



THE UNIVERSITY OF  
MELBOURNE

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SCHOOL OF ENTERPRISE  
442 AUBURN ROAD  
HAWTHORN VICTORIA 3322  
AUSTRALIA  
[www.soe.unimelb.edu.au](http://www.soe.unimelb.edu.au)  
TEL: 61 3 9810 3298  
FAX: 61 3 9810 3149

**Random Audit of Historical**  
**Water Quality Monitoring Data**  
**and Associated**  
**Operational/Landscape and**  
**Climate Data**

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**Second Report – 26 April 2007**

**Prepared by**  
**Professor Ian D. Rae**

## Contact Details

For Contractual and Administrative details:

Ms. Sue Fitzpatrick  
Project Manager  
School of Enterprise  
442 Auburn Road  
Hawthorn VIC 3122

Phone: +61 3 9810 3116  
Fax: +61 3 9810 3149  
Email: [s.fitzpatrick@soe.unimelb.edu.au](mailto:s.fitzpatrick@soe.unimelb.edu.au)

For Technical Details:

Professor Ian Rae

Phone: +61 3 93973794  
Fax: +61 3 93973794  
Email: [iandrae@bigpond.com](mailto:iandrae@bigpond.com)

## **Executive Summary**

The second stage of the audit was conducted on 19 and 20 April 2007 at the offices of Forestry Tasmania in Hobart. Data for 60 spray operations during the period December 2000 to September 2006 were examined, and the extent to which they met the monitoring protocol was considered.

Analytical results for samples collected following 60 spray operations were examined, and consideration was given to the extent to which they met the monitoring protocol. Consequently, 113 determinations have been identified as meeting the criteria and are thus rated as eligible for use in the PIRI study. Usable results were reported for six herbicides and one insecticide. In none of the samples was any pesticide detected. Analyses for glyphosate were not performed after April 2004 (with few exceptions before and after).

The reasons for rejecting a small number of the results included spraying under high-wind conditions, inappropriate sampling site, delays in collecting samples and delays in submitting them for analysis. In a few cases, analytical results were not reported for sprayed pesticides, and in a few cases results were returned for pesticides that had not been sprayed. Such instances did not significantly affect the quantity of valid data available for assessment.

### **1. Introduction**

The second stage of the audit was conducted on 19 and 20 April 2007 at the offices of Forestry Tasmania in Hobart.

Forestry Tasmania staff had assembled data for 60 spray operations during the period December 2000 to September 2006. All data were examined and assessments were made of their usefulness for the PIRI analysis.

In a few cases, no data were available for samples relating to the spray operation. When Glyphosate alone was sprayed after April 2004, the absence of data is explained by the fact that Glyphosate analyses were not carried out after this date (see Section 2.7). No data were available for two of the spray operations ((CH033B and PA102D) that involved Alpha-cypermethrin.

### **2. Application of criteria**

#### **2.1 Pre-spray samples**

Pre-spray samples were collected and analyzed for most spray operations. No pesticides were detected in any of these samples (recorded as ND in Table 2).

In a few cases, no data were available for a pre-spray sample, and it is unclear whether a sample was collected and not analyzed or whether no sample was collected. In each of these cases, however, the post-spray sample was collected and no pesticide was detected in it. The reason for collecting and analyzing a pre-spray sample was to assist in explaining any post-spray detection of pesticide. That is, if pesticide were detected in the pre-spray sample, then this value would need to be subtracted from any post-spray

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reading in order to give a true figure for pesticide release as a result the spraying operation. When no pesticide is detected in the post-spray sample, then, it is unnecessary (for the present purposes) to know whether any pesticide was present before the spraying operation, so the need for a pre-spray result is obviated.

For the spray operation in coupe BS104K (Bass, Ben Nevis) in June 2005, the recorded data show the pre-spray sample as being collected on the day after the spray operation. There are several places in the chain of collecting, recording, transcribing and entering data where an error might have occurred, and in this case it was not possible to explain the anomaly. I have assumed that the sample was taken before the spray operation, and that the negative result (ND) was valid, and therefore that the post-spray result is eligible for inclusion in the PIRI study.

