



**Government  
of South Australia**

Department for  
Energy and Mining



Dear [REDACTED]

I am writing in relation to your application made under the *Freedom of Information Act 1991* (FOI Act) in which you requested access to the following documents:

*"I want access to the investigation report of the domestic gas explosion that occurred at [REDACTED] on the 25<sup>th</sup> of November 2018. I received burns to my face, chest, arms and hands as a result of this explosion and was emergency evaced to Royal Adelaide Hospital. The matter was investigated by Mr Ron Jessen from the Department of Mines and Energy."*

In accordance with Premier and Cabinet Circular PC045, if you are given access to documents as a result of this FOI application, details of your application, and the documents to which access is given, may be published in the agency's disclosure log. A copy of PC045 can be found at <http://dpc.sa.gov.au/what-we-do/services-for-government/premier-and-cabinet-circulars>.

A search has been conducted and one (1) document was located that is within the scope of your application. The document is identified in the attached schedule. In respect of this document, I have determined as follows:

#### **Document 1**

I have determined that this document should be released in full.

#### **Appeal Rights**

If you are dissatisfied with this decision, you are entitled to exercise your rights of review and appeal as outlined in the attached documentation.

Should you have any enquiries in relation to this matter, please do not hesitate to contact me on [REDACTED] or email [DEM.FOI@sa.gov.au](mailto:DEM.FOI@sa.gov.au).

Yours sincerely

A handwritten signature in black ink, appearing to read 'Julianne'.

Julianne Cirson  
**Accredited FOI Officer**

21 February 2019

#### CORPORATE SERVICES

Level 4, 11 Waymouth Street, Adelaide SA 5000 | GPO Box 320 Adelaide SA 5001 | DX452  
Tel (+61) 8463 3000 | ABN 83 768 683 934



## SCHEDULE OF DOCUMENTS

Freedom of Information application by [REDACTED] – “I want access to the investigation report of the domestic gas explosion that occurred at [REDACTED] on the 25<sup>th</sup> of November 2018. I received burns to my face, chest, arms and hands as a result of this explosion and was emergency evaced to the Royal Adelaide Hospital. The matter was investigated by Mr Ron Jessen from the Department of Mines and Energy.”

<b>Doc No</b>	<b>Description</b>	<b>Exemption Clause(s)</b>	<b>Determination</b>
1	Gas incident report # 258 dated 26 November 2018	Nil	Released in full

**GAS INCIDENT REPORT NO # 258**

DATE OF INVESTIGATION	5/12/2018
ADDRESS	Incident reported on 26/11/18. [REDACTED]
OWNER	[REDACTED]
CONTACT	[REDACTED] [REDACTED]
INSTALLATION/APPLIANCE DETAILS	Electrolux cooker Model GCLUXW-P
GAS SUPPLIER	Elgas
GAS TYPE	LPG
INSTALLER LICENSED	Unknown
INSTALLER NAME	Unknown
INSTALLER ADDRESS	Unknown
DATE OF INSTALLATION	Unknown
OVERPRESSURE PROTECTION REQUIRED?	Yes
COMPLIANCE WITH AUSTRALIAN STANDARDS?	Yes
TEST FOR SOUNDNESS	Gas Escape at appliance and service
OTHER APPLIANCE (S)	Heatlie BBQ Wonder Fire Type 2
APPLIANCE PURCHASED FROM	Unknown

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## **DESCRIPTION OF INCIDENT**

Occupiers of the rental cottage, [REDACTED], arrived on the evening of the 25/11/18 and prepared, cooked and consumed dinner. The hotplate burners, griller and oven of the gas cooker were all used to prepare the meal without incident. During the clearing up and washing of dishes, a gas odour was noticed. The position of the gas knobs was checked, with uncertainty as to whether the position of the griller knob is off. [REDACTED] then used the gas lighter to check if the gas was on at the hotplate burners and then the griller burner. At this moment an explosion occurred, burning [REDACTED], requiring her to be Medivac.

Refer to Appendix D and E for the supplied statements of those involved at the time of the incident.

## **INVESTIGATION SUMMARY**

A very small gas escape of 0.047 lt/hr was identified through manometer pressure testing the entire installation. The rate of this escape measured was insufficient to cause an incident.

Operation of the cooker burners and controls were tested and found to perform as per the Original Equipment Manufacturer (OEM) requirements in respect to turning on and off.

