

IN THE MATTER OF THE INQUIRIES ACT 2014**AND IN THE MATTER OF A BOARD OF INQUIRY
INTO THE MCCRAE LANDSLIDE****ENTITY: SOUTH EAST WATER
CORPORATION****WITNESS STATEMENT OF JULIAN TULLY**

I, **JULIAN TULLY**, Technical Director of Civil and Environmental Engineering, South East Water Corporation of 101 Wells Street, Frankston, in the State of Victoria say:

1. I have previously provided a Witness Statement to the Board of Inquiry on 6 June 2025 (my **First Statement**), and Amended Witness Statement on 19 June 2025, which incorporated updates to the First Statement (my **Amended Statement**).
2. I have made this second Witness Statement in response to a Request to Produce Third Witness Statement, which was served upon South East Water Corporation (**SEW**) by the Board of Inquiry on 17 July 2025 (**Request**). That Request required an SEW officer or employee to provide a statement in response to the questions set out in the Third List of Questions for South East Water Corporation (SEW).
3. The information in this Statement is based upon my personal knowledge, or information I have obtained from the business records of SEW or other employees where necessary. I believe the information to be true.

Question 1 – Was the pipe the subject of the ExcelPlas Report the same type of pipe to the McCrae Burst Water Main?

4. The approximately 450mm long section of pipe that was tested by ExcelPlas was obtained during the repair of a second leak on 7 March 2025. This second leak was approximately 9m towards Outlook Rd from the Bayview Rd leak (**McCrae Burst Water Main**), repaired on 31 December 2024. For ease of reference, I will refer to the second leak in this statement as the 7 March 2025 leak.
5. The 7 March 2025 leak was caused by a corroded metallic coupling joining the PVC pipe to a suspected horizontal bend. The PVC pipe section that was tested by ExcelPlas had not failed.
6. SEW's Geographic Information System (GIS) is used to store data on the location, construction date, size, material, length, distribution zone, and leak history since approximately 1993 of

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water mains. The GIS, also known by the name of the viewing software, GT Viewer, contains other information relating to water mains such as the location of valves, hydrants, property connections, pumps and tanks. The GIS data is the best available but is not always correct. Some of the reasons for incorrect data include: human error in transferring original paper drawings into electronic format, missing data, human error in recording as-constructed information and position error (location of pipe is recorded as 2m from a fence but that fence has not been constructed on the property boundary).

7. As an example of errors in GIS, the location and material of the water main on which the December 2024 burst occurred (McCrae burst water main) was investigated in May 2025. Using non-destructive digging several small holes were dug to visually confirm the location and material. The locations were recorded by a land surveyor and GIS was updated. The location of the water main was up to approximately 10m out, and a change in pipe material for a section from PVC to asbestos cement (AC) had not been recorded. **Annexure A** shows the changes. In Annexure A, the green lines represent the water main in the GIS before the changes. The blue lines represent the water main after the changes.
8. The testing undertaken by ExcelPlas confirmed the pipe section, from the water main the subject of the 7 March 2025 leak, is PVC. ExcelPlas state that for the purpose of its report it has assumed, without making a specific finding, that the pipe is U-PVC. Although the report doesn't specifically determine the type of PVC, in my experience it is almost certain to be unplasticised PVC (**U-PVC**) due to the white colour and GIS stated year of installation as 1963.
9. The December 2024 burst (McCrae burst water main) pipe material was also PVC, which is evidenced by photos of the pipe repair from Montage record 1295094. A copy of photos of the pipe, from that montage record, are extracted and marked **Annexure B** to this statement. In my view, it is almost certain that the pipe material was U-PVC due to the white colour and GIS stated year of installation as 1963.
10. There are three versions of Australian Standard K138 Rigid pressure pipe for pressure and non-pressure applications dated 1963, 1967 and 1969. This high number of revisions indicates the amount of development occurring for a new product. The 1967 and 1969 version's 'Preface' says this revision takes into account experience gained and advances made in manufacturing since the previous version.
11. Of the three versions, the dimensions in the 1969 version best match the dimensions measured by ExcelPlas. The wall thicknesses measured by ExcelPlas are within the range permitted in K138-1969 for class PD.
12. Class PD is specified within K138-1969 for maximum working pressure of 400 feet, which converts to 121m. This aligns with Class 12 which is nominated in AS1477.1-1988 as a maximum working pressure of 120m. In AS1477-1996 the Class terminology was replaced with

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PN (nominal pressure) terminology, although they effectively mean the same. In the GIS, this pipe is listed as Class 12. In short, we believe the GIS is accurate with respect to pipe type.