## **2.2 Blanks**

Data sheets show that blanks were analyzed in all cases and did not reveal any anomalies.

## **2.3 Post-spray samples**

The protocol requires the post-spray sample to be collected 30-120 minutes after the spray operation but this is seldom achieved. I suggested in my first report that the protocol was unrealistic in its expectations of such prompt analysis, so it was not surprise to find when examining the present data set that sampling was often late.

It might be objected that, if scientists were present to take pre-spray samples then they would already be in the area when spraying took place and therefore should be able to take post-spray samples within the expected time period. However, in 38 of the 60 cases, pre-spray samples were collected days or (in a few cases) weeks before the spray operation. In 4 cases, no data were reported for a pre-spray sample and it was unclear whether any such sample was collected. Given the ubiquity of negative results (ND), however, the post-spray and post-rain data for these cases were judged to be eligible for inclusion in the PIRI study.

Some compromise seemed called for, so where the delay in collection was not greater than one day, the post-spray sample was judged to be eligible for inclusion in the PIRI study. Longer delays, however, militated against inclusion except where (as is discussed in the following section) the sample could be regarded as meeting the 'post-rain' criterion.

The protocol calls for sample to be delivered to the laboratory within four days, and while this was usually achieved there were some delays. As before one day's grace was allowed, but longer delays seemed to admit the possibility that any pesticide present may have degraded during storage and so results for such samples were judged to be ineligible for the PIRI study.

## **2.4 Post-rain samples**

As noted before, the 'significant' rain event specified in the protocol is undefined and so judgment must needs be exercised as to whether reported post-rain data should be eligible for inclusion in the PIRI study.

In some cases there was an extended period between the spray operation and the collection of the post-rain sample. For example, after spraying of coupe AR046J on 13 April 2004, the post-rain sample was not collected until almost three weeks later, on 3 May. Given the prevailing rainfall regime, it is likely that there was significant rain well before 3 May, and so as a precautionary measure this sample was judged to be ineligible for inclusion in the PIRI study. Six other cases are noted in Table 2.

In a few of the cases where collection of the post-spray sample was delayed, it is possible that there had been a significant rain event between spraying and collection, in which case the 'post-spray' sample would be eligible for use in the PIRI study as a 'post-rain' sample. Rainfall records are available for these cases and Ms Trainer can provide information that might assist in validating this unconventional use of a small number of results.

## **2.5 Conditions**

The prevailing wind speeds were significantly above the protocol level for only two spray operations, and so data for those cases were judged to be ineligible for the PIRI study. In a further 14 cases, no wind conditions were reported but since the analytical results for all negative (ND) these cases were judged to be useful for the PIRI study on the grounds that wind speeds were most likely to have been in accord with the protocol (not greater than 12 km/hr). In a few of those cases, wind speeds ranges were reported, for example '5-15 km/hr', but the results were judged to be useful.

It was unclear from many of the reports that spraying of roads had been avoided. Presumably, such spraying would have resulted in excessive run-off. Given the ubiquity of negative (ND) analytical results, it was judged that nothing untoward had taken place during spraying and so results associated with such events, unless ruled out on other grounds, were judged to be eligible for the PIRI study.

## **2.6 Training**

As before, there was evidence that most samples were collected by trained officers.

## **2.7 Laboratory analyses**

In my first report I raised the issue of possible Glyphosate retention by sediments, since a stated advantage of the use of this herbicide is that it binds strongly to soil, and I questioned whether the filtering of samples before their analysis for Glyphosate might give rise to anomalously low analytical results. This matter was discussed with several analysts, whose opinion was that no significant anomaly would result unless sediment load of the water sample was high. This condition seems not to be met by the samples obtained in Forestry Tasmania work.

I was informed that, because of the preponderance of negative results for Glyphosate analyses, presumably as a result of the binding to soil mentioned above, a decision had been taken to discontinue analyzing for this herbicide. The operative date seems to have been April 2004, although there were isolated cases before (when Glyphosate analysis was not reported) and after this date (when it was). In my judgment, this discontinuation would not have resulted in any loss of integrity of monitoring data.

