanide as part of the same March ground operation.

Figure 5 **Warning sign for previous ground 1080 operation located on track alongside Maori Creek**

Gwen said that neither she nor her sister had seen any other warning signs on their way into the area. They did not see any security guards either. She said they did see a sign on Maori Gully Road on their way out but did not stop to read it.

Gwen told Sue McEwan that both she and her sister felt unwell about a half an hour after they saw the helicopter. She said she had a "tinny" taste in her mouth and her sister had a cough.

Sue asked Gwen if she would be willing to revisit the area with a CPH staff member to confirm the location of the incident. Gwen declined and told Sue she had no wish to go back into the area as she had been traumatised by events. However, Gwen indicated that she was willing to be re-contacted as part of the investigation. She also told Sue that her sister was on a short trip away and could not be contacted until she returned. Sue also asked Gwen to check her camera to see if the photos she had taken of the trout spawning were time-stamped as this information could help to pinpoint the time that the women were in the area.

5. Assessment of compliance with permission conditions

After the initial investigation was completed, and based on the information from it, an assessment was made of whether or not the conditions of the public health permission for the operation had been breached. This assessment focussed on the following questions:

5.1 Was the incident reported as required by Condition 4 of the permission?

CONDITION 4: Complaints and Incidents

Any incidents or complaints relating to the operation that are likely to impact on public health shall be reported to the Health Protection Officer at Community & Public Health within 24 hours of the incident or complaint.

Yes, the incident was reported by the operator on 13th June 2104 as soon as he became aware of it.

5.2 Were the baits found by the complainant within the permitted operational boundaries?

Yes. The location labelled Site 3 in the map shown in Figure 3 is within the operational boundaries. The track on which it is located was not subject to any exclusions and was permitted to be sown and cleared by Condition 16 of the permission (see below)

CONDITION 16: Aerial Applications to Tracks and First Clearances

The applicant may aerially apply 1080 to the following walking and vehicle tracks but not during or within 24 hours of the start of school holidays, public holidays or public holiday weekends:

- Kakawau Track
- Maori Gully Road (inside the private forestry area)
- Unnamed forestry roads off Maori Gully Road (inside the private forestry area)

If the applicant aerially applies 1080 to any of the above tracks, they shall inspect those tracks as soon as possible and not more than 24 hours after the VTA application and make reasonable efforts to find and remove all bait and, if encountered, animal carcasses.

First clearances of this track took place on 13th June 2014 in compliance with this condition.

5.3 Were permission conditions regarding warning signage complied with?

Yes, sign content was specified in Condition 19 and the specific locations of warning signage were indicated in the operational map attached as Schedule 3 of the permission for the operation (see Appendix 2). The field audit of the operation carried out on 13th June found that these conditions had been complied with.

CONDITION 19: Sign Contents

All warning signs must include an international symbol for toxic substances (e.g. skull and crossbones) and a statement advising that children and pets should not be allowed to wander (e.g. 'WATCH CHILDREN at all times').

Signage at the junction of Maori Gully Road and the side track which the women travelled down was not required as this location was within the operational boundary and inside a private forestry block.

The field audit of the operation confirmed that warning signage was present in two locations on Maori Gully Road: at the turnoff from Arnold Valley Road and further up Maori Gully Road at the entrance to the operational area (see Figure 3). The signage at the junction of Arnold Valley Road and Maori Gully Road and at the boundary of the operational area on Maori Gully Road is shown in Figures 6 and 7 below. These photographs were taken on the 13th June 2014 as part of the field audit.

Figure 6 Warning signage at junction of Maori Gully Road and Arnold Valley Road

Figure 7 Warning signage on left of Maori Gully Road near operational boundary

The signage shown in Figure 7 was located within 250 metres of the turn off to the Maori Gully Creek track. The women would have passed both signs on their way up Maori Gully Road but by Gwen Gardner's account they did not notice them until they were leaving the area.

In summary, no breach of conditions occurred. However, that the women were able to enter an operational area while an aerial 1080 operation was being carried out is still of concern.

The main security control point in the vicinity which was manned by a security guard on the day of the 1080 drop was a further 200 metres past the junction of the track the women travelled down after turning left off Maori Gully Road. This control point had a chain across the road at the time (see Figure 8) and there is a cattle stop at the location.

However, this barrier was not visible from the point at which the track leaves the main road and no warning signs or temporary barriers such as warning tape had been positioned at the entrance to the track. The only warning sign in the vicinity was the one for an earlier operation located by the turnaround which is just visible in Figure 2.

The security guard on duty at this control point on the 12th June did report seeing a vehicle turn off Maori Gully Road down the track to Maori Gully Creek. This initial sighting was between 0900 and 0930 hours which makes it unlikely that this was the complainant's vehicle, unless the guard was mistaken about the timing. The guard and another member of staff of the operation saw a vehicle leave the track and head out onto Maori Gully Road around 1600 hours. The guard thought that it was the same vehicle he had seen earlier and that it was a similar colour to the vehicle in the Facebook post shown in Figure 1. The timing of this latter sighting is similar to the complainant's recollection of when the two women left the area.

In hindsight, had the position of the security control point for the operation been located some 200 metres further down Maori Gully Road access to the side track on the day would have been prevented.

Figure 8 Operational control point inside forestry block on Maori Gully Road

There was no signage or anything to indicate that an aerial 1080 operation was in progress at the junction of Maori Gully Road and Maori Gully Creek track (see Figure 9 below).

Figure 9 Close up of junction between Maori Gully Road and Maori Gully Creek Track

The track which the women travelled down is in poor condition (see Figure 10 below) with overgrown gorse and scrub impinging on the track and a deeply rutted surface in parts. However, it

navigable with a 4WD and the evidence of the old car wreck at the layby the women parked in is that other vehicles have managed to travel down it in the past.

Figure 10 Section of Maori Gully Creek track

Note: warning sign from previous pest control operation is seen on right.

Although publicly accessible, the track is not a public road (information confirmed by Land Information NZ), although Maori Gully Road itself is, at least up to the point at which it enters the boundary of the private forestry block administered by PF Olsen. Maori Gully Road continues through the block as Stillwater Road.

