MEMORANDUM

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Company:	Mornington Peninsula Shire Council
Attention:	Emily Harkin
Our Ref:	PSM5665-052M
From:	Andrew Wilson
Date:	12 March 2025

RE: MCCRAE LANDSLIDE INCIDENT
DISPLACEMENT MONITORING UPDATE - 28 FEBRUARY 2025 TO 6 MARCH FEBRUARY 2025

1. Introduction

This memo provides a summary of displacement monitoring data collected between 00:00 AM 27 February and 11:59 PM 6 March 2025 (the Monitoring Period) at the McCrae Landslide Incident (the Site). Details of the monitoring systems and the monitoring procedure are to be provided in an Instrumentation and Monitoring Plan that is currently being drafted.

The plan location of monitoring points is shown in Figure 1.

Monitoring data and relevant plots of monitoring data are provided in Appendix A to Appendix G.

Monitoring memorandums issued to date are provided in Table 1.

Table 1 – Monitoring memorandums

Date Range	Document Reference	Comment
All monitoring to week ending 28 February 2025	PSM5665-050M (M1)	Issued 06/03/2025
28 February 2025 to 6 March 2025	PSM5665-052M (M2)	-

2. Monitoring System updates

During the Monitoring Period the following events related to the monitoring system occurred:

- GPS03 stopped transmitting data on 5 March 2025. Cellular reception in this area is poor. An upgrade of the antenna to mitigate poor reception is scheduled in the next one to two weeks.

3. Discussion

3.1 Displacement Monitoring

We note the following:

- Regarding GPS:
  - GPS01, GPS03 and GPS04 instruments show small amounts of movement (i.e. 5 mm to 10 mm), and GPS02 shows 23 mm of vertical and upwards movement, Appendix A to B.
  - For all instruments the amount of total movement fluctuates day-to-day. They have all now exceeded the stated error of the instruments (+/- 5 mm). The major component of the total movement is from changes in elevation. For all instruments the elevation measurements are

observed to have high day to day fluctuation. Elevation fluctuations of up to 33 mm movement have been measured between successive days.

  - The observed movement to date is inferred to be instrument noise. A general trend of displacement cannot be recognised and therefore measurements may not be reflective of actual ground movement.

- All survey prisms show less than 2 mm of displacement since the baseline survey commenced, Appendix C to E. This is within the accuracy of the survey instrument and no conclusions regarding trends can be made at this time.
- Regarding tilt sensors:
  - All tilt sensors continue to show a diurnal response, with a common pattern of changes in tilt occurring across the day. A change in tilt is inferred to be linked to changes in temperatures with strong changes in tilt occurring in response to changes in temperature.
  - The understanding of slope behaviour with respect to the magnitude of rotation continues to develop over time as the tilts are calibrated with prism measurements. Currently, the typical range of tilt measurements is between –0.05° and 0.05°, Appendix F.
  - The following tilt sensors are showing a trend of increasing rotation:
    - TS06
    - TS17.
  - TS06 was previously reported (refer PSM5665-050M) as showing higher than typical rotation as well as an increasing trend of rotation. This has continued with further increases in rotation. TS06 is located near the eastern flank of the 2022 Landslide in an area of softened and wet ground. This area is highlighted in Inset 1. TS17 is located approximately 5 m downslope of TS06, and has continued to increase in rotation. No survey prisms or GPS are located at TS06 or TS17, so the movement is not easily calibrated. The nearby TS08 (located approximately 5 m downslope from TS17) is also showing an increasing trend of rotation, albeit with small magnitudes. These three results indicate that there could be ground movement occurring in this location.
  - TS12, TS14, TS20 are all located in close proximity to the head scarp of the landslide in 10-12 View Point Rd. This area is highlighted in Inset 1. These instruments were previously reported (refer PSM5665-050M) as showing higher rotations relative to other tilt sensors as well as a trend of increasing rotation. In the current Monitoring Period they are still recording higher than typical rotations, however the trend of rotation has steadied or reversed.
    - TS12 and TS20 both show a trend of no significant change in rotation in the current Monitoring Period.
    - TS14 is attached to the steel upright of the retaining wall in 10-12 View Point Rd. The magnitude of rotation is relatively high. However, from the time of installation there has been no trend of increasing rotation with time. It is inferred that this pattern is reflective of the expansion/contraction movement of the larger structure, not instability in the retaining wall.
    - GPS instruments and survey prisms at these locations (GPS02, S3P12, S3P14) have little to no displacement recorded outside of the instrument accuracy. However, the tilt sensors are highly sensitive instruments and typically detect ground movements in advance of other less sensitive instruments (e.g. survey prisms, GPS). The movement recorded in the tilt sensors indicates that small ground movements previously reported may have slowed.
- Regarding Radar Monitoring:
  - Continued small amounts of movement over the Monitoring Period (less than 10 mm) were observed in Areas 3, 6, and 8, Appendix G. The movement mechanisms are not fully understood nor is the ground model refined at this time. The movements are localised and occurring in over steepened material. The movement may represent surficial ravelling or may represent early stages of regressive slumping or sliding.