The aftermarket universal griller knob was found to be different to the others and there was no control panel (backing plate) with indicators showing the knob operating positions (On-Off, Hi-Low). This is likely to have created operator uncertainty whether the griller control knob was in the desired position.

There were lighting instructions attached to the wall, however, they only covered the oven operation.

From the statements provided and results of testing of the appliance, it is more than likely that the griller knob was accidentally left in the on position during the clear up after dinner and that the gas was ignited by the gas lighter being used by [REDACTED]

## INVESTIGATION / OBSERVATIONS

### Observations on arrival:

- Cooker had been taped off with hazard tape
- All cooker gas knobs turned off
- Knobs fitted to all cooker rail taps
- Griller rail tap knob not the same as the others, not Original Equipment Manufacturer (OEM)
- Griller rail tap has no control panel (back plate) with off/simmer/high indicators marked on it
- Installation of cooker compliant with installation standards
- Gas supply isolated at two 210kg LPG cylinders
- Gas pipework all copper, except flexi-hose to BBQ
- Heatlie BBQ installed at external BBQ area
- Wonder Fire Type 2 installed in front room

### Pressure test

- Performed test for soundness
  - Disconnected cylinders and checked isolation valves with the use of soapy water to ensure valves are not passing gas
  - Reconnected POL fitting to cylinders
  - Using test tee and water manometer, pressurised the whole installation with air to 4.14 kPa. Performed test for 10 minutes, pressure dropped to 3.86 kPa
    - Using spreadsheet, calculated an estimate pipe volume and knowing the pressure drop over time, it is estimated the drop equalled 0.047 ltr/hr (appendix A, figure 1)
  - Duplicated the pressure test with the cooker isolation valve turned off at 4.4 kPa, 10minutes, pressure dropped to 4.28 kPa
    - Using the same estimate pipe volume and knowing the pressure drop over time, it is estimated the drop equalled 0.02 ltr/hr (appendix A, figure 2)
  - Therefore, the gas escape at the cooker =  $0.047 - 0.02 = 0.027$  ltr/hr
  - Turned gas supply on and attempted to locate the small gas leak at the cooker with soapy water and a gas detector. Checked accessible connections within the oven, griller, top burners and under the cooker
    - The only reading picked up was by the gas detector at the joints between the rail taps and manifold at 50 ppm.

- Cooker Operation
  - Checked all rail taps for operation and found the positive latching functioning correctly on all except the oven knob.
    - The oven control does not have positive latching as it incorporates a flame safeguard thus meeting the standard.
  - Tested the operation of the cooker electronic ignitor (battery operated)
    - works for the griller and oven
    - does not work for the hotplate burners as electrodes and cabling damaged
  - Lit all hotplate burners with lighter supplied at the cottage
    - tested function of knobs for turning to simmer/high/off
    - all burner controls and flames performed correctly
  - Lit the griller burner with electronic ignitor
    - Checked operation of simmer/high/off
    - Burner control and flames performed correctly
  - Lit the oven burner with electronic ignitor
    - Allowed oven to heat and observed the correct level of bi-pass flame
    - Conducted door slam test on bi-pass flame, flame remained stable (did not extinguish)

## **LIKELY SENARIO**

The cooker and gas installation were examined by OTR Authorised Officers post incident. Whilst there was a small gas leak in the order of 47ml/hr in the entire service, this amount was insufficient to accumulate gas to the point that would account for the incident.

It was noted that a non-OEM griller knob had been fitted. This knob was not clearly marked to indicate On-Off, High-Low so there was a degree of ambiguity as to the position of the operating control.

It is likely that this ambiguity created uncertainty as to the operating control position. The occupants believed the control was off when in fact it was on and discharging unburnt gas.

When the gas odour was detected the controls were checked and a lit ignitor placed next to the burners to see if gas was present. LPG is a heavier than air gas that does not readily disperse in air. The griller is enclosed, so leaking gas was confined and accumulated to the point that a flame flash occurred when the lighter flame was placed next to the burner by [REDACTED]

The likely scenario is attributed to accidental operator error, due to operating control knob without adequate markings to indicate On-Off, High-Low burner operating position.

**DAMAGE TO PROPERTY**

Nil

**INJURIES TO PERSONS**

First degree burns to [REDACTED]

**STATEMENTS PROVIDED BY:**

[REDACTED]

[REDACTED]

**ACTION TAKEN BY OTR**

1. Attended site to investigate root cause of the incident, i.e. installation fault, materials, appliance, procedural or human error.