Entry to the PF Olsen administered forestry block in the operational area is by permit. However, in common with many private forestry roads and 4WD tracks elsewhere on the West Coast, the entry to this forestry block is not specifically sign-posted and many locals use roads and tracks like this one to collect firewood, walk or hunt as if they were open to the public (and some have been in the past). Unless there are signs or gates present, this is not an unreasonable conclusion for visitors, like the two women involved in this incident, to draw.

6. Initial conclusions and recommendations

The operator, VCS, did not breach any of the permission conditions for this operation. The women involved in the incident inadvertently entered the operational area, having driven past but not seen two warning signs on Maori Gully Road. The track which they entered off Maori Gully Road had nothing at the junction to indicate that an aerial 1080 operation was taking place, though there were signs warning of an earlier ground control operation (dated March 2014). While not a public road, the track was publicly accessible and there was nothing to indicate that it was on a private forestry block.

Signage related to a ground control operation in the area dated March 2014 appears to have contributed to potential confusion and the date on these signs which were seem by the women may have led them to believe that any danger was past.

As initially reported by Gwen Gardner to Sue McEwan, the women saw a helicopter only once during their visit to the area and they did not see baits drop from the hopper beneath it, although they found baits on the ground when they returned to their vehicle. The timing of this sighting is unclear but sowing of 1080 baits in the vicinity was completed by 1425 hours. It is possible that the flight they observed was the helicopter returning to base with an empty hopper.

It is recommended that:

6.1 Warning signage be erected at the junction of Maori Gully Road and Maori Gully Creek Track for any future aerial or ground pest control operations in this area and that warning tape should be placed across the track entrance while toxic baits are laid and until after track clearance is undertaken

6.2 In the case of other forestry tracks and roads in privately owned forestry blocks within any operational area that are publicly accessible , these should be closed by means of gates (where these exist) or other barriers such as a chain or warning tape and signage erected at the main entrances to such tracks or roads

6.3 Where it is not possible to close such tracks or roads to allow toxic baits to be sown and cleared, consideration should be given to imposing an exclusion on such routes

6.4 Where private forestry tracks and roads are publicly accessible, forestry owners or administrators should clearly identify the boundaries of the forestry block and conditions of entry and use, preferably by signage at the main access points

6.5 The position of the security control point of any pest control operation in this and other private forestry blocks needs to be carefully considered prior to the operation and sited such that it limits access to forestry roads and tracks most effectively. Had the security control point for this operation been further back down Maori Gully Road near the operational boundary, access to the side track would have been impossible while the operation was in progress.

6.6 Clear instructions should be given to security personnel to pass on information about unidentified visitors to an operational area promptly to the manager of the operation.

6.7 Where existing warning signs are required to remain in place for an earlier ground pest control operation within an area which is to be treated by aerial control, some means to highlight the signs for the current operation are needed to avoid confusion, for example, larger date markings or information boards

The first of these recommendations (6.1) was advised verbally to VCS and has been specifically required in a permission issued to another contractor for a subsequent ground control operation in the area.

7. Further investigation and developments

In the weeks following the initial investigation, further information was sought and received from the operator and the site of the incident was visited by the local Health Protection Officer and Medical Officer of Health on the 26th June 2014. Additional information was received from a member of one woman's family and a member of the public whom the women had approached with their concerns. A further interview was carried out with the initial complainant and her sister was also interviewed. A local newspaper article appeared which was reprinted in the NZ Herald and the women were interviewed on the TV3 show Campbell Live. Gwen Gardner visited the site of the incident with a local Health Protection Officer, Amelia Haskell, to verify its location in person.

7.1 Inquiry from Mary Molloy 8th September 2014

The Medical Officer of Health received an email from Mary Molloy of the group Farmers Against 1080 on the 8th September 2014. Mary said that she had been approached by the two women and that she wished to discuss the information they had shared with her. Dr Brunton arranged to meet her on the 11th September. At that meeting Mary said that the women were certain that they had parked their vehicle on a public road and that they had gone back to the site to record its GPS co-ordinates. Mary provided these co-ordinates to Dr Brunton by email the following day. These co-ordinates were mapped by a member of CPH's information team and the locations are shown in Figure 11 below as red dots.

Figure 11 Map of GPS co-ordinates supplied to Mary Molloy

These co-ordinates are close to the location identified by the initial investigation which place the site that the women's vehicle was parked just off the Maori Gully Creek track and the site of their picnic nearby,

7.2 Call from family member 10th September

Jem Pupich, CPH's West Coast team leader took a telephone call from Kathleen Bartlett's son-in-law, Bill Parker, on the 10th September. Bill told Jem that his mother-in-law had been involved in an incident with 1080 in June and expressed concern that she was having difficulty in getting anyone to listen to her. Jem advised Bill that CPH was aware of the incident and was investigating it. He contacted the Medical Officer of Health and then rang Bill back to let him know that she had been contacted by the women's GP and had requested further information about their health problems.

7.3 Second Interview with Gwen Gardner

Gwen Gardner was again interviewed by phone on 19th September 2014 by Sue McEwan in order to go over the information she provided at the earlier interview and to check if she had remembered anything further. At this time Gwen told Sue that she felt she had told her everything already. On this occasion she mentioned dust from the helicopter and said she had not seen it but had seen pellets which were covered in dust. She told Sue that she had been back to the site of the incident on the 30th of June with her sister to record its GPS co-ordinates. She mentioned that all the signs nearby looked new and that the grass had been mowed.

Gwen said that she was now having medical tests to find out why she was feeling unwell. She told Sue that she had rung the Poisons Centre on the evening of the 12th June but that they had not been very helpful.

Sue asked Gwen if she had been able to find out whether or not the photos she had taken were time-stamped. Gwen replied that it wouldn't help and that she knew the time of the incident already. Gwen expressed concern about the school group from Kokiri Lodge that she had seen in the area. She believed they had been in the operational area and had not known about the operation. Sue told her that the Lodge had received notice of the aerial 1080 operation and that Lodge staff had confirmed that the school party had not entered the operational area but had been on property owned by Wayne Collins.

Gwen told Sue that the Council had told her that Maori Gully Road was a public road. Gwen also told Sue that she was unhappy about the way the incident had been reported in the local newspaper on the 16th June 2014 and comments that the women had been on a private road and had ignored signs. Sue pointed out to her that CPH staff had not made those comments. Gwen expressed the view that CPH staff had not taken her complaint seriously and that they should have been "more caring". Sue reassured Gwen that the incident was being taken seriously by CPH and asked for and was given Kathleen Bartlett's phone number.

