DEPARTMENT *of* INFRASTRUCTURE, ENERGY *and* RESOURCES

TASMANIA

ROADWORKS SPECIFICATION

R100 – Frost, Ice and Snow Management

November 2010

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R100.1 SCOPE

This Specification sets out the requirements for the management of frost, ice and snow on the State Road Network.

R100.2 REFERENCES

This Specification shall be read in conjunction with the following Specifications:

- G1 – General Provisions/MG1 Maintenance General Provisions
- G2 - Contract Management Plan/MG2 Maintenance Contract Management Plan
- G3 - Traffic Management
- R40 – Pavement Base and Subbase
- R101 – Emergency Management

R100.3 DEFINITIONS

- **Grip** is a channel cut through restricting material that allows the channelling of water away from the pavement
- **Ice** includes frost
- **Treatment** is the work required to deal with frost, ice and snow hazards
- **BoM -** Bureau of Meteorology.

R100.4 WORK CATEGORIES

For the purpose of definition and payment, the work required shall include the following categories:

- Inspections for frost, ice and snow
- Frost and ice Gritting
- Other frost and ice mitigation measures
- Snow Clearing.

R100.5 BACKGROUND

R100.5.1 General

The extent and severity of cold weather events on the Tasmanian Road Network is often variable and sometimes unpredictable. Management of these events is aimed at ensuring roads that are affected by frost, ice or snow are identified early and treated on a priority basis.

During a widespread or severe cold weather event, most members of the public will be aware of potentially hazardous driving conditions. Some motorists however may have unrealistic expectations in regard to how well and how soon roads are treated for frost and ice and in the case of inexperienced drivers or those unfamiliar with Tasmanian roads they may be unaware of the hazards.

Frost and ice generally form in the early hours of the morning between 5.30am and 8am as the overnight temperatures continue to drop and before the warming effects of the sun can take effect. It normally will not occur after extended warm weather where pavements have absorbed enough heat to prevent the formation of frost or ice. However frost and ice may occur outside of these hours depending on weather and site conditions particularly in areas that have limited exposure to sunlight. The Contractor shall identify these areas and incorporate appropriate actions in the Contract Management Plan.

Frost and ice are more likely during the colder months and following one or more nights with clear skies and still conditions with little or no wind. Cloud cover, rain and wind will generally discourage the formation of frost or ice. The Contractor shall take these factors into account in assessing BoM forecasts and the likelihood of frost and ice prior to and during cold weather events.

R100.5.2 Client Supplied Information

For client supplied information refer Annexures included in this specification, the content is summarised in *Table R100.1 Client Supplied Information*.

Table R100.1 Client Supplied Information

Annexure	Details
R100A	Location details of permanent and closable frost ice and snow warning signs and temperature sensitive warning signs.
R100B	Known ice sites with AADT (as at June 2009), weather stations, temperature trigger, gritting data and inspection/gritting priorities.
R100C	Known snow sites.
R100D	Calcium Chloride Sites.
R100E	BoM advice example.
R100F	Weather Stations and the number of days below 4^0C and 2^0C for the nominated months (from BoM data).
R100G	Calcium Chloride product data.
R100H	Report form samples.

Each location (road name, number, link and chainage) has been allocated a Bureau of Meteorology (BOM) weather forecast station and a trigger temperature, either 2^0C or 4^0C. The locations listed should be used as a guide only and the Contractor shall inspect and grit or clear all locations within the Contract area that are affected by ice or snow.

The gritting data is from the years nominated.

Notes:
1/ All Annexures A, B C, D and F are available in excel format from Documents.RandT@dier.tas.gov.au as are the report form samples (annexure H).

2/ Disclaimer
The information is provided on the basis that:

- *The Principal will not be liable to it in relation to any claim arising out of, or in any way connected with, any errors in or omissions from the information provided;*
- *the Principal does not warrant or represent that any data or information provided:*
  - *is correct, free from error or fit for any purpose;*
  - *has been prepared to meet the user's requirements; and*
- *The Contractor will make its own enquiries, investigations and examinations of information provided to or received by it and obtain its own appropriate professional advice before using or placing any reliance on it.*

R100.6 CLOSURE OF ROADS

The Contractor shall provide advice on the condition of the site to the Superintendent at its earliest convenience if it considers that the conditions require the closure of the road. Roads may only be opened or closed at the direction of the Superintendent or Tasmania Police.

R100.7 CONTRACT MANAGEMENT PLAN – FROST, ICE AND SNOW

The Contractor shall develop a Frost, Ice and Snow Management Plan, as part of its Contract Management Plan (Emergency) that covers:

- The relationship between the Contractor and the Bureau of Meteorology (BoM) for acquiring relevant and timely forecasting information;
- The relationship between the Contractor and other information providers including Tasmania Police, State Emergency Services and Local Government for acquiring additional information related to the weather;
- Inspections, response and reporting procedures;
- Additional Resources for extended events;

- Plant Operations, i.e. details of the plant suitability and capability and the operations the plant is to involved in including
- Type and number of plant
- Where it will be stored;
- Details of materials i.e. gritting aggregate supply, calcium chloride management.

The Contractor shall review the Frost, Ice and Snow Management Plan annually prior to April, with consideration given to the results of the field inspections and temperature monitoring and the frequency and effectiveness of mitigation measures.

R100.8 TRAFFIC MANAGEMENT

All Traffic Management and specific Traffic Management plans and schemes shall be in accordance with DIER Standard Specification G3 – Traffic Management, and as follows:

- Permanent Type 4 (Standard Drawing Number 3403-3/P93) – "Ice / Grit" warning signs shall be opened prior to grit spreading and closed upon the removal of grit materials from the road surface.
- Where permanent Type 4 – "Ice / Grit" warning signs have not been provided, temporary Type 5 (Standard Drawing Number 3403-3/P94) – "Slippery – Ice / Grit" warning signs shall be provided on both sides for each approach, approximately 200 metres in advance of gritting sites. The signs shall be removed upon the removal of grit material from the road surface.
- In addition to standard vehicle mounted warning devices, gritting vehicles shall be provided with Type 6 (Standard Drawing Number 3403-3/P95) – "Grit Spreading" signs fitted to the rear of the vehicle and visible to trailing traffic.

R100.9 MONITORING OF WEATHER

It is the Contractor's responsibility to monitor weather conditions and forecasts and liaise with the BoM to determine when and where ice gritting and snow clearing may be required. BoM are able to provide a range of dedicated forecasts to assist with the prediction of Ice and Snow events. An example of a daily weather forecast available from BoM is shown in Annexure R100E.

The BoM issues weather forecasts at 10am and 3pm daily. Frost Potential forecasts are also issued daily, but in the evening, ref http://www.bom.gov.au/jsp/watl/weather/frost.jsp.

The overall efficiency of the inspection and treatment regime will be very dependent on the ability to predict when ice will occur and where it will occur. Hence an important component of the investigation includes the development of the relationship between BoM temperature recording stations and site temperature readings.

The temperature is measured at the BoM weather stations at 2 metres above ground level. On cold, ice prone mornings, the temperature at the ground level at the recording station is likely to be significantly less than the recorded temperature. Furthermore at locations away from the recording stations, road surface temperatures may vary significantly from the recorded or "predicted" temperature for the BoM station.

When the forecast is below 2° or 4° Celsius (as nominated) for each weather station the Contractor shall implement the Ice and Snow Plan for the relevant roads.

The Superintendent will direct when the application of Calcium Chloride solution is to be undertaken at nominated sites.

R100.10 MATERIALS

R100.10.1 General

With the exception of the nominated Calcium Chloride sites, use of chemical treatments or salt shall not be permitted.

R100.10.2 Gritting Aggregate

Aggregate for gritting shall be a sharp crushed stone with a nominal size of 5mm and meet the requirements for Base Class B in accordance with *Standard Specification R40 Pavement Base and Subbase Appendix A2 Materials and Construction Standards Base Class B*. The aggregate shall conform to the grading in Table R100.2 Gritting Aggregates.

Table R100.2 Gritting Aggregates

Sieve Aperture (mm)	Percent Passing by Mass
9.5	100
4.75	80 - 100
2.36	10 – 30
1.18	0 - 12
0.075	0 - 1

R100.10.3 Calcium Chloride

Product details are in Annexure R100G. The solution shall be mixed in accordance with the Contractor's procedures and the following:

- Mix rate shall be 15%,
- Solution shall be prepared on the day of application,
- All tanks are to be emptied at the end of the application (this may include more than one site).

R100.11 OPERATIONS

R100.11.1 Inspections, Ice Gritting and Snow Clearing

Inspections for frost and ice shall generally be carried out when either:

- The Bureau of Meteorology (BoM) weather forecasts indicate the potential for overnight air temperatures of less than the trigger temperature at the nominated weather stations for the roads identified for that station;
- The BoM Road Weather Alerts predicting frost or ice are forecast;
- Actual conditions in the morning are such that there is a possibility of frost or ice;
- Calcium Chloride has been applied at one or more locations during the previous 24 hours.

Inspections for snow shall be carried out when either:

- BoM weather forecasts predict snow,
- BoM weather forecasts indicate that snow may affect elevated roads, or
- Actual conditions in the morning are such that there is a possibility of snow.

The timing of inspections and gritting operations shall be in accordance with *Table R100.3 Inspections and Gritting Timetable* however it is expected that inspections will generally commence around 5:45am.

Table R100.3 Inspections and Gritting Timetable

Priority (Refer Annexure R100B)	Inspection and gritting to be completed by
Very High	6.30am
High	7.30am
Medium	8.00am
Low	As soon as possible depending on the severity and/or extent of the event.

Snow clearing operations shall have commenced by 7:30am.

The Superintendent retains the power at all times to order commencement or cessation of snow clearing and ice gritting operations.

If the conditions are sufficiently adverse, a section of road can be inspected and found to be free of frost or ice early in the morning (e.g. before 6 am) only to find and that frost or ice forms later in the morning (e.g. by 7am). Where this is considered a possibility it is important to either pre-emptively grit the site or to revisit the site regularly for further assessment during the early hours of the morning. In some situations it may be necessary to station plant and equipment and operators at or near a site to monitor conditions.

For sites treated with Calcium Chloride inspections shall be undertaken in order to determine if frost or ice has or has not formed as part of normal ice inspections.

R100.11.2 Emergency Situations

In regard to emergency situations the Contractor will clear the road (e.g. snow ploughing) ahead of an ambulance or police vehicle.

R100.11.3 Grit Spreading

A single layer of grit shall cover areas of the pavement affected by ice. Grit shall be applied evenly across the pavement so that the surface is covered to such an extent that sufficient surface friction is maintained for traffic to travel safely in winter driving conditions. Multiple applications may be necessary.

Emphasis is to be placed on the evenness of spread. Uneven spreading and mounds of grit are unacceptable.

Having gritted a site it may be necessary, depending on conditions to return to the site to monitor conditions and reapply grit in circumstances where traffic volumes or the duration of the event is are such that the earlier application of grit may have lost its effectiveness.

R100.11.4 Grit Removal

Sweeping and removal of grit from the site on sealed roads shall be completed within 24 hours on Emergency Zone 1 and Zone 2 roads and within one week of gritting for Emergency Zone 3 and Zone 4 roads. Details of Emergency Zones are provided in *Standard Specification R101 Emergency Management*.

Grit shall be removed from unsealed shoulders if:

- It obstructs water draining from the road surface;
- The build up of grit becomes a traffic hazard.