**FURTHER ACTION/FOLLOW UP NEEDED?**

It is recommended that the OEM instructions for operation and safe shutdown are placed in an obvious and accessible location for future users. These instructions should detail how to light each burner with and without power using the ignitor fitted to the cooker. Also provide the steps to be taken in the event of a gas leak, including turning off the gas supply at the cylinders and seeking professional assistance.



## **ATTACHMENTS**

Appendix A Excel spreadsheet of gas escape rates

Appendix B OTR - Photographs

Appendix C Gas service layout

Appendix D Emailed statement provided by [REDACTED]

Appendix E Emailed statement provided by [REDACTED]

Appendix F Invoice for cooker knob

**Note this report is presented in chronological order on the basis of information acquired. It may therefore change as new information comes to hand.**

[REDACTED]

### **Gas Installation and Appliance Inspectors**

**(Authorised Officer under the Gas Act SA 1997)**

Office of the Technical Regulator  
Department for Energy and Mining

T +61 (08) [REDACTED]

E [REDACTED]

GPO Box 320, Adelaide, SA 5001  
Street Level 8 ANZ Building, 11 Waymouth Street, Adelaide, SA 5000

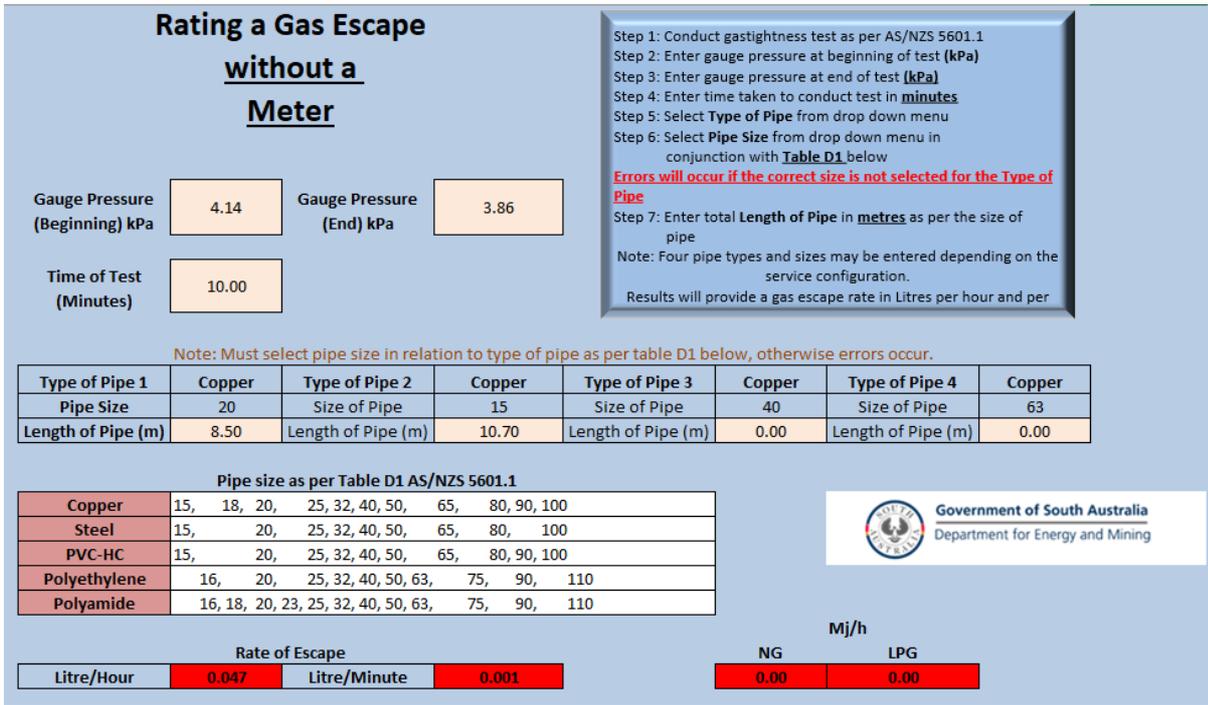
[www.sa.gov.au/otr](http://www.sa.gov.au/otr)