13. Australian Standard K138-1969 states the standard length of pipe is 20 feet, which is approximately 6m long.
14. It is almost certain that the pipe tested by Excelplas from the 7 March 2025 leak is U-PVC Class 12. It is almost certain the original PVC pipe at the two locations was installed at the same time, because reticulation water mains are usually installed hundreds of metres or more at a time for efficiency reasons.
15. It is likely that the pipe at the December 2024 burst (McCrae burst water main) is the same as the 7 March 2025 leak. I cannot rule out the possibility that during the installation process different pipes were mixed, potentially for trial purposes, but I have not found any evidence to suggest this is the case. There is also a possibility that the burst December 2024 pipe had previously burst prior to SEW records (starting circa 1993) and was repaired with a length of different pipe type, but again I have not found any evidence to suggest this is the case and no sample of the burst December 2024 pipe was retained.
16. Although the pipes are almost certainly both U-PVC, I am unable to confirm if the pipes are from the same manufacturer and/or same manufacturing batch. Although I consider it likely that they were from the same manufacturer by reason of their proximity, I cannot be certain. Even if they were from the same supplier I do not know whether they were from the same manufacturing batch and I do not know whether different batches are prone to the same defect as the one tested by ExcelPlas. No sample from the December 2024 burst was retained when it was repaired.

Question 2 – Are there other pipes within SEW's network in the suburb of McCrae that are the same type of pipe the subject of the ExcelPlas Report?

17. In McCrae there are water mains made from a variety of materials including PVC. More broadly, there are also different types of PVC pipe material, including U-PVC, O-PVC and M-PVC. U-PVC started being used in the 1960s in Australia. In the 1980s, orientated PVC (O-PVC) was introduced with a higher strength and impact resistance than U-PVC. In the 1990s, modified PVC (M-PVC) was introduced, which is similar to U-PVC but with a chemical additive to improve impact resistance. PVC pipes, complying with relevant Australian Standards for pressure pipes, are commonly installed today due to numerous benefits including compatibility with drinking water, durability, chemical resistance and economic installation.
18. A table of pipe data extracted from SEW's GIS in the suburb of McCrae is provided in **Annexure C**. Table 1 provides a summary of this data.

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Table 1 – Summary of Water main material and length in the McCrae suburb

Pipe Material	Length in McCrae suburb (km)
Asbestos Cement	19.8km
Mild Steel Cement Lined	4.3km
Reinforced Concrete	1.9km
Polyethylene	2.2km
Cast Iron Cement Lined	0.8km
Ductile Iron Cement Lined	0.1km
1950s and 1960s U-PVC Class 12	0.4km
1970s U-PVC Class 12	6.1km
1980s U-PVC Class 12	4.7km
1990-2003 U-PVC Class 12	0.5km
1999-2011 PVC Class 16	0.5km
M_PVC	0.8km

19. The pipe tested in the ExcelPlas report is in all likelihood a 1960s U-PVC Class 12, of which there is approximately 400m recorded within the suburb of McCrae.
20. Water pipes can fail for many reasons, including problems with installation, movement of soil, temperature, root damage, corrosion, manufacturing defects and accidental damage. Age alone is not determinative of failure. For example, the pipe examined by ExcelPlas had not failed in more than 60 years, despite having a manufacturing defect.

Question 3 – If yes to question 2, and noting the conclusion in the ExcelPlas Report that the pipe was predisposed to premature failure due to manufacturing defects, and that those defects make the recurrence of failure probable?

- a. **Is SEW concerned about those pipes failing due to the manufacturing defect identified? Please explain the answer given.**
- b. **What action, if any, is SEW considering or proposing to take in respect of its network in McCrae, as a result of the manufacturing defect identified in the ExcelPlas Report?**

21. The ExcelPlas report is of interest to SEW, and as a result of that report, SEW has commenced further actions as outlined below.
22. SEW is undertaking the collection of additional pipe samples from a range (diameter and construction date) of U-PVC Class 12 pipes in the vicinity of the defined McCrae Landslide Area (reflected in Exhibit 4 of Mr Forster-Knight's Witness Statement) to inform what further action is taken in accordance with SEW's asset management strategy. The samples have been

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taken from 23 Outlook Road and 14 Arthurs Avenue, and are proposed to be taken from 2 Waller Place and 24 Coburn Avenue. The first sample was obtained on 21 July 2025, with remaining samples expected to be collected by 30 July 2025. The samples will be tested by ExcelPlas, with results for all of the samples expected by approximately late August 2025.

23. I understand that Mr Christopher Smith, Network Performance Integrated Planning Manager at SEW has provided a witness statement to the Board of Inquiry in relation to SEW's asset management strategy. I am informed by Mr Smith that SEW is intending to renew a section of pipe that includes the December 2024 burst and March 2025 leak. The test results, once obtained, will also be provided to Mr Smith so that they can be considered in the context of SEW's asset management strategy to determine what if any action is taken.
24. SEW has a responsibility to its customers that is overseen by its regulator, the Essential Services Commission (**ESC**). The ESC's role is to promote the long-term interest of customers by having regard to the price, quality and reliability of essential services. To meet these expectations, SEW must operate prudently and efficiently, when delivering on its committed service standards. This includes undertaking programs such as water main renewals in an efficient and reasonable manner across its service area. Water main renewal is one of the highest cost risk control measures, indicatively \$1,000 – \$3,000 per metre for 100mm – 225mm diameter range, depending on location, material and construction technique.
25. The enhanced monitoring described by Mr Lloyd and Mr Forster-Knight in their Witness Statements will continue until we are confident the telemetry and digital metering are an appropriate risk control measure, e.g. in identifying leaks.

Dated: 24 July 2025

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