R100.11.5 Procedure for Calcium Chloride Application

The Principal has also nominated a number of sites for which chemical ice treatment (calcium chloride solution) may be used subject to a request from the Superintendent. The treatment will not be required if wet conditions are likely. The Contractor shall not rely on the effectiveness of chemical ice treatments and shall inspect and grit chemically treated roads in accordance with the relevant clauses of this specification.

The procedure is to be as follows:

- BoM advice, received after 3.00pm (day 1), assessment undertaken by the Superintendent.
- The Superintendent shall advise the Contractor which sites and the extent of treatment required by 4.00pm.
- This direction will be confirmed by the Superintendent to the Contractor at 8.00am the next morning after checking the BoM web site, (day 2).
- The Contractor shall apply the treatment to the nominated sites as directed and record details on the report form, (day 2).
- Application shall be 22ml/m^2.
- The Contractor shall inspect and complete the report, (day 3).

Notes:

4. *The weather assessments and instructions to apply treatments on day 1 are to allow sufficient time for the Contractor to prepare the product, attend the site and apply the treatment on day 2.*
5. *High traffic sites may require daily treatments depending on the extent of an event.*
6. *For weekends, weather assessments and directions need to be undertaken on Fridays.*

R100.11.6 Snow Clearing

R100.11.6.1 Roads

For pavements affected by snow, the full width of the trafficable lanes shall be cleared. Grips shall be constructed and maintained in the build up/windrows of snow at the edges of the road to allow drainage from the pavement.

On sealed roads, snow shall be cleared as close as possible to the pavement surface with care being taken to avoid downward pressure on the pavement to prevent damage to the pavement surface and RRPMs, where they exist.

Any damage to the road pavement shall be repaired at the Contractor's expense.

On unsealed roads, snow shall be cleared as close as possible to the pavement with care being taken to avoid damage to the surface. Any gravel removed from the pavement during snow clearing operations shall be replaced on the next maintenance grading scheduled by the Contractor.

Where snow is continuously being cleared throughout the day, operations will normally cease around 4:30pm due to nightfall.

R100.11.6.2 Bridges and Cattle Grids

The bridge deck shall be totally cleared of snow to prevent any build up. Care should be taken when clearing bridge decks and cattle grids to avoid damage to their components. All bridge drainage shall be checked for functionality after snow clearing.

R100.11.7 Frost, Ice and Snow Closable and Temperature Sensitive Warning Signs

Annexure R100A is a list of the locations of Permanent and closeable Frost, Ice and Snow Warning Signs and Temperature Sensitive Warning Signs.

The Contractor shall open all Type 1 Slippery Ice Warning signs (Standard Drawing Number 3403-3/P92) only when an ice event occurs.

The Contractor shall open and close all Type 3 fixed-location Frost/Ice/Snow Warning Signs (Standard Drawing Number 3403-3/P91) at a time defined by DIER. Generally this will be opening prior to the end of April and closing at the end of October.

These Standard Drawings can be found at http://www.transport.tas.gov.au/road/specifications/standard_drawings_roadworks2.

The Contractor shall maintain and supply all consumables for the Temperature Sensitive Warning Signs, including light bulbs, light diffusers and batteries. The signs shall be maintained from when opened until closed.

R100.12 REPORTING

R100.12.1 General Road Condition Reports

General Road Condition Reports shall be provided to the Superintendent by 8:30am, with updates given throughout the day or until operations have been completed.

During extended events (i.e. over consecutive days), additional Road Condition Reports and updates will generally be required by the Department by 12:30 pm and 4:30 pm.

Sample report forms are in Annexure R100H. These are available from Documents.RandT@dier.tas.gov.au. Whilst Contractor's may develop their own forms the details listed are the minimum requirements.

R100.12.2 Temperature Monitoring and Calcium Chloride Effectiveness Reports

The Contractor shall submit Temperature Monitoring and Calcium Chloride Effectiveness Reports with the General Road Condition Reports to the Superintendent by 8:30am.

The following information will be recorded on the standard form:

- Identification of each site monitored.
- Whether Calcium Chloride had been applied at the site 1 to 3 days prior and reference to relevant Field Application Report where applicable.
- Temperature that had been forecasted the previous day for the relevant Weather Station.
- Summary of overnight weather conditions (e.g. heavy or light rainfall etc.)
- Times, locations and results of the Temperature recordings.
- Whether frost or ice was observed at the site.
- Whether frost or ice was observed adjacent to the site.
- Whether grit was applied.
- Other field observations as appropriate.

R100.12.3 Calcium Chloride Application

The Contractor shall provide daily reports to the Superintendent. Reports shall include all inspection and application details. Specific forms for each site are to be provided electronically to the Superintendent.

R100.12.4 Production of the Calcium Chloride solution

The following information will be recorded:

- Identification of the tank.
- Volume of solution in tank prior to the addition of the calcium chloride dihydrate. This should be obtained by dipping or on-board weighing
- Mass of calcium chloride dihydrate added
- Volume of H_2O added
- Final volume
- Estimate of calcium chloride concentration ml/m^2 as a proportion of the total mix.

R100.12.5 Field Application Report of the Calcium Chloride solution

The following information will be recorded on a standard form:

- Site Details.
- Chainage at start of run.
- Run details i.e. Lane and/or carriageway.
- Spray width i.e. 3m.
- Length of run.
- Chainage at end of run
- Area covered.
- Dipped volume at start of run.
- Density of solution by hydrometer.
- Concentration of calcium chloride (from Figure 2).
- Dipped volume at end of run.
- Volume used.
- Application rate of calcium chloride solution.
- Application rate of calcium chloride (net).

The Contractor may be required from time to time, to directly measure spray application rate.

As a minimum requirement, the Contractor shall record air temperatures (approximately five recordings per site) at all sites where Calcium Chloride has been applied during the previous 24 hours and at least five other ice prone sites to be determined in consultation with the Superintendent and the Bureau of Meteorology. Subject to the approval or direction of the Superintendent, these other ice prone sites being monitored may be varied over time to improve the value of the field information gathered.

The time and location of each temperature reading will be recorded and accompanied by any observations about the formation of ice or frost and reported in accordance with this clause.

R100.13 PERFORMANCE CRITERIA

The performance of the Contractor shall be measured according to the following criteria:

- Provision of adequate resources to manage and respond to actual events within the required response time,
- Provision of evidence of compliance (reports etc),
- No damage to the pavement.

R100.14 MEASUREMENT AND PAYMENT

R100.14.1 Frost, Ice and Snow Inspections

Inspections, including all Road Condition Reports and update Reports, for frost, ice and snow shall be paid in accordance with the appropriate payment schedule and shall include all costs in determining whether to treat and the type of treatment required.

R100.14.2 Frost and Ice Treatment

Payment for frost or ice treatment shall be in accordance with the appropriate payment schedule and shall include all plant, personnel and materials to treat frost and ice and removal of grit.

R100.14.3 Snow Clearing

Payment for snow clearing shall be paid for at an hourly rate in accordance with the appropriate payment schedule and shall include all plant and personnel required for the operations.

R100.14.4 Management of Permanent, Closable and Temperature Sensitive Warning Signs

Payment for the Management of Permanent, Closable and Temperature Sensitive Warning Signs shall be in accordance with the appropriate payment schedule and shall include all plant, personnel and materials.

ANNEXURE A - LOCATION OF PERMANENT AND FOLDABLE FROST, ICE AND SNOW WARNING SIGNS & TEMPERATURE SENSITIVE WARNING SIGNS

Road No	Road Name	Link	Ch	Side	Type	Description
A0142	Arthur Highway	09	0.46	PD	1	Small fold up Caution Ice
A0142	Arthur Highway	09	3.12	PD	Temp. Sen.	Flashing LED Display
A0142	Arthur Highway	09	3.85	CD	1	Small fold up Caution Ice
A0142	Arthur Highway	09	3.96	CD	Temp. Sen.	Flashing LED Display
A0142	Arthur Highway	09	4.33	CD	1	
A0142	Arthur Highway	09	6.42	PD	1	
A0142	Arthur Highway	09	10.60	CD	1	Small fold up Caution Ice
A0142	Arthur Highway	09	11.00	CD	1	
A0142	Arthur Highway	56	4.50	PD	Temp. Sen.	Flashing LED Display
A0142	Arthur Highway	56	4.00	PD	1	
A0142	Arthur Highway	68	1.38	CD	Temp. Sen.	Flashing LED Display
A0142	Arthur Highway	68	3.50	CD	3	
A0155	Channel Highway	03	-0.10	PD	1	
A0168	Huon Highway	06	2.84	PD	3	
A0168	Huon Highway	06	4.22	PD	1	Small fold up Caution Ice
A0168	Huon Highway	06	8.43	PD	Temp. Sen.	Flashing LED Display
A0168	Huon Highway	17	1.65	PD	Temp. Sen.	Flashing LED Display
A0168	Huon Highway	17	2.39	CD	1	Small fold up Caution Ice
A0168	Huon Highway	17	3.60	CD	Temp. Sen.	Flashing LED Display
A0168	Huon Highway	17	4.53	CD	3	
A0168	Huon Highway	17	5.26	CD	Temp. Sen.	Flashing LED Display
A0168	Huon Highway	17	6.45	CD	1	Small fold up Caution Ice
A0168	Huon Highway	17	9.11	CD	3	
A0197	Lyell Highway	08	7.42	PD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	20	5.83	CD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	28	0.04	CD	2	
A0197	Lyell Highway	28	5.25	PD	1	
A0197	Lyell Highway	30	4.72	PD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	33	6.78	PD	1	
A0197	Lyell Highway	33	7.16	CD	1	
A0197	Lyell Highway	35	0.02	PD	2	

Road No	Road Name	Link	Ch	Side	Type	Description
A0197	Lyell Highway	35	4.45	CD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	35	10.50	PD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	38	11.46	CD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	51	2.08	PD	1	
A0197	Lyell Highway	51	7.60	PD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	53	2.75	CD	Temp. Sen.	Flashing LED Display
A0197	Lyell Highway	53	8.97	CD	1	
A0197	Lyell Highway	53	9.60	CD	2	
A0087	Midland Highway	12	0.65	PD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	12	0.95	CD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	20	0.23	PD	1	
A0087	Midland Highway	20	3.34	PD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	20	4.32	CD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	20	8.44	CD	1	
A0087	Midland Highway	26	1.96	PD	1	Small fold up Caution Ice
A0087	Midland Highway	31	0.73	PD	1	
A0087	Midland Highway	31	2.43	CD	1	Small fold up Caution Ice
A0087	Midland Highway	31	4.78	PD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	31	7.13	CD	Temp. Sen.	Flashing LED Display
A0087	Midland Highway	31	7.40	CD	1	Small fold up Caution Ice
A0087	Midland Highway	31	9.73	CD	1	
A0087	Midland Highway	37	4.17	PD	1	
A0087	Midland Highway	37	7.20	PD	1	Small fold up Caution Ice
A0087	Midland Highway	43	3.50	PD	1	Small fold up Caution Ice
A0087	Midland Highway	43	7.10	CD	1	Small fold up Caution Ice
A0087	Midland Highway	43	11.68	CD	1	
A0113	Tasman Highway	07	4.30	PD	Temp. Sen.	Flashing LED Display
A0113	Tasman Highway	07	4.56	PD	4	
A0113	Tasman Highway	07	6.21	CD	Temp. Sen.	Flashing LED Display
A0113	Tasman Highway	07	6.72	CD	4	LHS
A0113	Tasman Highway	07	6.72	CD	4	RHS
A0113	Tasman Highway	07	0.07	R31	4	Located on Redgate IC
A0113	Tasman Highway	15	3.60	PD	1	
A0113	Tasman Highway	15	3.80	PD	1	Small fold up Caution Ice