While a relatively small number of pesticides were employed in spray operations, the concentration of particular mixtures varied. In view of the ubiquity of negative (ND) results, it was decided not to include in this report any details of concentrations applied. As different commercial products were used for the same actives, there would have been variation, too, in inactives such as adjuvants and wetting agents. The active and the names of the commercial products used that contained them are shown in Table 1.

**Table 1: Active pesticide ingredients, trade names and frequency of application.**

Active chemical	Trade name	Times applied
Metsulfuron-methyl	Brushoff	33
	Brushkiller	1
	Met 600	1
	Eucmix GR (also contains Terbacil)	1
Sulfometuron-methyl	Oust	21
	Mako	3
Glyphosate	Roundup Power Max	15
	Roundup Max	12
	Roundup CT	3
	Roundup Biactive	4
	Roundup Dry	2
Alpha-cypermethrin	Roundup	1
	Fastac Duo	1
	Dominex	5
Clopyralid	Lontrel	4
	Clomac	3
Haloxypop-methyl	Verdict	2
MCPA	MCPA	1
Terbacil	Eucmix GR (also contains Metsulfuron-methyl)	1

Detection limits for the analysis were, as reported in my first report, generally below 0.1 µg/L.

There were isolated cases in which no analytical result was reported for a pesticide which had been used in the spray operation, although results were returned for other pesticides involved. This occurred for spraying of:

- coupe IR064A in January 2001, when a result (albeit ND) was returned for Clopyralid but not for Haloxypop-methyl;
- coupe TA003I in August 2003 when pre-spray results were returned for Sulfometuron-methyl and Glyphosate but not for Metsulfuron-methyl, and then when all three were sprayed, post-rain results were returned for Metsulfuron-methyl and Glyphosate but not Sulfometuron-methyl; and
- coupe TG020C/D in April 2002 when pre-spray analyses were returned for Glyphosate and Sulfometuron-methyl, but not for Clopyralid which was also sprayed in that operation.

It was unclear whether the analyses were never performed, or that results were not reported, or that there had been a data-handling error that resulted in their absence from the Forestry Tasmania compilation. Fortunately, such discrepancies were rare and many useful results were available for the PIRI study.

The converse of these absences, is a group of three cases in which an analytical result was returned for a pesticide that had not been used in that spray operation, together with results for those pesticides which had been sprayed (except Glyphosate after April 2004). The phantom results involved Sulfometuron-methyl (BS104K and EP064C/G, Metsulfuron-methyl had been sprayed), and Metsulfuron-methyl (PA134B, Clopyralid had been sprayed).

### **3. Data compilation**

The data examined for the preparation of this second report are report in Table 2 (contained in the Appendix to this document). The last column of the table contains my judgment as to whether each of the analytical results is eligible for use in the PIRI study.

The spray operations are arranged in order of the coupe number, which appears in column 2 together with the location of the coupe. The Forestry Tasmania asset number is shown in column 1.

The pesticide involved in each spray operation is shown in column 3. As noted in Section 2.7 (above), the concentration and the commercial product identification are not included here, in order to make the table of manageable size and because all results being ND it is not possible to differentiate between the impacts of different products. Product information is available in the compilation held by Forestry Tasmania.

In column 4 the date of the spray operation is given and some information is provided about the conditions under which the spraying was done, namely whether or not the protocol conditions (wind speed not more than 12 km/hr) were met.

Column 5 shows the date on which sampling was undertaken, and the nature of the sample – pre-spray, post-spray or post-rain – is indicated in column 6. This column also contains the analytical result, 'ND' indicating that the pesticide was not detected by the analyst. Where two or more pesticides were sprayed together, the information in column 6 will reflect this in the following ways:

- when results were returned for all of the pesticides, this is indicated by a multiplier in front of the analytical result. The entry '3xND', for example, means that results were returned for all three pesticides sprayed, albeit these results were ND (substance not detected by the analyst). The spraying of coupe BS105I in July 2003 provides an example.
- for cases where Glyphosate was sprayed after April 2004, no analytical result is reported for this substance, so the multiplier will be one less than the number of pesticides used in the spray operation. The spraying of coupe AR046J in March 2003 provides an example.