7.4 Interview with Kathleen Bartlett

Kathleen Bartlett was interviewed by phone by Sue McEwan on the 19th of September 2014. Her account was similar to her sister's though she provided the information that they had driven up to the turnabout area (shown in Figure 2 above) and read the sign there which showed a March date, so they thought it was OK. She said they then turned around and went down the track. She said they had spent a short time after they parked their car putting on gumboots and unpacking their

picnic. She estimated that they arrived about 1100 hours and that they walked 50 metres to the creek where they sat to have their picnic. She said that she and her sister had been "yakking", watching a trout in the creek and feeding a weka. When the helicopter flew over she said it was dusty but that she thought maybe the dust was gorse pollen (the gorse was in flower at the time) and that she and her sister had walked up the creek after this happened. She said that later she felt nauseated and dizzy, and had been coughing and had a headache.

Kathleen said that she and her sister had found warning signs on Maori Gully Road on their way out of the area. She told Sue that when they returned to the area on the 30th June, she and her sister thought the signs had been changed and that there were extra ones.

Kathleen told Sue that she had rung the Poisons Centre on the evening of the incident and been to the Reefton Medical Centre the day after the incident (13th June 2014) and had been seen by a nurse. She said she had since seen the GP and had tests and was using an inhaler as she still had breathing problems.

7.5 Article in Greymouth Star 20 September 2014

An article appeared on the front page of The Greymouth Star on the 20th September describing the investigation into the incident as being re-opened. This was not the case as the investigation was still ongoing at that time. The article was reprinted in the NZ Herald on the 22nd September and as a result, TV3's Campbell Live programme interviewed the women.

7.6 Campbell Live programme TV3 29 September 2014

Prior to the programme going to air, a journalist from TV3 requested interviews with Dr Brunton and Dr Liberatore (the women's GP). Both declined to be interviewed but Dr Brunton provided a statement "*What is being investigated is the women's report of having found themselves in the midst of an aerial 1080 operation back in June. The scope of the investigation includes identifying where they were, whether or not it was within the operational boundary and whether or not the conditions of the public health permission and resource consent for the operation had been complied with. The current focus of the investigation is additional information provided by the women and their GP regarding their complaints of on-going health problems. The investigation is being carried out by public health staff from Christchurch and Greymouth".*

7.7 Gwen Gardner visit to site of incident with Amelia Haskell 2nd October 2014

Gwen accompanied Amelia Haskell, Health Protection Officer, to the site of the incident and confirmed the location where her vehicle had been parked as the layby seen in Figure 4 above. Amelia Haskell emailed Gwen copies of the original co-ordinates and flight lines map and the map with the co-ordinates provided via Mary Molloy.

7.8 Subsequent correspondence between CPH and Gwen Gardner

Gwen Gardner phoned CPH on the 20th October 2014 asking to meet Dr Brunton to discuss her report on the incident. Dr Brunton replied by email on the 22nd October indicating that she was unable to meet that week but said that she "*would be very happy to meet you to discuss my report into the incident in which you and your sister were involved during the Kaiata aerial 1080 drop. I can come to you in Reefton if that works better for you. I have yet to finalise this report as I am awaiting further information from your GP. Please be assured that it is my intention to provide you with a*

draft copy and talk to you (and your sister if she wishes) about its contents before it is released to anyone else". Gwen replied asking for information about who else would be provide with copies of Dr Brunton's report and Dr Brunton provided this information by return email, including advising Gwen that she would seek peer review of Dr Liberatore's report by expert toxicologists.

Gwen emailed Dr Brunton again on the 4th November 2014 asking if there had been any progress on the report. Dr Brunton replied by email on the 6th November 2014 to say that she had heard from Dr Liberatore that the women's health problems were improving but that she was still awaiting more detailed information from her.

Gwen emailed again on 16th November 2015 asking about the report. Dr Brunton replied on the 26th November apologising that she was still not in a position to complete her report without further information from Dr Liberatore.

Dr Brunton emailed Gwen again on 24th December to let her know that no report had yet been received from her GP.

8. Assessment of complainants' potential exposure and health concerns

8.1 Assessment of potential exposure

In assessing potential exposure to an environmental chemical it is important to consider the location, duration and frequency of the exposure, as well as the mechanism of exposure and any risk or protective factors amongst those who are exposed. In this case the potential exposure was sodium fluoroacetate (1080). This is a vertebrate toxic agent with an acute toxic dose of 0.5mg/kg body weight (or 35mg in a 70kg adult human). The Workplace Exposure Standard for 1080 (WES-TWA) is 0.05 mg/m^3 (MBIE, 2013). This is the time-weighted average exposure standard designed to protect workers from the effects of long term exposure. It is based on an eight hour day, 40 hours per week exposure).

Assessment of exposure in this case is more difficult. While the initial investigation established that the women were present in an aerial 1080 operational area it is less clear exactly when, in relation to the sowing of toxic baits in the part of the block they entered (see estimated timeline in Figure 12 below.

Figure 12 Estimated timeline of events on 12th June 2014

Time	Events
0820	Sowing of boundary areas including part of Maori Gully Creek track
0900 - 0930	Women leave Reefton Vehicle seen by security staff leaving Maori Gully Road and entering Maori Gully Creek track
1035	Wayne Collins receives phone call from Gwen Gardner
1100	Estimated time that women arrive at layby on Maori Gully Road
1130	Time that Kathleen Bartlett estimates the women saw helicopter fly over
1325	Sowing of block completed
1600-1630	Estimated time that women leave site Dark red vehicle seen by security staff exiting track onto Maori Gully Road

According to the flight lines data supplied by the operator sowing of the boundary areas was completed before the women entered the bush and walked to the creek. This makes it most likely that the 1080 baits they observed near their vehicle were there when they arrived but that they did not notice them at the time. It is difficult to assess from the women's accounts whether or not the dust they reported seeing was 1080, or as they initially thought, gorse pollen. However, assuming a worst case scenario, that the dust did in fact contain 1080, then the route of exposure would have been by inhalation (the women did not handle the baits found by their car). The potential duration of exposure, again assuming a worst case scenario that dust was present in air from the time the women estimate they saw the helicopter to the time they returned to their car, was no more than 4 hours in total. It is likely that the duration of exposure, if it occurred, was considerably shorter as the women did not describe seeing dust or baits at the time they saw the helicopter.