Road No	Road Name	Link	Ch	Side	Type	Description
A0113	Tasman Highway	15	5.90	CD	1	Small fold up Caution Ice
A0113	Tasman Highway	15	7.87	CD	1	
A0113	Tasman Highway	16	3.48	PD	1	
A0113	Tasman Highway	16	3.68	PD	Temp. Sen.	Flashing LED Display
A0113	Tasman Highway	16	3.48	PD	1	Small fold up Caution Ice
A0113	Tasman Highway	16	6.29	CD	1	Small fold up Caution Ice
A0113	Tasman Highway	16	6.94	CD	1	
A0113	Tasman Highway	16	8.84	PD	1	Small fold up Caution Ice
A0113	Tasman Highway	16	9.15	PD	1	
A0113	Tasman Highway	18	0.62	CD	Temp. Sen.	Flashing LED Display
A0113	Tasman Highway	18	2.02	CD	1	Small fold up Caution Ice
A0113	Tasman Highway	18	2.76	CD	1	
A1727	Gordon River Main Road	36	0.42	PD	3	
A1727	Gordon River Main Road	43	0.43	PD	3	
A1727	Gordon River Main Road	58	10.61	CD	3	
A1727	Gordon River Main Road	88	4.36	CD	3	
A2182	Grass Tree Hill SR	05	1.50	PD	1	
A2182	Grass Tree Hill SR	05	5.27	CD	1	Small fold up Caution Ice
A0171	Southern Outlet Highway	05	0.35	PD	1	
A0171	Southern Outlet Highway	05	0.41	PD	1	Small fold up Caution Ice
A0171	Southern Outlet Highway	05	8.19	CD	1	Small fold up Caution Ice
A0171	Southern Outlet Highway	05	8.39	CD	1	
A1248	Nicholls Rivulet MR	05	0.90	PD	1	
A1248	Nicholls Rivulet MR	94	6.14	CD	1	
A2443	Marlborough SR	05	4.73	PD	2	
A2443	Marlborough SR	93	7.01	CD	2	
A2100	Lake SR	18	1.25	PD	2	
A2100	Lake SR	30	7.23	PD	3	
A2100	Lake SR	42	9.97	CD	2	
A2100	Lake SR	49	0.14	PD	2	
A0278	Batman Highway	5	4.80		1	2 ½ km before Hawks Hill
A0278	Batman Highway	5	5.60		1	Turnoff to Pirates Bay
A0265	East Tamar Hwy	30	0.01		1	
A0265	East Tamar Hwy	30	2.40		1	

Road No	Road Name	Link	Ch	Side	Type	Description
A1743	Elephant Pass Main Rd	05	0.73	L	1	St Mary's Pass
A1743	Elephant Pass Main Rd	05	9.19	R	1	St Mary's Pass
A1125	Esk Main Rd	99	3.33	L	1	St Mary's Pass
A1125	Esk Main Rd	99	8.42	R	1	St Mary's Pass
A1442	Lake Leake Main Road	17	2.25	L	1	
A1442	Lake Leake Main Road	84	2.13	R		
A1073	Lilydale Main Rd	51	1.89		1	Pipers River
A1073	Lilydale Main Rd	51	3.83		1	
A2025	Meander Valley SR	04	0.50	L	1	
A2025	Meander Valley SR	07	0.00	L	3	
A2025	Meander Valley SR	07	1.95	R	3	
A2564	Mt Barrow Tourist Rd	05	0.08	L	2	
A2564	Mt Barrow Tourist Rd	05	8.74		3	
A1604	Poatina Main Road	05	0.09	L	1	
A0113	Tasman Hwy	40	0.61	L	1	Cherry Tree Hill
A0113	Tasman Hwy	40	4.79	R	1	Cherry Tree Hill
A0113	Tasman Hwy	68	0.89	L	1	Forest Lodge Rd
A0113	Tasman Hwy	68	11.72	R	1	Weld River
A0113	Tasman Hwy	76	9.68	L	1	Billycock Ringarooma MR
A0113	Tasman Hwy	78	7.25	R	1	Rocky gully Parrs Rivulet
A0113	Tasman Hwy	82	11.64	L	1	The Sideling
A0113	Tasman Hwy	84	11.63	R	1	The Sideling
A1714	Anthony Main Road	05	0.04	L		
A1714	Anthony Main Road	05	0.40	L		
A1714	Anthony Main Road	94	6.94	L		
A1714	Anthony Main Road	94	7.20			
A2603	Cethana Tourist Rd	05	2.21	L	3	Days Rd
A2577	Cradle Mt. Tourist Rd	41	0.15	L	1	Cethana Tourist Rd junction
A1688	Massey Greene DR	05	1.12	L	1	Ridgley
A2100	Lake Secondary Road	77	1.50	L	3	Addisons Rd, Breona
A2100	Lake Secondary Road	85	7.48	R	3	Golden Valley Rd jcn
A0197	Lyell Highway	56	0.26	L		
A0197	Lyell Highway	56	0.76	L		
A0197	Lyell Highway	62	2.00	R		

Road No	Road Name	Link	Ch	Side	Type	Description
A0197	Lyell Highway	75	9.90	R		
A0197	Lyell Highway	79	4.65	R		
A0485	Murchison Highway	05	0.52	L		½ km Zeehan Rd Junction
A0485	Murchison Highway	20	1.57	R		Rosebery (Mt Black)
A0485	Murchison Highway	20	2.31	L	3	Rosebery
A0485	Murchison Highway	20	5.53	L		Rosebery (Mt Black)
A0485	Murchison Highway	20	9.64	R		Tullah
A0485	Murchison Highway	31	10.64	L	3	Animal Creek
A0485	Murchison Highway	52	8.60	R	1	Guilford/ Hampshire MR
A0485	Murchison Highway	82	10.94	R	3	Takone Rd
A2616	Olivers TR	94	10.67	R		
A2616	Olivers TR	05	0.03	L		
A1015	Ridgley Hwy	94	1.45	L		Pet Rd
A1617	Waratah Main Road	28	1.95	L		
A1617	Waratah Main Road	46	5.80	R	3	Luina

Sign Types	Description
1	Similar to Standard Drawing 3403-3/P92
2	" Road Closed Snow and Ice" or similar
3	Similar to Standard Drawing 3403-3/P91
4	Permanent Symbolic Slippery – Ice / Grit similar to Standard Drawing 3403-3/P93
5	Temporary Symbolic Slippery – Ice / Grit similar to Standard Drawing 3403-3/P94
6	Grit Spreading similar to Standard Drawing 3403-3/P95
Temp Sen	Temperature controlled battery operated LED signs

ANNEXURE B – KNOWN ICE SITES

Region	Road Name	Road No.	Start Link	Start Chainage	End Chainage	Traffic AADT	Grittings (Sth 03 to 07) (Nth West 05 to June 08)	NW Grittings July 08, 09 to June 10	Weather Stations	Trigger	Frost / Ice Inspection / Treatment Priority
Sth	Algona MR	A1578	5	0	3.21	6,379			Hobart	2^0C	H
NW	Anthony MR	A1714	5	0	11.63	358	3		Lake Plimsoll	CC + 2^0C	H
NW	Anthony MR	A1714	5	2.55	9.8	358		4	Lake Plimsoll	CC + 2^0C	H
NW	Anthony MR	A1714	23	0	9.65	358	2		Lake Plimsoll	2^0C	H
NW	Anthony MR	A1714	23	0	4.9	358		5	Lake Plimsoll	2^0C	H
NW	Anthony MR	A1714	48	0	9.99	274	7		Lake Plimsoll	CC + 2^0C	H
NW	Anthony MR	A1714	48	1.65	8.8	274		9	Lake Plimsoll	CC + 2^0C	H
NW	Anthony MR	A1714	94	3.55	5.65	274		2	Lake Plimsoll	CC + 2^0C	H
NW	Anthony MR	A1714	94	0	7.24	274			Lake Plimsoll	CC + 2^0C	H
Sth	Arthur Highway	A0142	5	0	7.27	10,220	2		Hobart Airport	CC + 2^0C	H
Sth	Arthur Highway	A0142	9	0	11.45	4,512	14		Hobart Airport	4^0C	H

Sth	Arthur Highway	A0142	26	0	3.47				Hobart Airport	2^0C	H
Sth	Arthur Highway	A0142	31	0	9.66	2,213	2		Hobart Airport	2^0C	H
Sth	Arthur Highway	A0142	68	0	4.54	1,873			Hobart Airport	2^0C	M
NE	Bass Highway	A0249	6	0	6.13	7,147			Launceston Airport	4^0C	M
NE	Bass Highway	A0249	11	0	11.78	7,900			Launceston Airport	4^0C	M
NE	Bass Highway	A0249	16	0	13.68	6,946			Launceston Airport	4^0C	M
NW	Bass Highway	A0249	52	0	11.87	17,991			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	60	0	11.65	3,947			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	64	0	11.53	2,655			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	66	0	7.88	2,265			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	71	0	9.85	2,265			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	73	0	8.52	2,159			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	76	0	11.19	2,256			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	79	0	8.98				Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	82	0	7.8	1,365			Luncheon Hill	2^0C	M
NW	Bass Highway	A0249	85	0	8.94	958			Luncheon Hill	2^0C	M
NE	Batman	A0278	5	0	11.22				Launceston	4^0C	M

	Highway					2,299			Airport		
NE	Blessington MR	A1112	25	0	6.24	773			Launceston Airport	2^0C	M
Sth	Boyer SR	A2218	5	0	10.68	3,289	7		Maydena	2^0C	H
Sth	Boyer SR	A2218	94	0	6.91	2,056	13		Maydena	2^0C	H
NE	Bridport MR	A1400	5	0	10.83	2,297			Scottsdale	2^0C	M
NE	Bridport MR	A1400	58	0	11.12	1,083			Scottsdale	2^0C	M
Sth	Brooker Highway	A0090	8	0	9.27	47,581			Hobart	2^0C	M
NW	Cethana TR	A2603	5	0	11.21	482			Sheffield	2^0C	M
Sth	Channel Highway	A0155	3	0	8.02	5,743	22		Hobart	4^0C	H
Sth	Channel Highway	A0155	9	0	7.45	18,433			Hobart	4^0C	M
Sth	Channel Highway	A0155	49	0	11.35	1,967			Grove	2^0C	M
Sth	Channel Highway	A0155	61	0	7.71				Grove	2^0C	M
Sth	Channel Highway	A0155	69	0	10.88	3,057	2		Grove	2^0C	M
Sth	Colebrook MR	A1154	5	0	8.62	5,112	1		Hobart Airport	2^0C	M
Sth	Colebrook MR	A1154	21	0	5.3				Hobart Airport	2^0C	M
Sth	Colebrook MR	A1154	33	0	7.97	4,733			Hobart Airport	2^0C	M
NW	Cradle Mt DR	A2674	5	6.5	7.4	384		1	Luncheon Hill	2^0C	M