- In a few cases there is no reported result for a pesticide that was used in the spray operation, or a result was returned for a pesticide that was not used. These cases are discussed in Section 2.7 (above).

In the final column, a judgment is given about the eligibility of the analytical results in the PIRI study. Where several analytical results are eligible, this is indicated by a multiplier in front of the 'yes'.

#### **4. Concluding remarks**

Analytical results for monitoring of 60 spray operations were examined, and consideration was applied to the extent to which the samples met the monitoring protocol. Consequently, 113 analytical results have been identified as meeting the criteria and are thus rated as eligible for use in the PIRI study. Usable results were reported for six herbicides and one insecticide. All of the results were classified 'ND', because no pesticide residue was detected in any of them.

## APPENDIX

**Table 2: Spray operations (location, date, pesticides), sample results and comments, and judgment of eligibility for the PIRI study,**

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
21630	Bass, Ben Nevis AR023B	Metsulfuron-methyl	03.04.04 Conditions OK	03.04.04	Pre-spray ND	
				03.04.04	Post-spray ND	Yes
				03.05.04	Post-rain ND Probably not the first rain event.	No
14620	Huon, Arve, AR046J	Metsulfuron-Methyl, Sulfometuron-methyl, Glyphosate	24.03.05 Conditions OK	21.03.05	Pre-spray 2xND	
				24.03.05	Post-spray 2xND	2xYes
				04.04.05	Post-rain 2xND	2xYes
		Sulfometuron methyl	13.04.04 Conditions OK	13.04.04	Pre-spray ND	
				19.04.04	Post-spray ND Late sampling	No
				03.05.04	Post-rain ND Probably not the first rain event.	No
		Metsulfuron-methyl, Glyphosate	31.07.03 Conditions OK	31.07.03	Pre-spray 2xND	
				01.08.03	Post-spray 2xND	2xYes
				09.08.03	Post-rain 2xND	2xYes
32255	Huon, Arve, AR064D/K	Sulfometuron-methyl	09.09.03 Conditions OK	09.09.03	Pre-spray ND	
				11.09.03	Post-spray ND Sample late to laboratory	No
				17.09.03	Post-rain ND	Yes
		Metsulfuron-methyl, Glyphosate	11.09.06 Conditions OK	10.09.06	Pre-spray ND	
				11.09.06	Post-spray ND	Yes
				25.09.06	Post-rain ND Late sampling	No
		Sulfometuron-methyl	25.08.06 Conditions OK	04.08.06	Pre-spray ND	
				25.08.06	Post-spray ND	Yes

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
				25.09.06	Post-rain Probably not the first rain event	No
18376	Huon, Arve, AR086F	Metsulfuron-methyl, Glyphosate	03.04.04 Conditions OK	03.04.04	Pre-spray 1xND	
				03.04.04	Post-spray ND Class 1 stream	No
				03.05.04	Post-rain ND Class 1 stream	No
		Metsulfuron-methyl, Glyphosate	31.07.03 Conditions OK	31.07.03	Pre-spray 2xND	
				31.07.03	Post-spray 2xND Class 1 stream	No
				09.08.03	Post-rain 2xND Class 1 stream	No
24506	Huon, Bamback, BB027A	Sulfometuron-methyl	04.08.06 Conditions OK	03.08.06	Pre-spray ND	
				04.08.06	Post-spray ND	Yes
				25.09.06	Post-rain ND Probably not the first rain event.	No
		Metsulfuron-methyl, Glyphosate	11.09.06 Conditions OK	10.09.06	Pre-spray 1xND	
				11.09.06	Post-spray ND	Yes
				25.09.06	Post-rain ND	Yes
32193	Derwent, Bradys, BD023A	Metsulfuron-methyl, Sulfometuron-methyl	27.05.06 Conditions not stated.	27.05.06	Pre-spray 2xND	
				27.05.06	Post-spray 2xND	2xYes
				15.08.06	Post-rain 2xND Probably not the first rain event.	No
29925	Bass, Ben Nevis, BS104K	Glyphosate, Metsulfuron-methyl	04.06.05 Conditions OK	05.06.05	Pre-spray 1xND	
				05.06.05	Post-spray 1xND	Yes
				15.06.05	Post-rain ND for Metsulfuron-methyl and also for Sulfometuron-methyl	Yes
13099	Bass, Ben Nevis, BS105I	Metsulfuron-methyl,	09.07.03 Conditions		No pre-spray sample	