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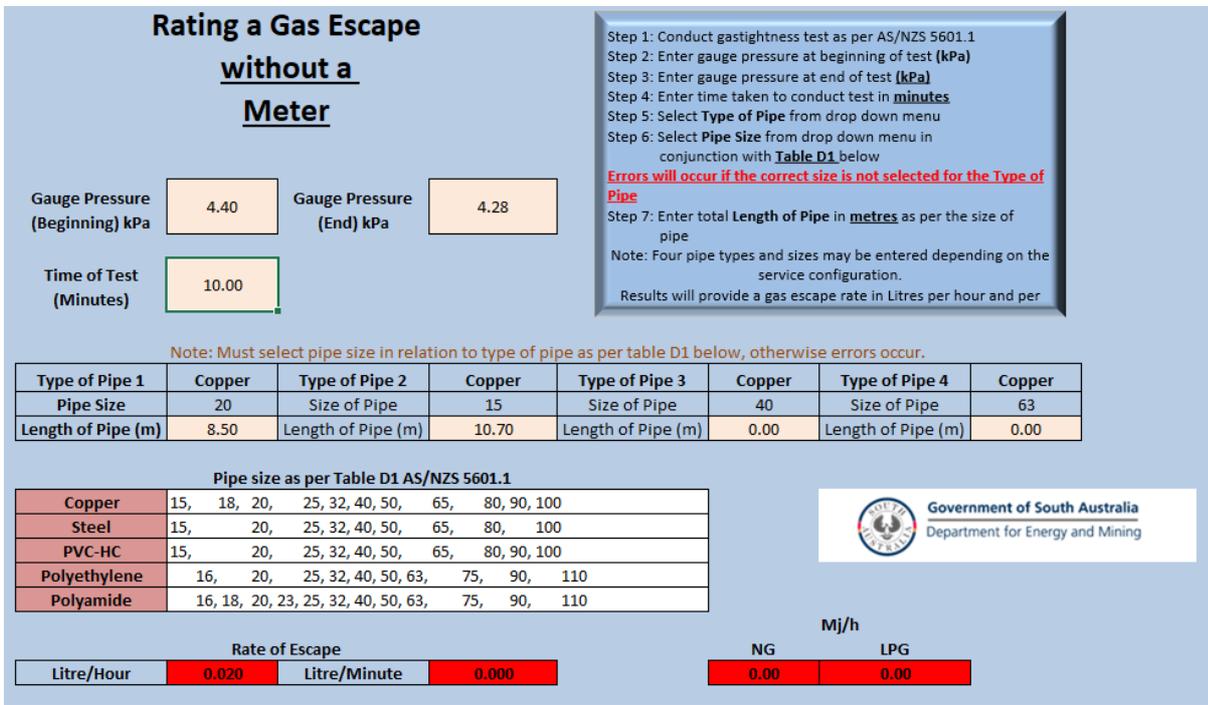