NW	Cradle Mt DR	A2674	56	5.4	7.88	384			Luncheon Hill	2^0C	M
NW	Cradle Mt DR	A2674	94	0	6.99	384	4		Luncheon Hill	2^0C	M
NW	Cradle Mt DR	A2674	94	1.11	3.06	384		2	Luncheon Hill	2^0C	M
NW	Cradle Mt TR	A2577	41	0	9.51	629	4		Luncheon Hill	2^0C	H
NW	Cradle Mt TR	A2577	41	6.8	8.5	629		7	Luncheon Hill	2^0C	H
NW	Cradle Mt TR	A2577	63	0	10.18	629	1		Luncheon Hill	2^0C	H
NW	Cradle Mt TR	A2577	87	0	11.53	661	1		Luncheon Hill	2^0C	H
NW	Cradle Mt TR	A2577	96	0	2.36	948			Luncheon Hill	2^0C	H
Sth	East Derwent Highway	A0029	R04/R05			13,617			Hobart	CC + 4^0C	H
Sth	East Derwent Highway	A0029	29	0	8.14	10,960	5		Hobart	4^0C	H
Sth	East Derwent Highway	A0029	94	0	7.6	7,117			Hobart	4^0C	M
NE	East Tamar Highway	A0265	20	0	7.77	5,439			Launceston Airport	2^0C	M
NE	East Tamar Highway	A0265	30	0	8.05	4,568			Launceston Airport	2^0C	M
NE	East Tamar Highway	A0265	40	0	9.62	3,924			Launceston Airport	2^0C	M
NE	Elephant Pass MR	A1743	5	0	11.04	213	1		Fingal	2^0C	M
NE	Elephant Pass MR	A1743	94	0	5.39	409			Fingal	2^0C	M
NE	Esk MR	A1125	99	0	9.59				Fingal	2^0C	M

						1,883					
Sth	Fingerpost Mr	A1691	5	0	7.38	1,270			Hobart Airport	2^0C	M
NW	Forth MR	A1552	3	0	1.6	2,748			Sheffield	2^0C	M
NE	Frankford MR	A1044	21	0	9.42	1,603			Launceston Airport	2^0C	M
NE	Frankford MR	A1044	39	0	11.88	1,064			Launceston Airport	2^0C	M
NW	Frankford MR	A1044	57	0	10.29	1,064			Sheffield	2^0C	M
NW	Frankford MR	A1044	74	0	10.55	1,736			Sheffield	2^0C	M
Sth	Glen Huon MR	A1183	94	0	5.8	821			Grove	2^0C	M
Sth	Gordon River MR	A1727	6	0	8.01	1,332			Maydena	2^0C	M
Sth	Gordon River MR	A1727	12	0	7.71	1,019			Maydena	2^0C	M
Sth	Gordon River MR	A1727	19	0	7.49	849			Maydena	2^0C	M
Sth	Gordon River MR	A1727	36	0	7.54	415	1		Maydena	2^0C	M
Sth	Gordon River MR	A1727	43	0	8.58	171			Maydena	2^0C	M
Sth	Gordon River MR	A1727	50	0	9.19	171	1		Maydena	2^0C	M
Sth	Gordon River MR	A1727	98	0	0.05	616			Maydena	2^0C	M
Sth	Grass Tree Hill SR	A2182	5	0	6.87	1,353	10		Hobart	4^0C	H
Sth	Grass Tree Hill SR	A2182	94	0	6.04	1,353	1		Hobart Airport	4^0C	M

NW	Ridgley Hwy	A0500	45	0	11.74	1,457	2		Luncheon Hill	2^0C	H
NW	Ridgley Hwy	A0500	55	0	6.85	1,179			Luncheon Hill	2^0C	M
NW	Ridgley Hwy	A0500	55	6.75	6.85	1,179		1	Luncheon Hill	2^0C	M
NW	Ridgley Hwy	A0500	65	0	8.5	1,179			Luncheon Hill	2^0C	M
NW	Ridgley Hwy	A0500	65	0	0.1	1,179			Luncheon Hill	2^0C	M
Sth	Hastings Cave TR	A2522	5	0	4.1	391			Grove	2^0C	M
NW	Henty MR	A1633	8	0	7.59	531			Lake Plimsoll	2^0C	M
NW	Henty MR	A1633	94	0	7.27	531			Lake Plimsoll	2^0C	M
NW	Henty MR	A1633	94	0	0.3	531			Lake Plimsoll	2^0C	M
Sth	Huon Hwy	A0168	6	0	10.04	8,317	39		Hobart	4^0C	VH
Sth	Huon Hwy	A0168	6	8.2	9.73	8,317			Hobart	4^0C	VH
Sth	Huon Hwy	A0168	17	0	9.51	7,144	39		Grove	CC + 4^0C	VH
Sth	Huon Hwy	A0168	17	3.5	5	7,144			Grove	CC + 4^0C	VH
Sth	Huon Hwy	A0168	26	0	6.9	7,207			Grove	2^0C	VH
Sth	Huon Hwy	A0168	46	0	11.15	3,436			Grove	2^0C	M
Sth	Huon Hwy	A0168	58	0	9.54	938			Grove	2^0C	M
Sth	Huon Hwy	A0168	68	0	10.06		5		Grove	2^0C	H

						1,158					
Sth	Huon Hwy	A0168	78	0	9.41				Grove	2^0C	H
Sth	Huon Hwy	A0168	94	0	11.23	514	2		Grove	2^0C	H
NW	King Island MR	A1219	94	0	6.69	338			Currie	2^0C	M
Sth	Lake Dobson TR	A2535	5	0	7.22	305			Maydena	2^0C	M
Sth	Lake Dobson TR	A2535	94	0	8.38	91			Maydena	2^0C	M
NE	Lake Leake MR	A1442	17	0	11.89	523			Ross	2^0C	M
NE	Lake Leake MR	A1442	36	0	9.63	523			Ross	2^0C	M
NE	Lake Leake MR	A1442	48	0	4.03	523			Ross	2^0C	M
NE	Lake Leake MR	A1442	58	0	7.34	521			Ross	2^0C	M
NE	Lake Leake MR	A1442	70	0	7.05	534			Ross	2^0C	M
Sth	Lake SR	A2100	5	0	10.32	672	23		Liawenee	2^0C	H
Sth	Lake SR	A2100	12	0	9.94	888	3		Liawenee	2^0C	H
Sth	Lake SR	A2100	18	0	9.29	285			Liawenee	2^0C	H
Sth	Lake SR	A2100	22	0	6.31	277	1		Liawenee	2^0C	H
Sth	Lake SR	A2100	30	0	11.97	222	2		Liawenee	2^0C	H
Sth	Lake SR	A2100	35	0	8.29	222	4		Liawenee	2^0C	H
Sth	Lake SR	A2100	42	0	10.31		4		Liawenee	2^0C	H

						247					
Sth	Lake SR	A2100	49	0	9.42	532	5		Liawenee	2^0C	H
Sth	Lake SR	A2100	53	0	6.19	532	7		Liawenee	2^0C	H
NE	Lake SR	A2100	58	0	10.11	143			Liawenee	2^0C	M
NE	Lake SR	A2100	63	0	7.1	277			Liawenee	2^0C	M
NE	Lake SR	A2100	70	0	8.22	277			Liawenee	2^0C	H
NE	Lake SR	A2100	77	0	6.18	277	4		Liawenee	2^0C	H
NE	Lake SR	A2100	82	0	12.04	277	3		Liawenee	2^0C	H
NE	Lake SR	A2100	85	0	7.52	277			Liawenee	2^0C	H
NE	Lake SR	A2100	90	0	8.57	809			Launceston Airport	2^0C	M
NE	Lake SR	A2100	93	0	9.84	2,643			Launceston Airport	2^0C	M
NW	Lake St Clair TR	A2580	5	0	5.02	443			Lake St Clair	2^0C	M
NE	Lilydale MR	A1073	8	0	6.73	6,581			Launceston Airport	2^0C	M
NE	Lilydale MR	A1073	51	0	8.69	1,994	1		Launceston Airport	2^0C	M
NE	Lilydale MR	A1073	94	0	5	2,077			Launceston Airport	2^0C	M
Sth	Lyell Hwy	A0197	5	0	11.71	6,775			Maydena	2^0C	M
Sth	Lyell Hwy	A0197	12	0	11.32	1,536			Maydena	2^0C	M

Sth	Lyell Hwy	A0197	14	0	7.32	1,536			Maydena	2^0C	M
Sth	Lyell Hwy	A0197	16	0	6.58	961	1		Maydena	2^0C	H
Sth	Lyell Hwy	A0197	20	0	7.28	961	3		Maydena	2^0C	H
Sth	Lyell Hwy	A0197	23	0	7.28				Maydena	2^0C	H
Sth	Lyell Hwy	A0197	25	0	7.07				Maydena	2^0C	H
Sth	Lyell Hwy	A0197	28	7.28	10.71				Lake St Clair	2^0C	H
Sth	Lyell Hwy	A0197	28	0	8.84	636	7		Lake St Clair	2^0C	H
Sth	Lyell Hwy	A0197	30	0	6.82	636	20		Lake St Clair	2^0C	H
Sth	Lyell Hwy	A0197	33	0	7.3	613	28		Lake St Clair	2^0C	H
Sth	Lyell Hwy	A0197	35	0	10.76	564	28		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	38	0	11.5	503	28		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	43	0	7.51	504	4		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	46	0	7.37	530	4		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	48	0	6.18	389	2		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	51	0	9.25	662	4		Lake St Clair	CC + 2^0C	H
NW	Lyell Hwy	A0197	53	0	10.41	662	4		Lake St Clair	CC + 2^0C	H
NW	Lyell Hwy	A0197	56	0	9.41	483	10		Lake St Clair	CC + 2^0C	H
NW	Lyell Hwy	A0197	56	1.58	2.95	483		4	Lake St Clair	CC + 2^0C	H

NW	Lyell Hwy	A0197	60	0	11.87	483	17		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	60	4.5	11.87	483		15	Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	62	0	8.5	483		8	Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	65	0	3.85	483	4		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	65	3.85	4.65	483		2	Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	65	4.65	8.84	483			Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	68	0	10.83				Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	71	0	10.55	483	4		Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	75	0	8.27				Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	77	0	9.44	299			Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	79	0	8.03	1,547			Lake St Clair	2^0C	H
NW	Lyell Hwy	A0197	81	0	10.7	1,152			Lake St Clair	2^0C	M
NW	Lyell Hwy	A0197	84	0	10.98				Lake St Clair	2^0C	M
NW	Lyell Hwy	A0197	88	0	12.56	443			Lake Plimsoll	2^0C	M
NW	Lyell Hwy	A0197	94	0	6.07	443			Lake Plimsoll	2^0C	M
Sth	Marlborough SR	A2443	5	0	5.89	325			Lake St Clair	2^0C	M
Sth	Marlborough SR	A2443	19	0	8.03	219			Lake St Clair	2^0C	M
Sth	Marlborough SR	A2443	44	0	9.96	219	3		Liawenee	2^0C	M