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
		Sulfometuron-methyl, Glyphosate	OK			
				10.07.03	Post-spray 3xND	3xYes
				23.07.03	Post-rain 3xND	3xYes
21450	Bass, Ben Nevis, BS118E	Glyphosate, Metsulfuron-methyl, Sulfometuron-methyl	25.06.03 Conditions OK		No pre-spray sample	
				28.06.03	Post-spray 3xND	3xYes
30769	Bass, Ben Nevis, BS127A	Metsulfuron-methyl, Glyphosate	09.08.02 Conditions OK	18.06.02	Pre-spray 2xND	
				12.08.02	Post-spray 2xND Late sampling	No
				08.10.02	Post-rain 2xND Probably not the first rain event.	No
29414	Bass, Barrow, BW102D	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	31.03.05 Conditions OK	30.03.05	Pre-spray 2xND	
				01.04.05	Post-spray 2xND	2xYes
				14.04.05	Post-rain 2xND	2xYes
14555	Bass, Cascade, CC133B	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	08.05.03 Conditions OK	06.05.03	Pre-spray 3xND	
				08.05.03	Post-spray 3xND	3xYes
				16.05.03	Post-rain 3xND	3xYes
21914	Murchison, Christmas Hills, CH033B	Metsulfuron-methyl, Glyphosate	05.10.01 Conditions OK	05.10.01	Pre-spray 2xND	
				05.10.01	Post-spray 2xND Samples somewhat late to laboratory.	2xYes
				12.10.01	Post-rain 2xND Samples somewhat late to laboratory.	2xYes
		Alpha-cypermethrin	15.12.02 Conditions OK		No data available	
13481	Murchison, Emu, EM007F	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	12.04.05 Conditions not stated	04.04.05	Prespray 2xND	
				13.04.05	Post-spray 2xND	2xYes

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
					No post-rain data available	
		Clopyralid, Haloxyfop-methyl	16.11.05 Conditions not stated	15.11.05	Pre-spray 2xND	
				23.11.05	Post-spray 2xND Late sampling	No
				01.12.05	Post-rain 2xND	2xYes
		MCPA, Clopyralid	15.01.03 Conditions OK	14.01.03	Pre-spray 2xND	
				16.01.03	Post-spray 2xND	2xYes
					No post-rain data available	
14626	Huon, Esperence, EP032I	Metsulfuron-methyl, Glyphosate	03.08.03 Conditions OK	03.08.03	Pre-spray 2xND	
				03.08.03	Post-spray 2xND	2xYes
				09.08.03	Post-rain 2xND	2xYes
21105	Huon, Esperence, EP059D	Metsulfuron-methyl, Glyphosate	26.04.06 Conditions OK	25.04.06	Pre-spray 1xND	
				26.04.06	Post-spray 1xND	Yes
				03.05.06	Post-rain 1xND	Yes
		Sulfometuron-methyl	16.05.06 Conditions OK	15.05.06	Pre-spray ND	
				17.05.06	Post-spray ND	Yes
					No post-rain data	
24097	Huon, Esperence, EP064C/G	Metsulfuron-methyl, Glyphosate	07.04.05 Conditions OK	06.04.05	Pre-spray 1xND	
				08.04.05	Post-spray 1xND	Yes
				02.05.05	Post-rain 1xND Sulfometuron-methyl also ND	Yes
15375	Bass, Evercreech, EV022D	Clopyralid	26.08.06 Conditions OK	15.08.06	Pre-spray ND	
				28.08.06	Post-spray ND Late sampling	No
				12.09.06	Post-rain ND No rain event.	No
		Metsulfuron-methyl, Glyphosate	19.04.04 Conditions not stated		No pre-spray sample	
				19.04.04	Post-spray 2xND Sample somewhat late to laboratory.	2xYes
				05.05.04	Post-rain 2xND	2xYes
19959	Derwent,	Metsulfuron-	05.04.04	05.04.04	Pre-spray 2xND	