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## Appendix A



**Figure 1 Pressure test of complete service**



**Figure 2 Pressure test with cooker isolated**

Appendix B



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Griller knob

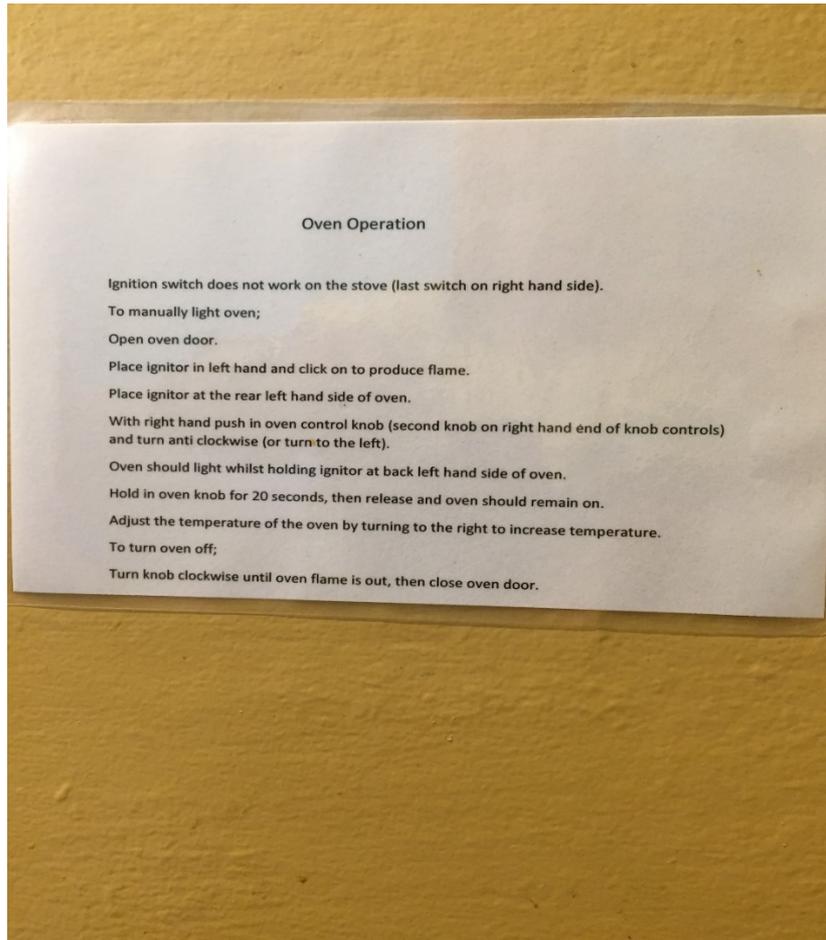
Control Panels



No Control Panel

Cooker Knobs





Oven lighting instructions

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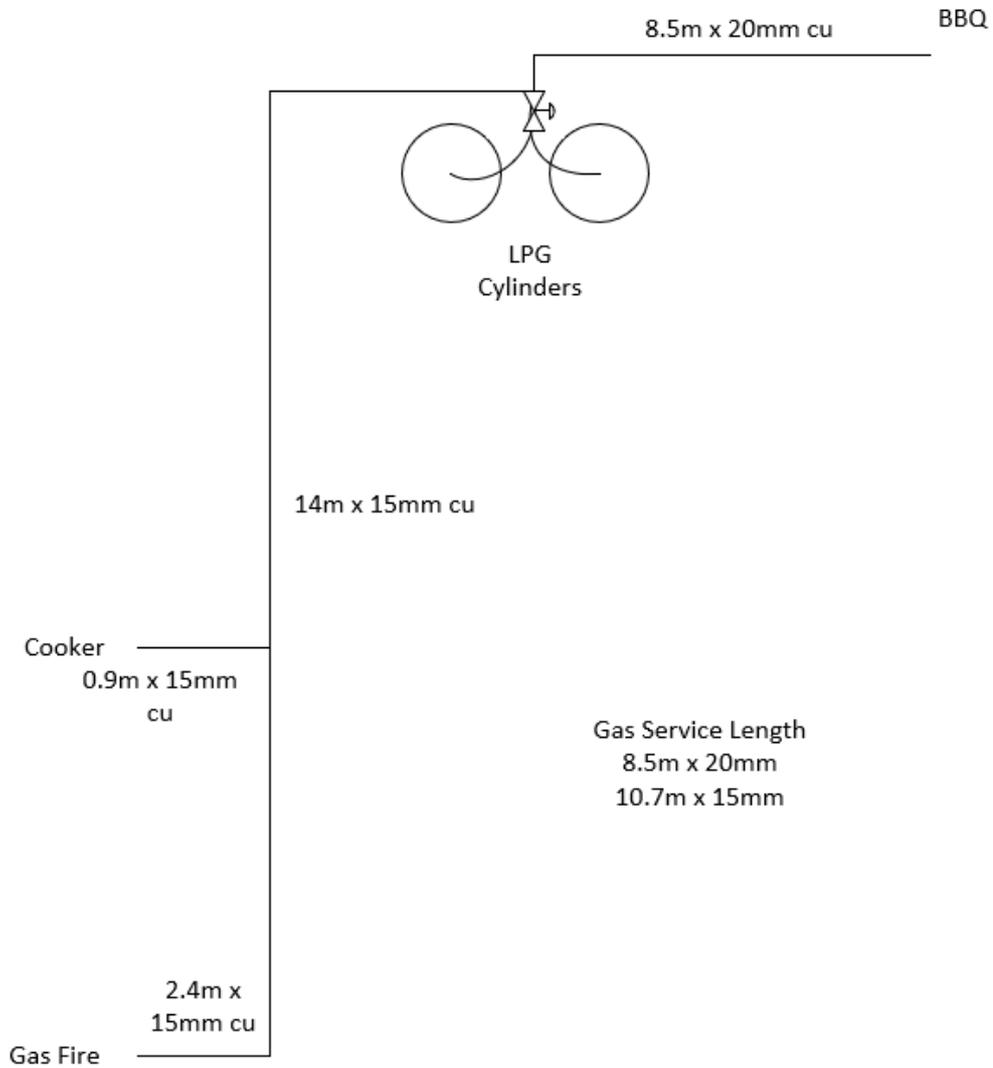
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Gas Cylinder Installation