Sth	Marlborough SR	A2443	93	0	7.47	219	5		Liawenee	2^0C	M
NE	Meander Valley SR	A2025	7	0	6.83	5,938			Launceston Airport	4^0C	M
NE	Meander Valley SR	A2025	55	0	3.72	1,432			Launceston Airport	2^0C	M
NE	Meander Valley SR	A2025	90	0	8.35	1,210			Launceston Airport	2^0C	M
NW	Mersey MR	A1536	5	0	9.85	10,301			Sheffield	2^0C	M
Sth	Midland Hwy	A0087	12	0	8.95	17,988	2		Maydena	2^0C	H
Sth	Midland Hwy	A0087	20	0	9.91	5,595	23		Ross	2^0C	H
Sth	Midland Hwy	A0087	24	0	6.97	4,927			Ross	2^0C	H
Sth	Midland Hwy	A0087	26	0	4.99	3,937	1		Ross	2^0C	H
Sth	Midland Hwy	A0087	31	0	10.05	3,937	10		Ross	CC + 4^0C	H
Sth	Midland Hwy	A0087	31	5.8	6.8	3,937			Ross	CC + 4^0C	H
Sth	Midland Hwy	A0087	37	0	11.49	4,456	3		Ross	CC + 4^0C	H
Sth	Midland Hwy	A0087	37	7.2	7.8	4,456			Ross	CC + 4^0C	H
Sth	Midland Hwy	A0087	43	0	12.96	4,390	1		Ross	2^0C	H
Sth	Midland Hwy	A0087	49	0	10.51	4,266			Ross	2^0C	H
Sth	Midland Hwy	A0087	55	0	10.48	4,253			Ross	2^0C	M
NE	Midland Hwy	A0087	74	0	11.8				Ross	2^0C	M

						5,305					
NE	Midland Hwy	A0087	80	0	11.19				Launceston Airport	2^0C	M
NE	Midland Hwy	A0087	85	0	10.55	5,495			Launceston Airport	2^0C	M
NE	Midland Hwy	A0087	90	0	10.06	10,046			Launceston Airport	2^0C	M
NE	Midland Hwy	A0087	96	0	10.66	23,021			Launceston Airport	2^0C	M
NW	Mole Creek MR	A1374	51	0	6.97	1,132	2		Sheffield	2^0C	VH
NW	Mole Creek MR	A1374	51	0	4	1,132			Sheffield	2^0C	M
NW	Mole Creek MR	A1374	94	0	7.92	896			Sheffield	2^0C	M
NW	Mole Creek MR	A1374	96	0	8.29	687			Sheffield	2^0C	M
NW	Mole Creek MR	A1374	98	0	5.89	687			Sheffield	2^0C	M
NW	Mole Creek MR	A1374	99	0	6.31	687			Sheffield	2^0C	M
NE	Mt Barrow TR	A2564	7	0	3.51	170			Scottsdale	2^0C	M
NW	Murchison Hwy	A0485	5	0	11.01	900			Lake Plimsoll	2^0C	M
NW	Murchison Hwy	A0485	12	0	11.64				Lake Plimsoll	2^0C	M
NW	Murchison Hwy	A0485	20	0	11.5	818	9		Lake Plimsoll	CC + 2^0C	H
NW	Murchison Hwy	A0485	26	0	4.8	1,046			Lake Plimsoll	2^0C	M
NW	Murchison Hwy	A0485	31	0	11.04	945			Lake Plimsoll	2^0C	M

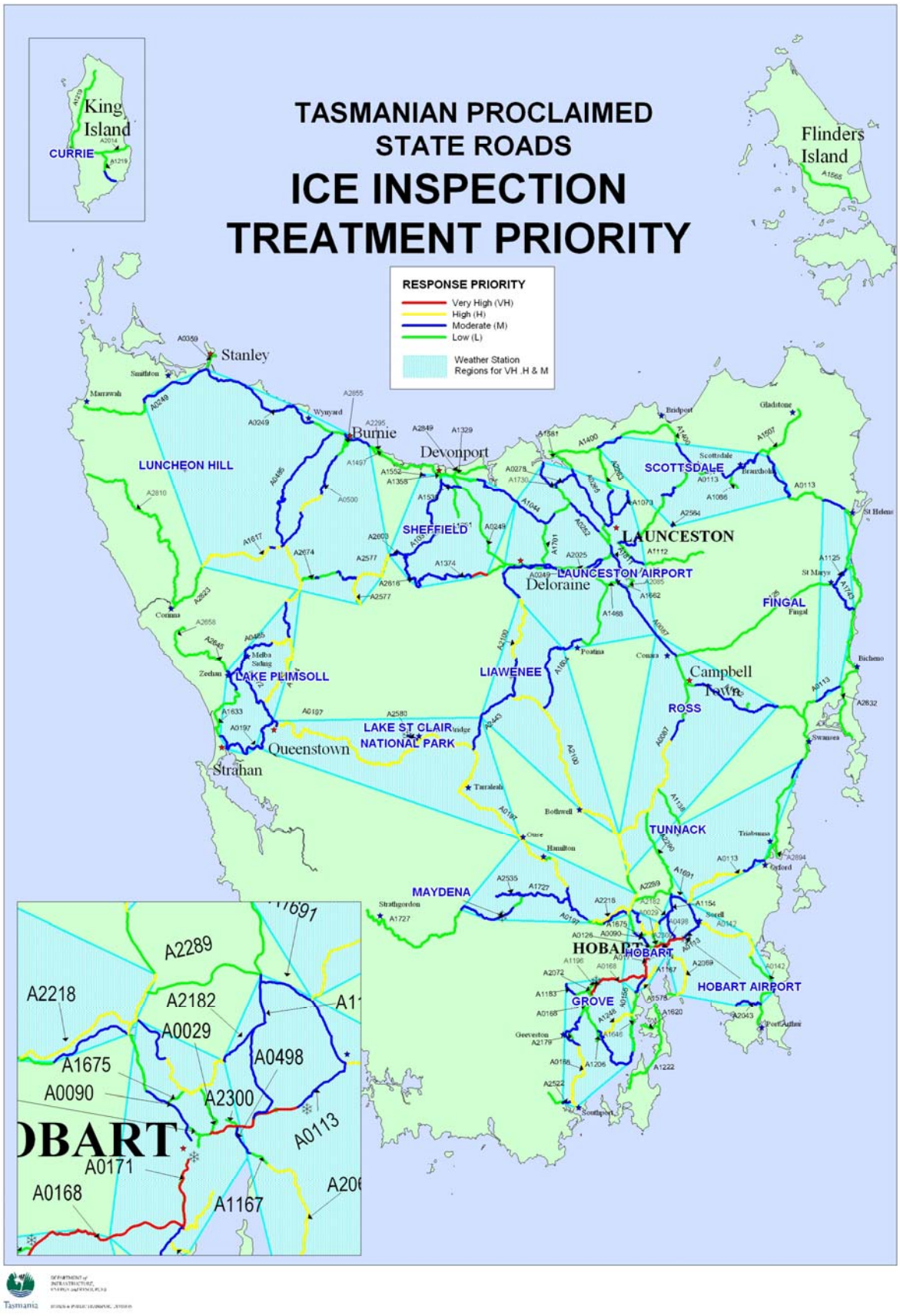
NW	Murchison Hwy	A0485	31	3.5	5	945			Lake Plimsoll	2^0C	M
NW	Murchison Hwy	A0485	39	0	9.98	930			Lake Plimsoll	2^0C	H
NW	Murchison Hwy	A0485	39	0.2	1.9	930		1	Lake Plimsoll	2^0C	H
NW	Murchison Hwy	A0485	39	2.85	3	930			Lake Plimsoll	CC + 2^0C	H
NW	Murchison Hwy	A0485	39	7.1	7.6	930			Lake Plimsoll	CC + 2^0C	H
NW	Murchison Hwy	A0485	45	0	9.09	819			Luncheon Hill	2^0C	H
NW	Murchison Hwy	A0485	52	0	9.25	814			Luncheon Hill	2^0C	H
NW	Murchison Hwy	A0485	58	0	9.42	92			Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	63	0	4.56	198			Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	69	0	10.68	198			Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	75	0	8.94	198	1		Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	82	0	10.96	198			Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	90	0	9.25	854			Luncheon Hill	2^0C	M
NW	Murchison Hwy	A0485	94	0	10.13	2,192			Luncheon Hill	2^0C	M
Sth	Nicholls Rivulet MR	A1248	5	0	6.3	1,022	17		Grove	4^0C	H
Sth	Nicholls Rivulet MR	A1248	94	0	11.46	728	23		Grove	4^0C	H
Sth	Nubeena SR	A2043	5	0	9.13		1		Hobart Airport	2^0C	M

						770					
Sth	Nubeena SR	A2043	32	0	3.03	651	2		Hobart Airport	2^0C	M
NW	Olivers TR	A2616	5	0	10.27	241			Sheffield	2^0C	M
NW	Olivers TR	A2616	94	0	10.75	155	1		Sheffield	2^0C	M
NE	Pipers River SR	A2263	5	0	11.41	1,254			Launceston Airport	2^0C	M
NE	Poatina MR	A1604	5	0	5.8	373	1		Liawenee	2^0C	M
NE	Poatina MR	A1604	12	0	7.41	338	1		Liawenee	2^0C	M
NE	Poatina MR	A1604	25	0	11.52	338	1		Liawenee	2^0C	M
NE	Poatina MR	A1604	40	0	11.17	338	1		Liawenee	2^0C	M
NE	Poatina MR	A1604	54	0	10.31	431			Launceston Airport	2^0C	M
NW	Ridgley MR	A1015	51	0	9.23	2,772			Luncheon Hill	2^0C	M
NW	Ridgley MR	A1015	92	0	8.62	1,579			Luncheon Hill	2^0C	M
NW	Sheffield MR	A1031	7	0	7.18	652			Sheffield	2^0C	M
NW	Sheffield MR	A1031	18	0	6.19	1,006			Sheffield	2^0C	M
NW	Sheffield MR	A1031	30	0	8.82	1,734			Sheffield	2^0C	M
NW	Sheffield MR	A1031	59	0	10.02	1,656			Sheffield	2^0C	M
NW	Sheffield MR	A1031	94	0	9.14	5,326			Sheffield	2^0C	M

Sth	South Arm Hwy	A0498	5	0	3.94	17,489			Hobart	2^0C	M
Sth	South Arm SR	A2069	5	0	10.7	10,664			Hobart Airport	4^0C	H
Sth	South Arm SR	A2069	37	0	9.65	3,004			Hobart Airport	4^0C	H
Sth	Southern Outlet Hwy	A0171	5	0	9.53	32,349	17		Hobart	2^0C	VH
Sth	Southern Outlet Hwy	A0171	5	2.65	3.05	32,349			Hobart	CC + 4^0C	VH
Sth	Southern Outlet Hwy	A0171	5	4.35	4.7	32,349			Hobart	CC + 4^0C	VH
Sth	Tasman Highway	A0113	7	0	6.8	35,227	10		Hobart	CC + 4^0C	VH
Sth	Tasman Highway	A0113	7	4.5	6	35,227			Hobart	CC + 4^0C	VH
Sth	Tasman Highway	A0113	7	6.8	12.8	35,227	10		Hobart Airport	CC + 4^0C	VH
Sth	Tasman Highway	A0113	11	0	9.94	13,807	1		Hobart Airport	2^0C	M
Sth	Tasman Highway	A0113	12	0	8.43	3,180	2		Hobart Airport	2^0C	M
Sth	Tasman Highway	A0113	15	0	9.63	1,820	16		Tunnack	2^0C	H
Sth	Tasman Highway	A0113	16	0	11.3	1,810	34		Tunnack	2^0C	H
Sth	Tasman Highway	A0113	18	0	10.54	1,837	13		Tunnack	2^0C	H
Sth	Tasman Highway	A0113	20	0	10.91	1,893			Tunnack	2^0C	M
Sth	Tasman Highway	A0113	31	0	8.44	937			Tunnack	2^0C	M
NE	Tasman	A0113	40	0	11.77				Fingal	2^0C	M