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
	Florentine, FO034F	methyl, Sulfometuron-methyl, Glyphosate	Conditions not stated			
				05.04.04	Post-spray 2xND Sample late to laboratory	2xYes
				15.04.04	Post-rain 2xND Sample somewhat late to laboratory	2xYes
22751	Derwent, Forestier, FT002E	Glyphosate, Metsulfuron-methyl	27.08.02 Conditions OK	22.08.02	Pre-spray 2xND	
					No post-spray data available	
				11.09.02	Post-rain 2xND	2xYes
22750	Derwent, Forestier, FT008N	Metsulfuron-methyl, Glyphosate	27.08.02 Conditions OK	22.08.02	Pre-spray 2xND	
					No post-spray data available	
				11.09.02	Post-rain 2xND	2xYes
21970	Murchison, Inglis, IR057A	Alpha-cypermethrin	22.12.05 Conditions OK	20.12.05	Pre-spray ND	
				22.12.05	Post-spray ND	Yes
				03.01.06	Post-rain ND	Yes
21972	Murchison, Inglis, IR064A	Clopyralid, Haloxyfop-methyl	06.01.05 Conditions not stated	16.12.04	Pre-spray 2xND	
				17.01.05	Post-spray ND Clopyralid, but no analysis for Haloxyfop-methyl Late sampling	No
				02.02.05	Post-rain 2xND Erin: w,d	2xYes
		Terbacil, Metsulfuron-methyl	29.10.02 Conditions windy	07.10.02	Pre-spray 2xND	
				07.11.02	Post-spray 2xND Late sampling	No
					No post-rain sample	
		Metsulfuron-methyl, Glyphosate	09.10.01 Conditions windy	08.10.01	Pre-spray 2xND	
				22.10.01	Post-spray 2xND Late sampling	No
				24.10.01	Post-rain 2xND	2xYes
16564	Murchison, KARA,	Sulfometuron-methyl,	21.05.04 Conditions	18.05.04	Pre-spray 1xND	

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
	KA015B	Glyphosate	OK			
					No post-spray sample	
				25.05.04	Post-rain ND	Yes
21102	Huon, Kemandie, KD018B	Sulfometuron-methyl	20.04.05 Conditions not stated	18.04.05	Pre-spray ND	
				22.04.05	Post-spray ND Late sampling	No
				02.05.05	Post-rain ND	Yes
		Metsulfuron-methyl, Glyphosate	07.04.05 Conditions OK	06.04.05	Pre-spray 1xND	
				07.04.05	Post-spray ND	Yes
				02.05.05	Post-rain ND Probably not the first rain event	No
21103	Huon, Kemandie, KD021C	Sulfometuron-methyl	21.04.05 Conditions OK	20.04.05	Pre-spray ND	
				22.04.05	Post-spray ND	Yes
				02.05.05	Post-rain ND	Yes
		Metsulfuron-methyl, Glyphosate	07.04.05 Conditions OK	06.04.05	Pre-spray 1xND	
				07.04.05	Post-spray ND	Yes
				02.05.05	Post-rain ND	Yes
29849	Bass, Moorina, MO112C	Alpha-cypermethrin	04.07.06 Conditions not stated	28.06.06	Pre-spray ND	
				04.07.06	Post-spray ND	Yes
				06.07.06	Post-rain ND	Yes
		Metsulfuron-methyl, Glyphosate Sulfometuron-methyl	19.10.05 Conditions not stated	13.10.05	Pre-spray 2xND	
				20.10.05	Post-spray 2xND	2xYes
					No post-rain sample	
29926	Bass, Moorina, MO117A	Glyphosate, Metsulfuron-methyl, Sulfometuron-methyl	19.10.05 Conditions not stated	13.10.05	Pre-spray 2xND	
				20.10.05	Post-spray 2xND	2xYes
				24.10.05	Post-rain 2xND	2xYes
		Alpha-cypermethrin	28.06.06 Conditions not stated	28.06.06	Pre-spray ND	
				04.07.06	Post-spray ND Late sampling	No