Appendix C



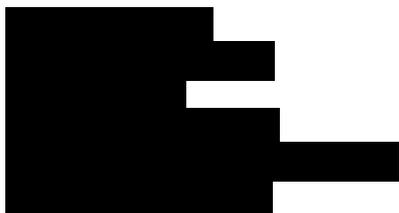
Approximate Dimensions

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## Appendix D



01 Dec 2018

### To Whom it may Concern

On Sunday the 25<sup>th</sup> of November 2018 at approximately 8pm I, together with 10 other members of my family, arrived at [REDACTED]. After entering [REDACTED] I stored my luggage and began the process of making dinner. I prepared bread rolls and buns in order to toast them for hamburgers. I went to the gas stove and noticed that there was a printed notice attached to the wall above and just to the right of the stove. The notice was headed, "Oven Operation" and stated that the "ignition switch does not work on the stove (last switch on right hand side)". The notice detailed further instructions about how to light the oven using the "ignitor". I observed at this time that the gas control knobs on the front of the stove were different. One knob (second from left) appeared to be a different colour to the others, was fatter and appeared to stick out further from the front of the stove than the others did. It was also shaped differently from the others. The 5 other control knobs had slightly pointed shaped protrusions or mouldings to indicate directionality whereas the knob second from left had no moulding indicating directionality. I could also not find any markings on the stove fascia that indicated an on/off position, however, there was a marking that I thought could have indicated that this knob turned the grill on. I turned the raised knob to the right and used the portable ignition device to light the grill. I toasted the buns and the rolls and then turned, what I believed to be the grill on/off knob, back to the left. I buttered the toasted buns and left them sitting on the table.

Following the written instructions on the wall, I then opened the oven door, turned the control knob relating to the oven to the right and used the portable ignition device to light the gas burners. I placed a ceramic dish containing a prepared curry meal into the oven and closed the door. I then prepared a salad and set the table for the meal. Approximately 15 mins later I went back to the oven to check and stir the curry. I noticed that there was not enough heat in the stove so I turned it up. I then closed the oven door and went away again. We all sat down and ate our burgers. After finishing my burger I went and opened the window that was located on the wall between the stove and the sink because I had noticed an increase in the ambient temperature. Approximately 15 minutes later I returned to the stove,

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removed the dish of curry and turned the oven off by turning the control knob and observing the flame go out. I then closed the door.

After finishing the meal and washing the dishes I asked everyone to leave the room so that we could clear and clean the table. My daughter [REDACTED] and I finished this task and she then stated that she thought she could smell gas. I could not smell gas. She walked over to the stove and looked at the knobs and observed that 5 of the 6 control knobs were all in the same position. She could not determine if the control knob second from the left was in the same position because it was a different looking knob that was protruding outwards unlike the others and there were no markings on the area of the stove behind this knob to indicate whether it was on or off. My son, [REDACTED], then walked into the room and told me that he was going to make his partner [REDACTED] a cup of tea. He filled the electric jug, turned it on and proceeded to place a tea bag into a cup. After completing this task [REDACTED] sat down at the table with his back to the door. [REDACTED] partner [REDACTED] then entered the room and stated that she could smell gas. [REDACTED] then went to the stove and attempted to turn the gas off but found that there were no adequate markings on the stove that would indicate exactly where the off position was. I then used the ignitor to check the burners on top of the stove (which I had just used to cook food). I then opened the grill door and used the ignitor to see if the grill would light (again, which I had just used to cook food). An explosion then occurred. A great ball of fire came out from the stove followed by a large ball of grey / white smoke. This covered my head, face, upper body and arms. I screamed and turned to my son and buried what felt like my burning face into his chest. I felt like my hair was on fire and [REDACTED] immediately tried to put the flames out by patting my head. I quickly moved to the taps in the kitchen and began splashing and running water over my head, face, upper body and arms. The next thing that I remember was being driven in the car by [REDACTED]. We arrived somewhere and I was given pain relief by someone I now know to be the 'first responder'. The next thing I remember was being spoken to by someone who I now know was probably a doctor. I was being loaded into a helicopter and tended to by a number of people in uniforms. The next thing I remember was landing at the hospital in Adelaide and being taken off the helicopter on a stretcher.