	Highway					905					
NE	Tasman Highway	A0113	62	0	9.34	1,394			Fingal	2^0C	M
NE	Tasman Highway	A0113	68	0	11.79	325			Scottsdale	2^0C	M
NE	Tasman Highway	A0113	70	0	12.85	325			Scottsdale	2^0C	M
NE	Tasman Highway	A0113	74	0	9.03	736			Scottsdale	2^0C	M
NE	Tasman Highway	A0113	76	0	10.52	1,305			Scottsdale	2^0C	M
NE	Tasman Highway	A0113	78	0	11.16	1,453	1		Scottsdale	2^0C	M
NE	Tasman Highway	A0113	84	0	11.76	895			Scottsdale	2^0C	M
NE	Tasman Highway	A0113	90	0	12.83	1,407			Launceston Airport	4^0C	M
NW	Waratah MR	A1617	5	0	6.89	368			Luncheon Hill	2^0C	M
NW	Waratah MR	A1617	5	2.13	3.66	368		3	Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	28	0	10.33	200			Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	28	7	7.39	200		6	Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	46	0	6	200			Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	46	1.56	2.5	200		4	Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	63	0	8.17	153			Luncheon Hill	2^0C	H
NW	Waratah MR	A1617	94	0	12.11	153			Luncheon Hill	2^0C	H

NE	West Tamar Highway	A0252	26	0	9.9	10,348			Launceston Airport	4^0C	M
NE	West Tamar Highway	A0252	41	0	6.94	5,589			Launceston Airport	4^0C	M
NE	West Tamar Highway	A0252	94	0	11.83	4,089			Launceston Airport	4^0C	M
NW	Zeehan Highway	A0472	5	0	12.75	1,680	3		Lake Plimsoll	2^0C	M
NW	Zeehan Highway	A0472	51	0	12.78	392			Lake Plimsoll	2^0C	M
NW	Zeehan Highway	A0472	94	0	9.76	392			Lake Plimsoll	2^0C	M


TASMANIAN PROCLAIMED STATE ROADS
ICE INSPECTION TREATMENT PRIORITY
RESPONSE PRIORITY
Very High (VH)
High (H)
Moderate (M)
Low (L)
Weather Station Regions for VH ,H & M
King Island
CURRIE
Flinders Island
Stanley
Burnie
Devonport
LUNCHEON HILL
SHEFFIELD
SCOTTSDALE
LAUNCESTON
LAUNCESTON AIRPORT
Deloraine
FINGAL
LIAWENEE
LAKE PLIMSOLL
LAKE ST CLAIR NATIONAL PARK
Queenstown
Strahan
ROSS
Campbell Town
TUNNACK
MAYDENA
HOBART
HOBART AIRPORT
GROVE
A2289
A2218
A2182
A0029
A0498
A1675
A0090
A2300
A0113
A0171
A0168
A1167

APPENDIX C – KNOWN SNOW SITES

Road Name	Road No.	Start link	Start Ch	End Link	End Ch
Anthony MR	A1714	05	0.00	94	7.24
Cethana TR	A2603	05	0.00	05	11.21
Cradle Mt DR	A2674	05	0.00	05	9.97
Cradle Mt DR	A2674	56	0.00	56	9.17
Cradle Mt DR	A2674	94	0.00	94	6.99
Cradle Mt TR	A2577	41	0.00	41	9.51
Cradle Mt TR	A2577	63	0.00	63	10.18
Cradle Mt TR	A2577	87	0.00	87	11.53
Cradle Mt TR	A2577	94	0.00	94	0.62
Cradle Mt TR	A2577	96	0.00	96	2.36
Gordon River MR	A1727	36	0.00	36	7.54
Gordon River MR	A1727	43	0.00	43	8.58
Massey Greene DR	A1688	05	0.00	05	11.74
Massey Greene DR	A1688	55	0.00	55	6.85
Massey Greene DR	A1688	94	0.00	94	8.50
Huon Hwy	A0168	06	0.00	06	10.04
Huon Hwy	A0168	17	0.00	17	9.51
Huon Hwy	A0168	68	0.00	68	10.06
Lake Dobson TR	A2535	05	0.00	05	7.22
Lake Dobson TR	A2535	94	0.00	94	8.38
Lake SR	A2100	05	0.00	05	10.32
Lake SR	A2100	12	0.00	12	9.94
Lake SR	A2100	18	0.00	18	9.29
Lake SR	A2100	22	0.00	22	6.31
Lake SR	A2100	30	0.00	30	11.97
Lake SR	A2100	35	0.00	35	8.29
Lake SR	A2100	42	0.00	42	10.31
Lake SR	A2100	49	0.00	49	9.42
Lake SR	A2100	53	0.00	53	6.19
Lake SR	A2100	58	0.00	58	10.11
Lake SR	A2100	63	0.00	63	7.10
Lake SR	A2100	70	0.00	70	8.22
Lake SR	A2100	77	0.00	77	6.18

Road Name	Road No.	Start link	Start Ch	End Link	End Ch
Lake SR	A2100	82	0.00	82	12.04
Lake SR	A2100	85	0.00	85	7.52
Lake SR	A2100	90	0.00	90	8.57
Lake St Clair TR	A2580	05	0.00	05	5.02
Lyell Hwy	A0197	12	0.00	12	11.32
Lyell Hwy	A0197	30	0.00	30	6.82
Lyell Hwy	A0197	33	0.00	33	7.30
Lyell Hwy	A0197	35	0.00	35	10.76
Lyell Hwy	A0197	38	0.00	38	11.50
Lyell Hwy	A0197	43	0.00	43	7.51
Lyell Hwy	A0197	46	0.00	46	7.37
Lyell Hwy	A0197	48	0.00	48	6.18
Lyell Hwy	A0197	51	0.00	51	9.25
Lyell Hwy	A0197	53	0.00	53	10.41
Marlborough SR	A2443	05	0.00	05	5.89
Marlborough SR	A2443	19	0.00	19	8.03
Marlborough SR	A2443	44	0.00	44	9.96
Marlborough SR	A2443	93	0.00	93	7.47
Midland Hwy	A0087	20	0.00	20	9.91
Midland Hwy	A0087	26	0.00	26	4.99
Midland Hwy	A0087	31	0.00	31	10.05
Midland Hwy	A0087	37	0.00	37	11.49
Midland Hwy	A0087	43	0.00	43	12.96
Mt Barrow TR	A2564	07	0.00	07	3.51
Murchison Hwy	A0485	20	0.00	20	11.50
Murchison Hwy	A0485	26	0.00	26	4.80
Murchison Hwy	A0485	31	0.00	31	11.04
Murchison Hwy	A0485	39	0.00	39	9.98
Murchison Hwy	A0485	45	0.00	45	9.09
Murchison Hwy	A0485	52	0.00	52	9.25
Murchison Hwy	A0485	58	0.00	58	9.42
Murchison Hwy	A0485	63	0.00	63	4.56
Murchison Hwy	A0485	69	0.00	69	10.68
Murchison Hwy	A0485	75	0.00	75	8.94
Murchison Hwy	A0485	82	0.00	82	10.96

Road Name	Road No.	Start link	Start Ch	End Link	End Ch
Murchison Hwy	A0485	90	0.00	90	9.25
Murchison Hwy	A0485	94	0.00	94	10.13
Olivers TR	A2616	05	0.00	05	10.27
Olivers TR	A2616	94	0.00	94	10.75
Poatina MR	A1604	05	0.00	05	5.80
Poatina MR	A1604	12	0.00	12	7.41
Poatina MR	A1604	25	0.00	25	11.52
Poatina MR	A1604	40	0.00	40	11.17
Poatina MR	A1604	54	0.00	54	10.31
Sheffield MR	A1031	07	0.00	07	7.18
Southern Outlet Hwy	A0171	05	0.00	05	9.53
Tasman Hwy	A0113	15	0.00	15	9.63
Tasman Hwy	A0113	16	0.00	16	11.30
Tasman Hwy	A0113	18	0.00	18	10.54
Tasman Hwy	A0113	20	0.00	20	10.91
Waratah MR	A1617	5	0.00	05	6.89