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
				06.07.06	Post-rain ND	Yes
		Clopyralid	26.08.06 Conditions OK	15.08.06	Pre-spray ND	
				28.08.06	Post-spray ND Late sampling	No
				12.09.06	Post-rain ND No significant rain event	No
17215	Bass, Payanna, PA102D	Metsulfuron-methyl, Glyphosate	02.04.05 Conditions OK	02.04.05	Pre-spray 2xND	
				02.04.05	Post-spray 2xND	2xYes
				03.05.05	Post-rain 2xND Probably not the first rain event.	No
		Alpha-cypermethrin	28.06.06 Conditions not stated		No data available	
15395	Bass, Payanna, PA134B	Clopyralid	19.12.05 Conditions not stated	06.12.05	Pre-spray ND Also ND for Metsulfuron-methyl	
				19.12.05	Post-spray ND	Yes
				05.01.06	Post-rain ND	Yes
12236	Bass, Payanna, PA134C	Metsulfuron-methyl, Glyphosate	01.07.02 Conditions OK	23.05.02	Pre-spray 2xND	
				02.07.02	Post-spray 2xND Samples late to laboratory	No
				10.07.02	Post-rain 2xND	2xYes
16052	Bass, Payanna, PA157A	Glyphosate, Metsulfuron-methyl	01.07.02 Conditions OK	23.05.02	Pre-spray 2xND	
				02.07.02	Post-spray 2xND Sampling site inappropriate	No
				10.07.02	Post-rain 2xND Sampling site inappropriate	No
13410	Murchison, Pruana, PU038A	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	05.04.03 Conditions not stated	03.04.03	Pre-spray 2xND	
				10.04.03	Post-spray 3xND Late sampling	No
				15.04.03	Post-rain 3xND	3xYes
21988	Murchison, Pruana, PU041I	Glyphosate, Sulfometuron-methyl	09.12.00 Conditions OK	04.12.00	Pre-spray 2xND	
				18.12.00	Post-spray 2xND	No

Asset ID	Location (district, block, name)	Pesticide	Spray date	Sample date	Comment	Use in PIRI?
					Late sampling	
				27.12.00	Post-rain 2xND	2xYes
13405	Murchison, Pruana, PU042C	Sulfometuron-methyl	05.04.03 Conditions not stated	03.04.03	Pre-spray ND	
				07.04.03	Post-spray ND Late sampling	No
				15.04.03	Post-rain ND	Yes
15559	Bass, Ringarooma, RR127C	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	08.05.04 Conditions OK		No pre-spray sample	
				11.05.04	Post-spray 2xND Late sampling	No
				21.05.04	Post-rain 2xND	2xYes
19890	Derwent, Taranna, TA003L	Glyphosate, Metsulfuron-methyl, Sulfometuron-methyl	12.08.03 Conditions OK	12.08.03	Pre-spray 2xND but no result for Metsulfuron-methyl	
				12.08.03	Post-spray 3xND	3xYes
				29.09.03	Post-rain 2xND but no result for Sulfometuron-methyl.	2xYes
		Glyphosate	06.09.04 Conditions OK		No data available	
13919	Murchison, Temma, TE022D	Metsulfuron-methyl, Sulfometuron-methyl, Glyphosate	20.10.02 Conditions OK	17.10.02	Pre-spray 3xND	
				21.10.02	Post-spray 3xND	3xYes
					No post-rain data.	
13927	Murchison, Togari, TG020C/D	Glyphosate, Clopyralid, Sulfometuron-methyl	17.04.02 Conditions OK	15.04.02	Pre-spray 2xND but no data for Clopyralid	
				22.04.02	Post-spray 3xND Late sampling	No
				21.05.02	Post-rain 3xND Probably not the first rain event	No
		Alpha-cypermethrin	11.12.05 Conditions not stated	02.12.05	Pre-spray ND	
				13.12.05	Post-spray ND Late sampling.	No
					No post-rain data	