I have been discharged from hospital but I have received first degree burns to my face, upper body, arms and hands. I have lost a considerable amount of hair from the front part of my head. I have been off work since the incident.

In addition to my statement of fact I wish to make the following comments regarding this incident. The situation we were confronted with regarding the gas stove at [REDACTED] is extremely dangerous. Not only did the stove fail to meet adequate safety standards because it lacked adequate markings,

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there has also been an installation of a non-standard, non-directional on/off switch that looks very different to the other control switches. Added to this is the fact that the entire gas delivery system attached to the cottage could not be turned off because access to the on/off valves located on top of the external gas tanks was prevented by a locked 'security cage' which totally enclosed the gas tanks. If, as in this case, there can be no absolute surety about the status of the gas delivery system then if people go to sleep in the building while the gas is still on there could be a catastrophic outcome. One possible outcome could be the asphyxiation of everyone in the cottage or possibly an explosion caused by an uncontrolled build-up of gas in the cottage which had found its way to an ignition source such as a room heater or the wood stove. When these possibilities are considered together with the fact that there was no working emergency phone or other means of emergency contact, the situation can only be regarded as potentially life threatening and, therefore, totally unacceptable.

Yours sincerely

██████████

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## Appendix E

29/11/18

Hi all,

Please find the information requested, including my statement, below.

Cheers,

*Full contact details of the injured person including, Name, DOB, residential address and contact phone number*

[REDACTED]

*Details of other people involved*

[REDACTED]

*Details of any person that witnessed the incident*

[REDACTED]

*A full statement from yourself of the event. Please only concentrate on the facts (Who, when, what, why and how)*

Our group of 11 (9 adults and 2 children) arrived at [REDACTED] just before 8 pm on Sunday 25 November 2018, having booked both [REDACTED]. After unsuccessfully trying to access the key for [REDACTED] (as we had been given the wrong key code - we had been given the same code for both cottages) we successfully accessed [REDACTED]. Several members of the group prepared dinner using the gas cooker and wood stove (reheating pre prepared meals). I was not in the kitchen during the preparations as I was travelling back to Rocky River to use the pay phone to contact the KI NPSA duty officer. This was necessary as I had discovered that the emergency phone in [REDACTED] was out of order and mobile phone reception was not available.

Upon my return I ate dinner with the rest of the group in the kitchen of [REDACTED]. I was sitting about 2 m from the gas cooker (near the sink) and could not smell any gas during the meal. However, I did notice that one knob on the cooker was clearly not the original and was a replacement. It was quite

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different to the others, and had no marking to indicate whether it was on or off. This knob was for the grill of the cooker.

After the meal a few people began cleaning up ( [REDACTED] ). As part of this I helped return some of the items (crockery, etc.) we had borrowed from [REDACTED]. On one of these trips (around 10:25 pm) my wife [REDACTED] and her sister [REDACTED] and I were walking along the northern side of [REDACTED] when I heard a loud scream. [REDACTED] was behind me and had a better view of the [REDACTED] kitchen window and she said there had been an explosion and that she could see smoke. We immediately ran back to [REDACTED], I shouted a couple of times that there was a shower and cold water at the rear of the cottage. I found that [REDACTED] had been burned by an explosion of gas from the cooker. Her son ( [REDACTED] ) was already applying first aid in the form of running cold water on the affected areas. [REDACTED] (a registered nurse) assisted. As first aid was being applied [REDACTED] and I went to the gas bottles to ensure gas supply to the house was turned off. However the valves to shut off the gas bottles were behind a locked cage and we could not access them.

I then rushed to bring my car to the front of [REDACTED] in case we had to rush [REDACTED] to hospital. I informed [REDACTED] that it would take a long time to get medical help, especially as I would have to get back to [REDACTED] to call Triple Zero as the emergency phone in [REDACTED] was out of order. As soon as it became clear that medical attention was necessary I rushed in my car to Rocky River to call Triple Zero as soon as possible to raise the alarm. We decided that the others would meet me at Rocky River with [REDACTED] once they had made preparations for transport, namely getting an ice water bucket and flannels to apply cold water with.