The concentration of 1080 in the cereal baits used in this operation was 0.15% (one part in 667). At this concentration, this would require the absorption of ~23 grams of bait to reach an acutely toxic dose for a 70kg adult (or around 20 grams for a 60kg adult). This represents a very large amount of

dust particulate, which would need to be a very small inhalable size, requiring the baits to be very friable. The application rate of 2kg of bait/ha (effectively 3.0g 1080/ha) used in this operation means that it would simply not have been possible for anyone in the operational area to be exposed to anything like that dose. Recent field studies of the disposition of bait dust (Jennings 2014) around loading sites for an aerial 1080 operation found that grain dust and 1080 levels 5 metres from the loading site were well below the WES with no 1080 being detectable and only minute amounts of grain dust being found. Loading 1080 cereal baits into a hopper can generate dust but significant amounts of dust are not usually generated when baits are discharged to air from the hopper in flight. However, even had the discharge of baits to air in this operation generated a large amount of bait dust, it would still have been difficult for the women to have inhaled large quantities and still continued with their walk, as cereal dust itself is an irritant and its effects would be noticed before those of 1080. Based on the evidence from the investigation, it is highly unlikely that the women could have been exposed at any point to significant amounts of 1080. However, because of the uncertainties around the timing of reported events, it is not possible to completely rule out that they may have experienced short duration, very low dose exposure.

With regard to risk and protective factors, neither woman was wearing any form of respiratory protection and, as far as can be ascertained, neither had any relevant significant medical history which would increase their susceptibility to the effects of 1080 by inhalation.

8.2 Initial information about health concerns

The initial information about the women's health concerns was provided to Sue McEwan in her first interview with Gwen Gardner, that is that Gwen had experienced a tinny taste in her mouth and her sister, cough and headache approximately half an hour after they saw a helicopter fly overhead on the 12th June 2014.

The two women visited the Reefton Medical Centre on the 13th June 2014 where they were seen by a nurse. Her notes record that they *"Had a sore stomach, coughing, metallic taste in mouth, headache and irritating cough for 24 hours but feeling better now. Rang the poisons centre who advised they will be ok. Next time she's* [Gwen] *in, maybe blood test checking thyroid and fbc* [full blood count] *for her and sister* [Kathleen]*."*

The Medical Officer of Health, Dr Cheryl Brunton, was first contacted by the women's GP, Dr Marcia Liberatore on the 2nd of September 2014 when she left a phone message saying that she would like to discuss several patients with her. Dr Brunton replied by email suggesting times when she would be available to discuss these patients with her and they subsequently discussed several patients, including the two women. Dr Liberatore indicated that she was investigating the women's medical conditions and attempting to ascertain whether or not they were related to 1080 exposure. She and Dr Brunton spoke on the phone on the 10th September 2014 to discuss the women's health concerns. In a subsequent email, Dr Brunton advised Dr Liberatore to make a formal hazardous substances disease or injury (HSDIRT) notification if she felt that the women's symptoms and physical findings were consistent with exposure to 1080. Dr Liberatore indicated that she was still conducting further tests and other possible explanations for the women's symptoms.

8.3 Medical report requested

On the 23rd September, Dr Brunton requested by email that Dr Liberatore provide her with *"a summary of your findings in each woman's case of their symptoms, physical and laboratory findings"* which could be share confidentially with a toxicologist for an opinion on whether or not the

women's health problems could be related to 1080 exposure.

Dr Liberatore advised Dr Brunton by email on the 22nd October 2014 that the two women had been in to see her that day and were *"reporting some improvement but not fully back to baseline*". Dr Liberatore said she had referred Kathleen Bartlett for a consult with a respiratory physician and repeated her liver tests.

Dr Liberatore provided the medical report requested by Dr Brunton by email on the 16th February 2015. A copy is attached as Appendix 3. She also provided another document which she described as a protocol for sub lethal 1080 exposures. Dr Brunton sought clarification of some of the information in Dr Liberatore's report by email on the 25th February 2015. She asked if a diagnosis of adult onset asthma had been made in Kathleen Bartlett's case and also asked for clarification of a comment in the report that Kathleen had been "exposed to 1080 at least twice". She also advised Dr Liberatore that she would be sending her report for review by a clinical toxicologist and the Ministry of Health's toxicologist, Dr Natalia Foronda.

Dr Liberatore notes in her report that the women visited her on the 19th January 2105 to request that ACC claims be made in respect of their medical conditions and that this was done.

ACC's assessment of the women's claims is a separate process from this investigation and ACC's determination in their cases will be confidential to the women concerned.

8.4 Peer review of medical report

Copies of Dr Liberatore's medical report on the women were sent for peer review to three independent experts:

- Dr Natalia Foronda, Toxicologist. Ministry of Health
- Dr Michael Beasley, Clinical Toxicologist, National Poisons Centre
- Dr Penny Fisher, Environmental Toxicologist, Landcare Research

These experts were asked to comment on the medical report and give their opinion regarding the likelihood that the women's health issues could be related to 1080 exposure. Drs Beasley and Fisher provided helpful comment regarding dose assessment in environmental exposure to 1080 which has been taken into account in 8.1 above. They also provided some of the listed references for this report. The remainder of their comments are summarised below.

- Dr Liberatore overlooks some relevant issues in her report. Firstly there is little attempt at assessing exposure, though this is not straight forward with this exposure scenario.

- Secondly the evidence from several animal species and limited data in humans suggest that the persistence of an acute dose of 1080 in the body is short, with most eliminated between one to four days say. This means that many of the acute effects are of short duration, and certainly do not persist for weeks or months, nor first develop weeks or months after a single exposure.

- The experts disagree with Dr Liberatore's classification of sublethal 1080 exposure as a mitochondrial "disease"

- Case data regarding environmental exposure to 1080 is more limited than that concerning intentional ingestion of 1080 (which has been the subject of a few reports, but generally involves substantial doses).
- There is some occupational exposure data and assessments. In the early stages of this work (before improvements in workplace controls were devised and implemented) 1080 was sometimes measurable in blood or urine, in the apparent absence of overt symptoms. An estimate was made of the level in urine from chronic exposure which was probably not associated with toxic risk (Beasley et al, 2012

- Testing for fluoroacetate in urine or blood is not helpful for the current situation as it this involves a one-off exposure several months ago.