ANNEXURE D – CALCIUM CHLORIDE SITES

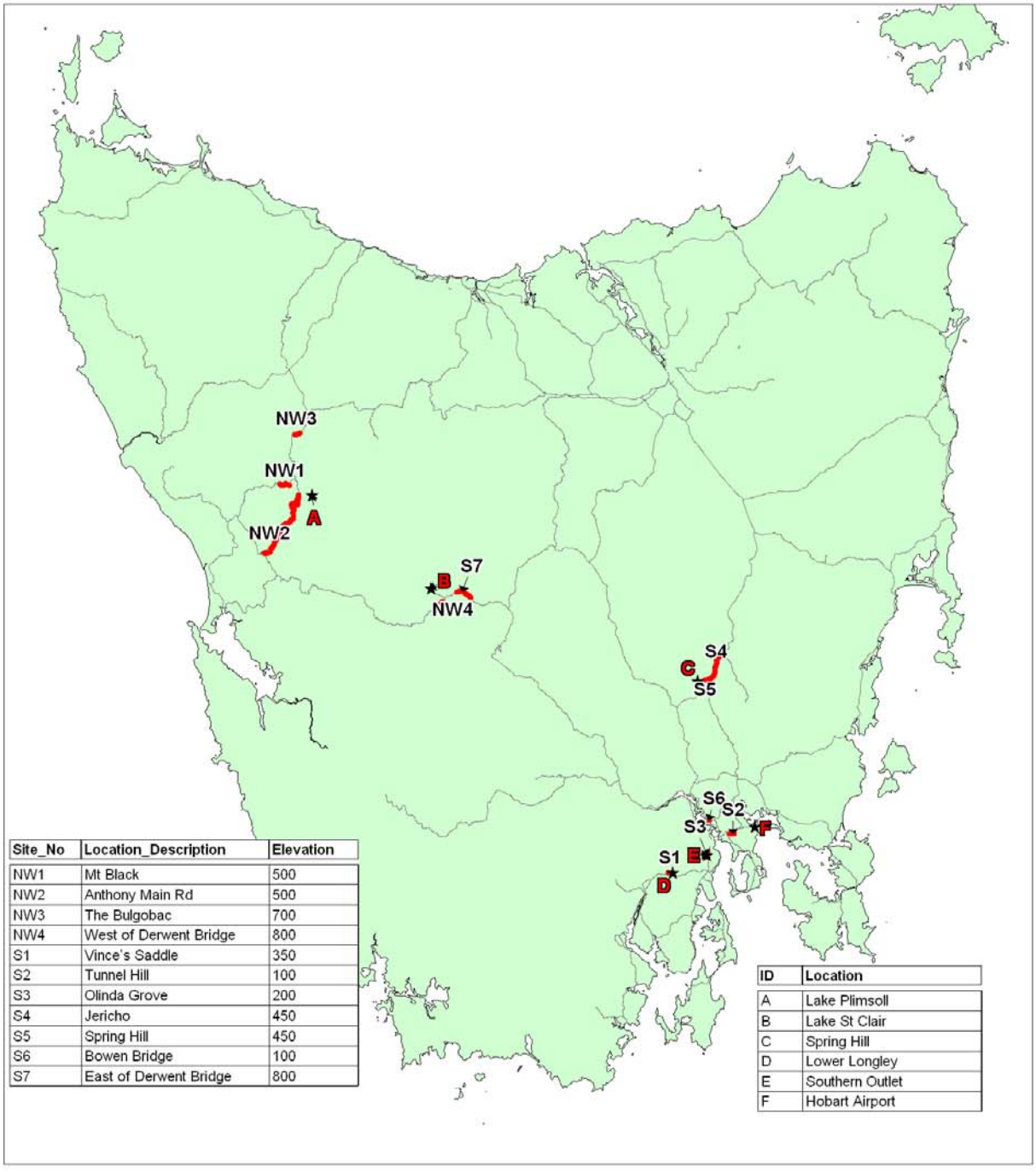
Southern Region

Site No	Road Name	Road No.	Link	Chainage From	Chainage To	Location Description	Length	Width	Area
S1	Huon Hwy	A0168	17	3.5	5.00	Vince's Saddle	1500m	varies 8m to dual carriageway	18000m^2
S2	Tasman Hwy	A0113	7	4.5	6.00	Tunnel Hill	1500m	9m each carriageway	40000m^2
S3a	Southern Outlet	A0171	5	2.65	3.05	Olinda Grove	400m	10m	4000m^2
b	Southern Outlet	A0171	5	2.65	3.05	Olinda Grove	400m	10m	4000m^2
c	Southern Outlet	A0171	5	4.35	4.70	Olinda Grove	350m	11m	3850m^2
S4a	Midland Hwy	A0087	31	5.8	6.5	Spring Hill	700m	17m	11900m^2
b	Midland Hwy	A0087	31	6.5	6.8	Spring Hill	300m	13m	3900m^2
S5a	Midland Hwy	A0087	37	7.2	7.6	Lemon Hill	400m	12m	4800m^2
b	Midland Hwy	A0087	37	7.6	7.8	Lemon Hill	200m	9m	1800m^2
S6	East Derwent Hwy	A0029	29	Ramps 4 & 5		Curve east end of Bowen Bridge	150m	24m	3600m^2
S7a	Lyell Hwy	A0197	51	8.51	8.93	East of Derwent Bridge	420m	6m	2520m^2
b	Lyell Hwy	A0197	53	1.33	1.78	East of Derwent Bridge	450m	6m	2700m^2
c	Lyell Hwy	A0197	53	2.30	2.48	East of Derwent Bridge	180m	6m	1080m^2

d	Lyell Hwy	A0197	53	4.09	4.35	East of Derwent Bridge	260m	6m	1560m^2
e	Lyell Hwy	A0197	53	5.40	5.62	East of Derwent Bridge	220m	6m	1320m^2

Northwest Region

Site No	Road Name	Road No	Link	Chainage From	Chainage To	Location Description	Length	Width	Area
NW1 a	Murchison Highway	A0485	20	2.35	2.70	Mt Black	350m	6	2100m^2
b			20	3.81	5.21		1600m	6	9600m^2
c			20	5.8	5.97		170m	6	1020m^2
d			20	6.49	6.58		90m	6	540m^2
e			20	6.87	6.96		90m	6	540m^2
NW2 a	Anthony Main Rd	A1714	5	2.57	2.92		350m	6.6	2310m^2
b			5	3.35	3.94		360m	6.6	2376m^2
c			5	4.20	4.82		620m	6.0	3720m^2
d			5	7.29	7.43		140m	6	840m^2
e			5	9.42	9.78		120m	7m	840m^2
f			48	1.1	1.42		320m	6.6	2112m^2
g			48	3.42	6.57		3100m	6.0	18,600m^2
h			94	4.6	4.8		200m	6.0	1200m^2
i			94	5.26	5.62		360m	6	2160m^2
NW3 a	Murchison Highway	A0485	39	0.78	1.18	*The Bulgobac*	400m	6	2400m^2
b			39	4.48	5.10		620m	6	3720m^2
NW4 a	Lyell Highway	A0197	56	1.58	1.98	West of Derwent Bridge	400m	6	2400 m^2
b			56	2.75	2.95		200m	6	1200m^2



Site_No	Location_Description	Elevation
NW1	Mt Black	500
NW2	Anthony Main Rd	500
NW3	The Bulgobac	700
NW4	West of Derwent Bridge	800
S1	Vince's Saddle	350
S2	Tunnel Hill	100
S3	Olinda Grove	200
S4	Jericho	450
S5	Spring Hill	450
S6	Bowen Bridge	100
S7	East of Derwent Bridge	800

ID	Location
A	Lake Plimsoll
B	Lake St Clair
C	Spring Hill
D	Lower Longley
E	Southern Outlet
F	Hobart Airport

ANNEXURE E – BOM ADVICE SAMPLE

Bureau of Meteorology, Tasmania & Antarctica Region, Sample Forecast

These data were created from the 20100914 00 Z model run

Place	Day	Date	Min	Max	Prob	Amt
Scottsdale	Tuesday	14 September	12.0	75.0	0.7	
Scottsdale	Wednesday	15 September	5.1	11.7	75.0	1.5
Scottsdale	Thursday	16 September	3.0	11.1	66.7	0.5
Scottsdale	Friday	17 September	3.2	12.9	25.0	0.0
Luncheon_Hill	Tuesday	14 September	10.7	100.0	4.0	
Luncheon_Hill	Wednesday	15 September	5.2	8.8	100.0	5.0
Luncheon_Hill	Thursday	16 September	3.4	9.4	83.3	1.8
Luncheon_Hill	Friday	17 September	4.6	10.7	100.0	2.8
Sheffield	Tuesday	14 September	11.6	87.5	1.9	
Sheffield	Wednesday	15 September	4.6	9.6	100.0	3.0
Sheffield	Thursday	16 September	2.3	9.7	66.7	1.1
Sheffield	Friday	17 September	3.4	11.5	75.0	1.4
Launceston_AP	Tuesday	14 September	13.3	62.5	0.7	
Launceston_AP	Wednesday	15 September	4.8	12.1	87.5	2.0
Launceston_AP	Thursday	16 September	2.2	11.6	66.7	0.7
Launceston_AP	Friday	17 September	2.6	13.2	50.0	0.3
Fingal	Tuesday	14 September	13.6	62.5	0.4	
Fingal	Wednesday	15 September	2.6	12.8	75.0	1.2
Fingal	Thursday	16 September	0.5	11.6	50.0	0.5
Fingal	Friday	17 September	0.8	13.6	25.0	0.0
Ross	Tuesday	14 September	13.3	75.0	0.9	
Ross	Wednesday	15 September	3.9	11.2	100.0	2.3
Ross	Thursday	16 September	1.5	10.5	50.0	0.8
Ross	Friday	17 September	2.6	12.5	50.0	0.4
Hobart_AP	Tuesday	14 September	15.0	100.0	1.5	
Hobart_AP	Wednesday	15 September	6.5	11.9	100.0	4.0
Hobart_AP	Thursday	16 September	3.8	11.1	100.0	2.4
Hobart_AP	Friday	17 September	4.8	13.6	100.0	1.6
Hobart	Tuesday	14 September	15.1	100.0	1.6	
Hobart	Wednesday	15 September	6.8	11.6	100.0	4.0
Hobart	Thursday	16 September	3.9	11.0	100.0	2.3

Hobart	Friday	17 September	5.3	13.4	100.0	1.9	
Tunnack	Tuesday	14 September		11.2	75.0	1.1	
Tunnack	Wednesday	15 September	3.1	8.0	100.0	3.0	
Tunnack	Thursday	16 September		7.5	100.0	1.6	
Tunnack	Friday	17 September	1.0	9.8	75.0	0.9	
Grove	Tuesday	14 September		13.9	100.0	1.8	
Grove	Wednesday	15 September	3.7	10.2	100.0	5.0	
Grove	Thursday	16 September	0.5	9.8	100.0	2.2	
Grove	Friday	17 September	1.9	12.0	100.0	2.4	
Maydena	Tuesday	14 September		11.3	100.0	4.0	
Maydena	Wednesday	15 September	3.3	7.1	100.0	9.0	
Maydena	Thursday	16 September	0.3	7.0	100.0	4.0	
Maydena	Friday	17 September	1.7	8.9	100.0	5.0	
Liawenee	Tuesday	14 September		7.1	87.5	2.0	
Liawenee	Wednesday	15 September	0.1	3.4	100.0	5.0	
Liawenee	Thursday	16 September	-2.8	3.4	83.3	1.9	
Liawenee	Friday	17 September	-1.9	5.4	75.0	2.0	
LakeStClair	Tuesday	14 September		8.3	100.0	6.0	
LakeStClair	Wednesday	15 September	2.2	4.2	100.0	12.0	
LakeStClair	Thursday	16 September	-0.9	4.4	100.0	5.0	
LakeStClair	Friday	17 September	0.5	6.5	100.0	6.0	

Please note:
The information herein is supplied for the use of DIER and its Contractors only. It is not intended for use by the public.
The forecast values are from computer models and contain no input from weather forecasters.

ANNEXURE F – WEATHER STATIONS AND TEMPERATURE DATA

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2005	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	0	0	0	0	1	0	1	4	6	13	12	6	14	9	15	5	12	3	6	0	2	0	0
Luncheon_Hill	0	0	0	0			0	0	0		5		3	5	5	10	2	9	0	2	0	0	0	0
Sheffield	0	0	0	1	0	2	3	9	8	13	6	11	6	16			0	4	0	0	0	0	0	0
Launceston Air Port	0	1	0	0	1	2	0	2	9	13	18	20	10	18	12	17	8	13	2	6	0	1	0	0
Fingal	0	1		1	1	4	8	14	14	18	18	23	22	24	18	22	10	16	4	5	2	3	0	0
Ross	0	1	0	1	4	9	1	7	14	17	18	20	13	20	13	19	7	14	3	0	2	5	0	2
Hobart Air Port	0	0	0	0	0	1	0	0	0	5	2	16	3	14	2	6	0	6	0	0	0	0	0	0
Hobart	0	0	0	0	0	1	0	0	0	3	3	16	3	7	1	4	0	5	0	13	0	0	0	0
Lake St Clair	3	6	2	5	13	17	13	16	16	20	24	26	17	25	19	24	22	26	5	4	8	14	2	6
Grove (research)	0	1	0	0	4	7	6	10	10	21	18	26	7	17	11	17	8	15	2	3	3	5	0	0
Grove	0	1	0	0	4	7	5	9	9	20	17	26	4	15	8	15	7	12	2	5	1	4	0	0
Maydena	0	1	0	1	6	11	4	9	13	14	19	22	13	16	10	19	9	20	2	23	3	6	0	1
Liawenee	8	13			14	24	18	21	22	22	26	26	25	30	23	26	23	26	16	8	12	19	5	11
Tunnack	0	2	2	3	4	8	3	11	14	15	18	20	13	20	13	21	11	17	2		1	4	0	1