I believe I arrived at Rocky River around 11 pm (Triple Zero records should confirm this). I called Triple Zero using the pay phone at Rocky River. After providing details of our location and the patient's condition, I confirmed that the ambulance being dispatched was coming from Kingscote. I asked if they wanted us to drive along South Coast Road to meet the ambulance (and hence reduce transit time to Kingscote Hospital) but I was instructed to stay at the Rocky River Visitor Centre and that medical evacuation by helicopter was being arranged. The operator had given me all relevant first aid instructions and asked me to call back as soon as [REDACTED] arrived at Rocky River.

I hung up and waited for [REDACTED] to arrive at Rocky River in [REDACTED] car. I immediately took [REDACTED] to the pay phone and called back Triple Zero so he could give the most recent information on [REDACTED] condition to them.

A first responder (I believe her name was [REDACTED] and [REDACTED] works for [REDACTED]) arrived before [REDACTED] finished speaking on the phone, so I directed her to the vehicle that [REDACTED] was in. [REDACTED] continued to provide first aid in the form of flannels soaked in cold water to assist with the pain. [REDACTED] was getting cold, so I provided the foil blanket from the first aid kit in my car to wrap around her body. The first responder was able to provide medication for pain relief.

Around an hour after my first call, the ambulance arrived, including [REDACTED] and another male ambulance officer whose name I did not get. They assisted [REDACTED] onto a stretcher and into the ambulance where they could more closely assess the injuries in better light and apply appropriate treatment.

Around 12:30 (unsure exactly) we were advised that a ground crew for the helicopter was not available. However, we had enough vehicles (our two, plus that of the first responder and the ambulance) to light



up the landing spot for the helicopter. We drove to a grassy spot opposite [REDACTED] and formed a V with our vehicle headlights. We were then advised that the helicopter pilot wanted to land at the intersection of South Coast Road and West End Highway. We drove there to find the helicopter had landed. The doctors attended to [REDACTED] and took off at about 1:30 am. A full crew had come so there was no room for a relative to accompany [REDACTED]

[REDACTED] and I returned to the Cottages. [REDACTED] her partner and children left at 5 am to get the earliest possible ferry back to Adelaide. I stayed with our two guests from England. We stayed in [REDACTED].

*Any other comments, observations that you believe are relevant to the event.*

None.

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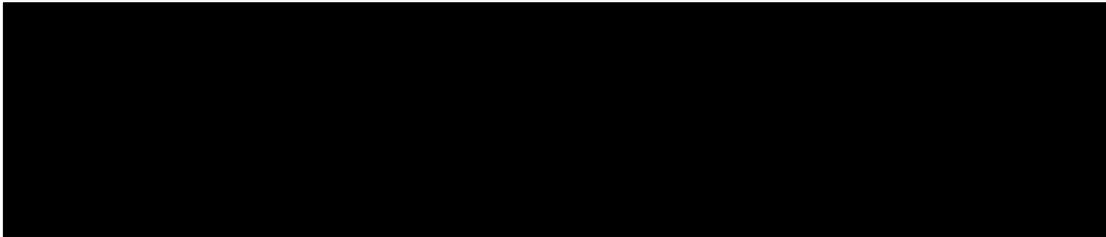


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## Appendix F



We make buying appliance spares and equipment easier

### Tax Invoice

Sold To:	Date: <b>10/04/18</b> Account No: Phone No: Page No: Tax Invoice
	Picking Slip: Your Reference: Delivery Instructions:

Part No	Description	Qty	Bin	Unit Price (incl)	GST	Total Inc GST
RL1081	UNIVERSAL STOVE/OVEN KNOB KIT-WHITE	6.0000	020609	9.95	5.43	\$59.70
TL500GM	500GM O/N FREIGHT AND HANDLING	1.0000		11.00	1.00	\$11.00

ALL GOODS REMAIN THE PROPERTY OF STATEWIDE APPLIANCE SPARES PTY LTD  
UNTIL FULL PAYMENT HAS BEEN RECEIVED FOR GOODS

<b>Totals</b>	<b>\$6.43</b>	<b>\$70.70</b>
---------------	---------------	----------------

- \* All circuit boards (PCB's) and electronic equipment are non returnable
- \* To claim a credit you must obtain a Return Authorisation Number from us within 7 days from receipt of goods
- \* Parts must then be returned and received by us within 10 days of an RA being authorised
- \* Unauthorised goods received will not be accepted and will be returned to customers at their expense
- \* A 20% re-stocking fee will apply to parts returned which are no longer required providing that they meet the above requirements and are in a saleable condition

Payment: **\$70.70**  
70.70 EFTPOS/Credit Card

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