- A blood test for fluoroacetate taken as soon as possible after initial exposure would be the most definitive indicator of 1080 absorption.

- It is conceivable that had exposure somehow been very heavy at the time, some of the acute symptoms (e.g. sore stomach, irritating cough) could have been related to 1080 exposure. However, there are more likely other explanations for the range of symptoms and disorders presenting later.

In summary, and based on the medical information provided by Dr Liberatore, the expert reviewers considered that while it was possible that the initial symptoms suffered by the women could relate to 1080 exposure, this was unlikely and the women's continuing health problems were more likely to be related to other causes. Had a blood test been taken shortly after the incident it would have been possible to confirm (or otherwise) that exposure to 1080 had taken place. However, there is no test which can be done at this stage to relate the women's symptoms and signs to 1080 exposure.

Conclusions

The operator, VCS, did not breach any of the permission conditions for this operation. The women involved in the incident had inadvertently entered the operational area, having driven past but not seen two warning signs on Maori Gully Road.

The track which the women entered off Maori Gully Road had nothing at the junction to indicate that an aerial 1080 operation was taking place, though there were signs warning of an earlier ground control operation (dated March 2014). While not a public road, the track was publicly accessible and there was nothing to indicate that it was on a private forestry block. Such private forestry roads are frequently used by the West Coast public and many are unaware of the distinction between a public road and a private road that is publicly accessible.

Signage related to an earlier ground control operation in the area dated appears to have contributed to potential confusion and the date on these signs which were seem by the women may have led them to believe that any danger was past.

While no breach of permission conditions occurred, modification of operator practice regarding signage, barriers and security control points such as those recommended in this report could help prevent similar incidents in future

Based on the evidence from the investigation and exposure assessment, it is highly unlikely that the women could have been exposed at any point to significant amounts of 1080. However, because of the uncertainties around the timing of reported events, it is not possible to completely rule out that they may have experienced short duration, very low dose exposure.

On the basis of the medical report provided by the women's GP, the expert reviewers considered that while it was possible that the initial symptoms suffered by the women could relate to 1080 exposure, this was unlikely and the women's continuing health problems were more likely to be related to other causes. Had a blood test been taken shortly after the incident it would have been possible to confirm (or otherwise) that exposure to 1080 had taken place. However, there is no test which can be done at this stage to relate the women's symptoms and signs to 1080 exposure.

References

Beasley M et al	Sodium fluoroacetate (1080): assessment of occupational exposures and selection of a provisional biological exposure index. *NZ Medical Journal 2009, 122: 79-91*
Eason C and Turck P	A 90-day toxicological evaluation of compound 1080 (sodium monofluoroacetate) in Sprague-Dawley rats. *Toxicological Sciences 2002, 69: 439-447*
Goncharov NV et al	Toxicology of fluoroacetate: a review, with possible directions for therapy research. *Journal of Applied Toxicology 2006, 26: 148-161*
MBIE	Workplace Exposure Standards and Biological Indices, 7th Edition 2013. Ministry of Business, Innovation and Employment, Wellington
Jennings B	1080 bait drop-air monitoring report, Dunsinane Site, 22 October 2014. Report prepared for the Department of Conservation by Chemsafety, Christchurch
Twigg LE and Parker RW	Is sodium fluoroacetate (1080) a human poison> The influence of mode of action, physiological effects, and target specificity. *Animal Welfare 2010, 19: 249-263*

Appendices

Appendix 1 EPA Incident Report

Reporting agency: Community and Public Health, Canterbury District Health Board
Report date: 16/06/14 Contact person: Susan McEwan
Telephone: 03 3786732 Email address: sue.mcewan@cdhb.health.nz

Incident Summary

Date of incident *(13/06/14)***:**

Incident address: Maori Gully Rd, Maori Gully Creek Track –a forestry track, Arnold Valley area**.**

Type of location: Private forestry track - but accessible to public and accessed by member of public without a permit.

☐ Private dwelling X??☐ Public place X☐ Work place ☐ Motor vehicle
☐ Aircraft ☐ Aerodrome ☐ Ship ☐ Train

Type of incident *(more than one response may apply)**:***

☐ Spill/leakage ☐ Explosion ☐ Fire ☐ Spray drift
X☐ Other *(please state)* 1080 baits found on track near vehicle, person reported incident had apparently not been aware of 1080 aerial operation when entering area.

Name and amount of substance(s) involved: 3 X 1080 pellets

Effects on people:
How many people became ill or were injured? (Not sure if both women became unwell or just worried)
How many people suffered serious harm *(as defined in the 1st Schedule to the HSE Act 1992)*? 0
How many people were killed? 0
Describe the type of effects on people, extent and steps taken: 2 women concerned they had a near miss and found three 1080 pellets near their vehicle.

Environmental effects (*what was affected. More than one response may apply)**:***

☐ Water ☐ Animals ☐X Land ☐
Air ☐ Plants
Describe the type of effects, extent and steps taken: baits on a track in operational area when members of public could gain access to area, although private property and a permit need to enter area.

Other effects:) 0

☐ Road closure ☐ Evacuation of building(s) ☐ Property damage

Describe the type of effects, extent and steps taken: Two members of public concerned they had entered an area while an operation was on where a helicopter was flying nearby with a monsoon bucket/ hopper on it. Didn't see signs until leaving an area

What happened *(Give a brief account of the events which resulted in the incident)**?*** This is an interim report only.

The women concerned posted a photo on an internet site showing three 1080 pellets that they found near their vehicle once they had returned to it after walking in an operational area. It is alleged that they were unaware that an operation was on and that they drove down the forestry track (Maori Gully Creek track) parked their vehicle, went for a walk, sat by a creek, saw the helicopter operating nearby , after some unknown period they returned to their vehicle and noticed the pellets, they left the area and at that point noticed the signage. On the way out of the area they approached students/staff walking back to Maori Gully Road who were staying at Kotuku Lodge which is situated at the corner of Arnold Valley Rd and Maori Gully Rd, approx. three kilometres from the operation area.