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2006	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	0	1	1	0	0	4	8	6	18	15	24	6	11	9	14	6	15	7	14	2	6	1	1
Luncheon_Hill	0	0	0	0	0	0	0	7	3	12	1	9	4	11	1	7	2	12	5	9	2	7	0	5
Sheffield	0	0	0	0	0	1	4	13	11	19	18	22	9	16	6	20	5	14	6	10	1	6	0	3
Launceston Air Port	0	1	0	1	0	0	8	16	15	23	22	26	13	21	14	20	7	16	10	14	5	8	1	3
Fingal	1	2	0	1	0	5	11	13	17	24	25	25	21	24	23	26	12	18	12	15	5	12	1	6
Ross	1	1	1	2	2	4	9	14	15	23	23	26	17	22	15	24	7	13	12	16	9	10	2	6
Hobart Air Port	0	0	0	0	0	0	1	3	2	10	9	16	9	18	2	12	2	6	0	4	0	2	0	0
Hobart	0	0	0	0	0	0	1	2	2	5	7	12	4	12	1	7	0	3	0	4	0	1	0	0
Lake St Clair	5	9	3	7	9	12	21	22	24	28	24	27	25	29	23	31	21	26	18	21	16	20	13	18
Grove (research)	0	5	0	2	3	7	10	14	13	22	19	22	19	23	15	20	5	10	10	12	6	11	3	10
Grove			0	2	0	6	8	12	10	18	17	22	18	23	11	17	4	9	9	11	4	10	0	6
Maydena	0	4	0	0	2	7	4	18	16	22	14	20	19	24	15	20	7	15	9	16	5	10	3	9
Liawenee	7	14	5	12	11	20	22	26	28	29	28	30	29	31	28	29	24	25	22	24	18	21	16	19
Tunnack	1	3	0	3	3	7	9	18	16	26	18	26	16	25	12	21	7	18	8	15	7	12	4	9

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2007	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	2	0	0	0	1	0	1	0	1	10	21	8	18	5	12	6	13	8	14	1	2	0	1
Luncheon_Hill	0	0	0	0	0	0	0	0	9	19	5	15	5	11	2	5	1	11	0	0	0	0	0	0
Sheffield	0	0	0	0	0	2	0	3	0	2	18	27	14	23	7	16	7	13	4	11	0	2	0	0
Launceston Air Port	0	0	0	0	1	3	0	2	0	3	21	27	16	19	10	17	10	14	9	15	1	2	0	0
Fingal	0	0	0	0	2	4	6	10	5	12	23	24	21	27	19	22	9	14	8	14	2	3	0	2
Ross	0	0	0	1	2	8	4	6	3	7	25	28	20	24	14	17	14	18	9	16	1	4	1	2
Hobart Air Port	0	0	0	0	0	0	1	1	0	0	9	20	5	15	6	14	2	7	0	1	0	0	0	0
Hobart	0	0	0	0	0	0	0	0	0	0	10	18	3	11	5	10	0	3	0	0	0	0	0	0
Lake St Clair	2	6	2	7	6	12	13	20	10	17	30	30	25	30	16	23	20	26	17	24	10	16	4	11
Grove (research)	0	1	1	1	4	7	9	12	3	6	25	30	22	27	15	19	11	18	8	11	1	4	0	3
Grove	0	1	0	1	2	7	7	10	1	6	25	27	17	25	14	17	10	17	5	11	1	2	0	2
Maydena	0	2	1	1	2	6	7	11	0	7	25	29	20	29	14	18	12	21	6	14	2	5	0	2
Liawenee	31	0	28	0	31	0	30	0	31	0	29	21	31	15	31	11	30	9	31	8	28	0	31	0
Tunnack	1	1	1	1	3	7	4	8	1	4	25	29	20	29	11	20	12	19	7	18	1	3	2	5

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2008	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	1	0	0	0	2	1	4	3	10	4	10	16	21	14	26	10	15	4	5	1	5	1	2
Luncheon_Hill	0	1	1	1	1	2	1	2	0	3	0	2	5	13	7	15								
Sheffield	0	1	0	1	0	3	2	4	4	7	3	11	12	21	11	23	6	18	2	7	2	6	2	4
Launceston Air Port	0	0	0	2	0	2	3	5	6	9	7	11	16	27	20	24	9	13	3	8	2	6	1	2
Fingal	0	1	0	1	2	5	5	14	13	22	17	24	20	27	24	27	16	19	10	16	2	5	1	3
Ross	0	1	0	1	1	5	6	12	12	20	12	20	18	28	22	27	8	14	8	12	4	5	4	5
Hobart Air Port	0	0	0	0	0	0	0	2	1	8	4	11	12	19	6	16	3	7	1	2	0	2	0	0
Hobart	0	0	0	0	0	0	0	0	1	2	1	7	7	15	5	11	0	4	0	1	0	0	0	0
Lake St Clair	5	13	12	18	11	21	17	22	14	23	20	25	29	30	29	30	23	24	13	21	11	18	10	18
Grove (research)	0	1	1	2	2	8	12	15	10	15	14	17	21	27	20	27	8	14	6	9	3	8	3	5
Grove	0	0	1	2	2	6	8	13			13	15	21	26	17	24	8	13	4	7	0	5	2	5
Maydena	2	4	3	4	1	9	3	12	6	9	8	16	19	29	16	27	9	22	4	8	2	7	1	2
Liawenee	8	13	15	19	15	18	17	23	21	27	23	26	28	30	25	27	22	25	18	23	16	20	15	22
Tunnack	0	2	1	4	3	7	5	14	10	17	9	19	20	28	22	29	14	23	7	10	3	7	3	4

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2009	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	2	0	0	0	0	4	5	4	10	5	12	11	18	2	7	1	6	1	8	1	2	0	1
Luncheon_Hill	0	0	0	0	2	5	0	3	1	4	3	11	0	6	0	4	2	6	0	0	0	0	0	
Sheffield	0	3	0	0	0	2	3	7	5	13	6	12	9	21	2	9	2	12	3	10	0	0	0	1
Launceston Air Port	0	2	0	0	0	0	3	5	6	15														
Fingal	3	3	0	1	0	1	5	9	15	21	6	14	16	24	4	11	6	13	3	11	1	4	0	2
Ross	2	3	0	1	0	0	5	6	13	18	9	16	16	22	3	9	4	12	6	15	1	3	0	2
Hobart Air Port	0	0	0	0	0	0	1	2	1	2	0	8	2	10	0	1	0	4	0	2	0	0	0	0
Hobart	0	0	0	0	0	0	2	2	0	3	0	8	5	10	0	2	0	4	0	1	0	0	0	0
Lake St Clair	4	12	6	9	3	12	14	17	17	21	21	26	21	29	17	25	18	25	17	27	4	13	7	16
Grove (research)	0	2	2	6	0	0	3	9	7	12	11	21	16	19	3	10	5	11	5	11	1	2	0	3
Grove	0	1			0	0	2	5	7	10	11	15			1	7	4	8						
Maydena	0	0	2	6	0	2	3	6	6	11	10	20	13	21	5	14	7	15	10	13	0	1	0	3
Liawenee	9	13	6	12	9	14	19	23	20	23	22	28	27	30	23	27	23	26	25	27	8	11	13	18
Tunnack	1	4	1	2	0	0	5	11	7	16	14	20	18	25	8	18	7	19	6	13	2	4	1	4

Weather Station	**Number of days Less than 2 & 4 Degrees**																							
Year 2010	Jan		Feb		March		April		May		June		July		Aug		Sept		Oct		Nov		Dec	
	2°	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**	**2°**	**4°**
Scottsdale	0	0	0	0	0	0	0	1	4	7	7	16	6	20	8	22	11	12	6	8				
Luncheon_Hill	0	0	0	0	0	1	0	0	1	3	1	7	1	6	3	13	6	12	2	7				
Sheffield	0	0	0	0	1	1	1	2	6	14	11	16	10	20	13	20	10	12	3	8				
Launceston Air Port	0	0	0	1	1	4	3	9	13	21	20	24	23	25	18	25	12	16	8	15				
Fingal	0	0	0	1	1	4	3	9	13	21	20	24	23	25	18	25	12	16	8	15				
Ross	0	1	1	1	2	4	3	9	14	21	18	25	23	23	12	21	11	14	10	11				
Hobart Air Port	0	0	0	0	0	0	0	1	3	7	6	13	8	18	5	15	3	8	0	6				
Hobart	0	0	0	0	0	0	0	1	2	3	2	10	3	12	2	9	2	10	0	3				
Lake St Clair	7	11	4	11	7	12	8	14	19	26	24	28	24	26	23	24	20	25	16	21				
Grove (research)	0	4	1	1	1	2	1	7	13	21	21	28	22	26	17	25	10	14	8	14				
Grove																								
Maydena	1	4	1	2	1	4	2	2	11	19	14	19	14	21	21	27	12	16	5	14				
Liawenee	8	17	5	11	12	15	11	20	23	25	28	29	25	30	29	31	24	30	18	22				
Tunnack	1	5	1	3	1	2	3	4	17	21	19	27	20	24	21	26	11	20	9	15				

ANNEXURE G – CALCIUM CHLORIDE PRODUCT DATA

Redox Pty Ltd
ABN 92 000 762 345
Corporate Office Sydney
Locked Bag 15 Minto NSW Australia 2566
2 Swettenham Road Minto NSW Australia 2566
all deliveries Holmes Road entrance
phone +61 2 9733 3000
facsimile +61 2 9733 3111
web www.redox.com
email sydney@redox.com

REDOX

SPECIFICATION SHEET

RYE PLANT HYRE
PO BOX 63
BERRIDALE NSW
AUSTRALIA 2628

Date : 14/05/09

Attention : PHIL RYE

Despatch by mail

The following specifications are the latest revision and supersede all previous specifications for this product code.

Code : CACHLO70

Desc : CALCIUM CHLORIDE 74% GRADE 1

Formula : CaCl2.2H2O

Calcium chloride, as CaCl2 (%)	min 74.0
Mg and Alkali Chlorides, as NaCl (%)	max 3.5
Hydrate insoluble (%)	max 0.2
Alkalinity, (Ca(OH)2) (%)	max 0.2
Sulfate, as CaSO4 (%)	max 0.2
Heavy metals, as Pb (ppm)	max 20
Arsenic, as As (ppm)	max 2

Current revision number : 7 Revised on : 27/03/08
Reason : Changed NaCl from max 4.0 to max 3.5, made As, Pb & Heavy met guar.

004001 16:57:49 14 MAY 2009 ELISET

Authorised by : Damien Barrett B.Sc
Quality Assurance Manager

Form 2122 rev 3

ANNEXURE H – REPORT FORM SAMPLES

Contractor's Road Conditions Report

Date: Time: Issued By:

		Road Condition Status			Road Vehicle Status					Action Required Taken				Estimated Opening Time		Authority to Close Road	
		ICE Gritting Completed	FROST	Snow Depth (mm)	OPEN	CAUTION	EXTREME CAUTION	4 X 4	CLOSED	Ice Gritting Commenced	Ice gritting to commence	Snow clearing commenced	Snow clearing to commence	4 X 4 Vehicle & 2 wheel Vehicles with Chains	All other Vehicles	Tasmanian Police Officer	DIER delegated Officer
Road	Link/ch																
Forecast Conditions:																	
Other Comments/ Recommendations:																	

CALCIUM CHLORIDE

SITE No:	ROAD NAME:	LINK No:	SECTION END (km):	SHEET No:
	DATE/TIME:	WIND (nil, light, gusty, strong):		
	ROAD SURFACE (dry, damp, wet):	DIP VOLUME (start) (L):		
	SOLUTION SG (hydrometer):			

	RUN NUMBER	*1*	*2*	*3*	*4*	*5*	6
SPARYING	START RUN CHINAGE (km)						
	END RUN CHAINAGE (km)						
	LENGTH of RUN (m)						
	SPRAY WIDTH (m)(2)						
	SPRAY AREA (m²)						
	DIP VOLUME (end) (L)						
RATES	VOLUME USED (L)						
	APPLICATION RATE (ml/m²) (3)						
	NET CaCl2 RATE (gms/m²) (4)						