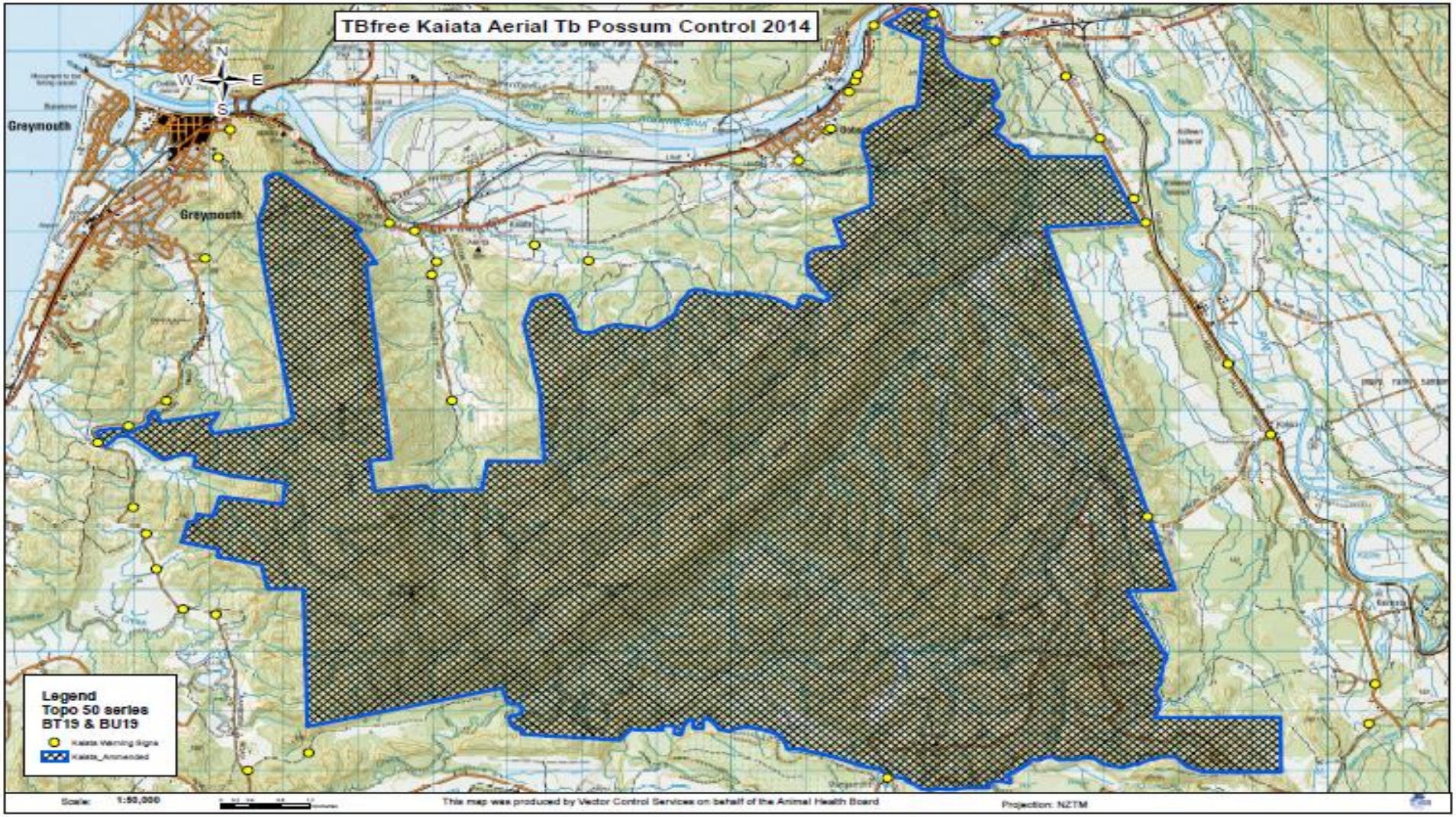
A photo showing the lower part of a vehicle and a wheel with three pellets was placed on a Buy sell and exchange website(West coast) following the incident – the time of the posting is not clear at this stage.
We found out about the incident on Friday 13/6/14 phoned by David Priest) while in the field conducting the signage audit / track clearance audit following the operation. We (Amelia Haskell Health Protection Officer) and myself returned to the C&PH office in Greymouth and met the operator David Priest and the TB Free staff member Stacy Foster.
16/6/14 I have phoned staff at the lodge who have advised that they and the students spoke with the two women late on Thursday12/6/14 afternoon anytime from 1630 – 1700.(It was still light.) sunset / dark at about 1720 at that location.
They stopped a school group near to Kotuku Lodge (owned by Riccarton High school) and asked if they knew about the 1080 drop further up the hill , said they had found some pellets, then drove off.

From all information and my observations clear signage was present in the approach to the area both at the entrance to Maori Gully Road, (almost opposite Kotuku Lodge) and within 300 metres of the entrance to the track where the incident took place. The forestry track was in the operational area, several areas where a car may have parked and two of those parking spots off the side of the track had reasonably good access to the creek nearby, one near a ford, the other through a rough bush track. The track area would have been part of the toxic baits aerial drop zone. The track in question was cleared of any toxic baits early on the morning of 13/6/14 prior to my entering the general area at 1450. No baits were observed on the 13/6/14 in the general area or on the 14/6/14 when I returned with Stacy Foster to conduct a more detailed site investigation of the specific track where the incident allegedly took place and the photograph taken.
The area is owned by PF Olsens and a permit is needed to enter this area, no permit was issued to the two persons involved in this incident.

Flight lines, photographs and other information will be added to the report – as yet the person(s) who made the allegations and posted the photo on the internet is yet to interviewed.

Susan McEwan
HSNO& Health Protection Officer

Appendix 2 Map of operational boundaries and signage location


TBfree Kaiata Aerial Tb Possum Control 2014
N
W
E
S
Greymouth
Greymouth
Legend
Topo 50 series
BT19 & BU19
Kaiata Warning Signs
Kaiata_Amended
Scale: 1:50,000
This map was produced by Vector Control Services on behalf of the Animal Health Board
Projection: NZTM

Appendix 3 Article from Greymouth Star 20 September 2014

Health concerns prompt fresh 1080 inquiry

Sisters caught in aerial poison drop

Laura Mills

Two Reefton women who were caught in the bush as 1080 poison rained from the sky last summer are now both reporting ill health.

An official investigation into the incident has been reopened.

Sisters Gwen Gardner and Kathleen Bartlett were on Maori Gully Road, near Kokiri, having a picnic after checking out a property for sale, when a helicopter with a monsoon bucket flew overhead and dropped poisoned pellets around their vehicle. They were close by at the time.

The sisters say they felt ill within 40 minutes of the drop, but did not associate it with 1080 poisoning.

They remained in the area for several hours as they did not think it could have been 1080, partly because they say a sign was outdated, and the helicopter was following the line of a creek.

However, medical tests by the Reefton GP now show Mrs Bartlett's liver is not functioning as it should, she suffers from nausea and tiredness, and coughs every night.

A trained singer, she says she knows her breathing is not right.

Mrs Gardner, who spent 15 years with St John, suffers B12 deficiency, nausea and fatigue.

After going public about the poison drop, Tb Free said the pair were on private land and should not have been there anyway.

However, the sisters said they later discovered that the photos they took of pellets lying around the vehicle actually recorded their GPS location — and proves they were on a public road at the time.

They say that after going public, they were ridiculed for allegedly being in the wrong place.

Mrs Bartlett, who describes herself as a "private, non-confrontational person", has not been named until now. However, she said this week she wanted to tell her story.

"We were two innocent people picnicking up a creek, and it was covered in 1080. For that, we are really unwell," her sister said.

The women say some warning signs out further have been updated, but not the one on Maori Gully Road.

Their GP, a locum new to the country, knew nothing of 1080 poison until they turned up for their regular tests. They say the doctor Googled the poison and demanded an investigation.

The sisters say they want to see more information made available for medical professionals.

They were "shocked" the case had been closed at the time as they were still waiting to hear back from medical and council staff. They are pleased the investigation has been reopened.

"We thought there was an investigation going on (all along)," Mrs Bartlett said.

West Coast medical officer of health Dr Cheryl Brunton said she had received some "more updated information" this week and as a result they were going to "revisit some things".

"It's still in process of investigation."

Tb Free northern South Island programme manager Matt Hickson said they were awaiting the outcome of Dr Brunton's report.

Appendix 4 Medical Report from Dr Marcia Liberatore

Report to Cheryl Brunton 12/2/2015

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

9(2)(a) [redacted]

Environmental Protection Authority
Te Mana Rauhī Taiao

INCIDENT REPORT

Reporting agency: Community and Public Health, West Coast

Report date: 11th September 2018 Contact person: Contact person: Mona Andreas

Telephone: 03 768 1160 Email address: Mona.Andreas@cdhb.heatlh.nz

Incident Summary

Date of incident: 25th August 2018

Incident address: Harold Creek

Type of location:

☐ Private dwelling ☐ Public place ☐ Work place ☐ Motor vehicle
☐ Aircraft ☐ Aerodrome ☐ Ship ☐ Train

Harold Creek

Type of incident *(more than one response may apply):*

☐ Spill/leakage ☐ Explosion ☐ Fire ☐ Spray drift
☒ Other *(please state)*

Alleged misapplication of baits in water supply catchment.

Name and amount of substance(s) involved: 1080 cereal pellets – unknown amounts

Effects on people:

How many people became ill or were injured? 0

How many people suffered serious harm *(as defined in the 1st Schedule to the HSE Act 1992)*? 0

How many people were killed? 0

Describe the type of effects on people, extent and steps taken: 0

Environmental effects (*what was affected. More than one response may apply):*

☐ Water ☐ Animals ☐ Land ☐ Air ☐ Plants

Describe the type of effects, extent and steps taken: N/A

Other effects:

☐ Road closure ☐ Evacuation of building(s) ☐ Property damage

Describe the type of effects, extent and steps taken: No effects on people.

What happened *(Give a brief account of the events which resulted in the incident)*

Alleged misapplication of baits in water catchment

A HariHari resident who is on the Harold Creek private water supply, Mr Richard Cox, lodged a complaint by email to the Medical Officer of Health (Dr Cheryl Brunton) that he had found 1080 in the Harold Creek catchment inside the exclusion zone of the aerial 1080 operation carried out in the vicinity on the 24th August 2019 (EPA Ref 18/1124/CB/GRYPH).

From: Richard L Cox <newzealandcsi@gmail.com>
Date: 31 August 2018 at 9:26:35 AM NZST
To: 'Cheryl Brunton' <Cheryl.Brunton@cdhb.health.nz>, 'Sean Sawyers' <vectorfreesean@xtra.co.nz>
Subject: Harold Creek

Good Morning, I had a visit to Harold Creek the other day and found an example of how many baits there were in and around the creek!! Not sure that they should have been in the waterways? Having worked with this stuff and from memory I believe the data sheet prohibits it from being dropped into waterways? Also I believe one of the conditions for not requiring a consent was the information on the product datasheet is complied with?

Some of the baits were certainly inside the top of the exclusion zone, although I accept first water test indicate a negative result, I have been in the bush and to the intake and there was no sign around the intake (good news)!

To say the least its is very disappointing to see and at worst its criminal, I realise things have to be done but there has to be better ways??

I have video footage of baits in the water and surrounds if you would like to see them? But from my point of view the main thing is that we learn from our mistakes and prevent reoccurrence, although most of this falls on deaf ears, but someone surely has a responsibility and should be held accountable.

Cheers
Richard

Mr Cox had earlier (24th August 2019) made email inquiries about the water supply exclusion to CPH office. He had been provided with a copy of the relevant water supply exclusion condition by the Medical Officer of Health and a map of the exclusion zone by Sean Sawyers of Vector Free Marlborough.

Dr Brunton replied to Mr Cox's email of the 31st as follows:

Dear Richard

The public health permission for this operation required the catchment for the Harold Creek water supply to be excluded. If you have evidence that this condition was breached (and this is what your email suggests) then our unit will investigate this matter as an alleged breach of conditions.

A West Coast Health Protection Officer, Mona Andreas will be in touch with later today to interview you and get details such as the day, time and place you observed baits in or around the creek. If you have any still or video recordings or GPS data I would ask that you provide this to me, Mr Andreas and Sean Sawyers.

Regards, Cheryl

In response to Mr Cox's email of the 31st August (above), the Medical Officer of Health requested that a West Coast Health Protection Officer (HPO) contact Mr Cox by telephone to seek further information about his complaint. She also emailed Sean Sawyers to request that he provide the HPO with a copy of the toxic flight lines in relation to the Harold Creek exclusion and to get his staff to visit the creek within the exclusion area to check for baits. She also requested that if any baits were found, his staff should GPS their location, photograph them and note their condition before they were removed.

Later that afternoon, the HPO (Mona Andreas) Health Protection Officer contacted the complainant and interviewed him regarding his claim of finding 1080 baits with in the exclusion zone of the Harold Creek water supply. Mr Cox informed the HPO that on the 25 August 2018 he went with two other people up the hill via the Wanganui River, up into the bush and came down to Harold Creek. He said that they had found a number of baits in and alongside the creek. Mr Cox also said that the three men had gone to the Harold Creek water supply intake with the intention of seeing if 1080 baits had been sown around it. He said they had video evidence of the baits they found "a couple of metres away from the Harold Creek water intake" and that there baits in and alongside the creek for some distance. Mr Cox said he had provided videos and GPS data were provided to Sean Sawyers but his companions had more videos which he will provide more videos if needed. He also said that he personally did not take pictures but his companions may have taken photos on their cellphones. Mr Cox mentioned that one of his companions, Phil Paterson, had collected 1080 baits from the area and buried the baits somewhere in the bush. He also added that Mr Paterson had already admitted to the Police that he had picked up toxic baits (see EPA incident report on alleged tampering with drinking water intake sent on 3rd September 2018). Finally, the HPO asked him if he will be willing to provide a formal statement if needed and Mr Cox said he had no issue with that.

Based on the information provided by the complainant, CPH office investigated this complaint as a potential breach of permission. The complainant subsequently provided links to a number of videos which he and the other two men filmed on the 25th August 2018. CPH provided these links to the Police to assist their investigation of alleged tampering with the Harold Creek water intake, as they included footage of at least one of the men handling 1080 baits (and none of the three men has a CSL).

As requested by Dr Brunton, the operator's staff also checked the Harold Creek up to and beyond the exclusion zone on the 1st September and found no 1080 baits within the exclusion zone. On 3rd September, the operator provided a map including the GPS waypoints (where he said baits were located) provided by Mr Cox as well as the margins of the exclusion zone and baits located by the operator (attached as last page of this report). Mr Sawyer also advised by email that:

Hi Cheryl,

Further to the complaint from Richard Cox last week and my update regarding the inspection undertaken by VFML on Saturday, please attached a map showing the route taken by our field operative overlaid with the bait finds Richard claims to have recorded (sent to this morning) during his inspection.

As noted in the update on Saturday, our field operative did not locate any bait within the exclusion area. His inspection, for which the track log is shown in green on the map, included tributaries of Harold Creek and some distance upstream of the operational boundary in the main waterway itself. All up, he spent nearly five hours in the catchment and followed all of the minor waterways until they became too bluffy. Interestingly the only bait he found (green dot) was located some distance upstream of those Richard had recorded in the main waterway, which suggests that Richard or others may have been removing baits. To that end, our guy also located a plastic zip-lock bag beside the creek weighted down by a rock. He has a photo of this if required. No bait in it.

Given the numbering of Richards waypoints it would appear that he accessed the control area from the TL bank of the Wanganui River, upstream of the end of Hendes Creek Road and moved around inside the operational boundary toward the TR side of Harold Creek.

All of his waypoints are located at least 24m or more inside the operational boundary with the exception of one on the TR of Harold Creek, approximately 290m beyond the operational shape (just outside the no-fly area for the water supply). I'm not certain what that point is intended to represent (whether bait or otherwise), but I have left a message for Richard asking that he call me. His original email made reference to visiting the intake on the same trip, so it is possible this point indicates some part of his route.

Unfortunately we didn't have access to his GPS data in a useful format before our inspection, so I propose to have the waypoint outside the consent area inspected during the sign check this week. In saying that, I do find it somewhat dubious that a bait would be located in dense bush so far from the control area with none found in the intervening space.

Cheers, Sean

Sean Sawyers
Operations Manager (Aerial)
Vector Free Marlborough Limited
Email: vectorfreesean@xtra.co.nz
Mobile: 021 502 106

The waypoint highlighted in the email above was later inspected by VFM and no bait was found.

Mr Cox was interviewed in person at his residence (4174 Main Road, Hari Hari) by Marie Scott, a Ministry of Health contractor (and HSNO Enforcement Officer) on the 8th September. Mona Andreas, HPO, was also present. Mr Cox gave a statement which he signed (excerpts below). Mr Cox is a licensed private investigator and also has experience as a firearms instructor and had held a CSL in the past.

Q	What is your background?
A	Ex Police. West Road asked me to replace the socks on the Harold reservoir. About 8 months ago. I work for the Mountain Safety Council, for the Police as a Practical Firearms Instructor.
Q	Do you have a CSL? [Controlled Substance Licence?]
A	No. But I did have once. Target Pest Control for Target Canterbury. 2006. I have

	had training on HSNO.

At the interview Mr Cox subsequently explained that the waypoints he had recorded on the True Right of Harold Creek just outside the no-fly area were in error and did not represent the location of baits.

Mr Cox said that the two men accompanying him were Dan Lane (his neighbour) and Phil Paterson. He also said that Mr Lane had had a firearm.

Q	Who had the firearm?
A	Dan. He said he was going to shoot animals in distress. I never checked if he had a licence.

He said Mr Paterson had collected 1080 baits using a plastic bag

Q	Then what?
A	Phil Paterson picked them up. Put them in a plastic bag. Used 1 to pick them up, one to put them in.
Q	What happened?
A	He removed them out. Big pocket in his jacket. Removed them. When left farm was still in his possession. I told him its an offence to remove them. He said he was going to remove them.

Summary and Conclusions

Mr Cox's complaint was investigated as a possible breach of permission (i.e. that 1080 baits had been applied in the exclusion zone for the Harold Creek water supply). Our investigation established that no breach had occurred and that the baits that Mr Cox and his companions located were outside the exclusion zone.

Testing of the Harold Creek water supply after the aerial 1080 operation (including an additional test done as part of an investigation into possible tampering with the Harold Creek water supply intake) did not find any detectable 1080, so no risk to public health occurred.

Some of the information provided by the complainant identified other potential offences (e.g. handling controlled substances without a CSL). Other information was relevant to a Police investigation into alleged tampering with the Harold Creek water intake. This information, including links to video footage, GPS data and Mr Cox's statement were provided to NZ Police to assist their investigation.

Environmental Protection Authority
Te Mana Rauhī Taiao

INCIDENT REPORT