– Note that “Area 8”, Appendix G, is located beneath Tilt Sensors TS12 and TS14. Similar to tilt sensors TS12 and TS14, the movement in “Area 8” is fluctuating. When the fluctuations are smoothed out by averaging, the trend is inferred to be slowing. This is supportive that regression in the landslide may be slowing.

Inset 1: Aerial image, with possible areas of movement highlighted as dashed white line

4. Next Monitoring Update

The next round of monitoring data collection and reporting is scheduled as follows:

- Next scheduled prism survey: 13 March 2025
- Next issue of monitoring report: 17 March 2025.

Should you have any queries related to this report please contact the undersigned.

Yours Sincerely

Personal Information **Personal Information**

ANDREW WILSON
ASSOCIATE GEOTECHNICAL ENGINEER

DANE POPE
PRINCIPAL

Enc:

Figure 1 – Instrumentation and Monitoring Plan

Appendix A – GPS monitoring summary

Appendix B – GPS monitoring plots

Appendix C – Survey data

Appendix D – Survey monitoring summary

Appendix E – Survey prism plots

Appendix F – Tilt sensor plots

Appendix G – Radar plots

LEGEND

- GNSS MONITORING POINT
- TILT SENSOR MONITORING POINT
- SURVEY PRISM MONITORING POINT
- SURVEY CONTROL POINT
- INDICATIVE TITLE BOUNDARIES

NOTES:

1. CO-ORDINATE SYSTEM: GDA2020 LOCAL, MGA ZONE 55
2. ELEVATION DATUM: DERIVED AHD (AUSGEOID2020)
3. TITLE BOUNDARIES SOURCED FROM VICMAP PROPERTY DATA SET DOWNLOADED DATA.VIC.GOV.AU

CONTROL POINT LOCATIONS

ID	EASTING	NORTHING	ELEVATION	TYPE
C01	319595.874	5753861.905	4.918	PRISM
C02	319627.019	5753860.621	5.123	PRISM
C03	319573.831	5753827.408	4.897	PRISM
C04	319534.083	5753802.569	4.941	PRISM
C05	319550.197	5753832.943	5.395	PRISM
C06	319347.239	5753713.073	4.746	PRISM

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MCCRAE LANDSLIDE INCIDENT
INSTRUMENTATION AND MONITORING

LAYOUT PLAN

PSM5665-052M | FIGURE 1

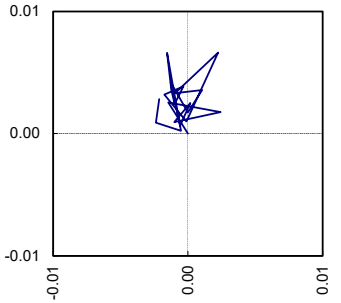
Appendix A
GPS monitoring summary

Table A1 – Summary of GPS monitoring results

Prism ID	Start Date	Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
		Easting	Northing	RL	Last Date	Δ Easting	Δ Northing	Δ RL	Magnitude	Plunge (°) (up is +)	Azimuth (°)	last 3 readings	last 7 readings	last 30 readings
GPS01	13-Feb-25	-9.699	38.335	-2.995	6-Mar-25	-0.002	0.003	0.006	0.007	60.3	323.0	2.1	-0.1	
GPS02	13-Feb-25	-21.621	20.245	-2.725	6-Mar-25	0.001	0.006	0.023	0.023	75.5	7.2	6.1	1.6	
GPS03	13-Feb-25	-41.863	21.761	-4.007	4-Mar-25	-0.002	0.001	-0.005	0.005	-67.0	290.8	-0.2	-0.2	
GPS04	13-Feb-25	-48.756	16.672	-4.334	6-Mar-25	0.000	0.003	0.004	0.005	52.5	355.0	-0.9	-0.2	

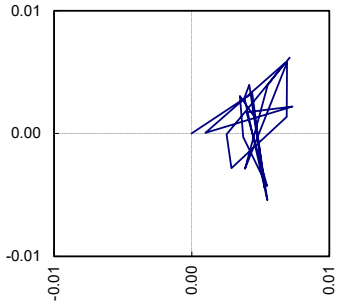
Notes:
(1) Co-ordinates provided are local co-ordinates relative to the base reference station installed at the Site. Co-ordinates are orientated to the GDA2020 grid.

Appendix B
GPS monitoring plots

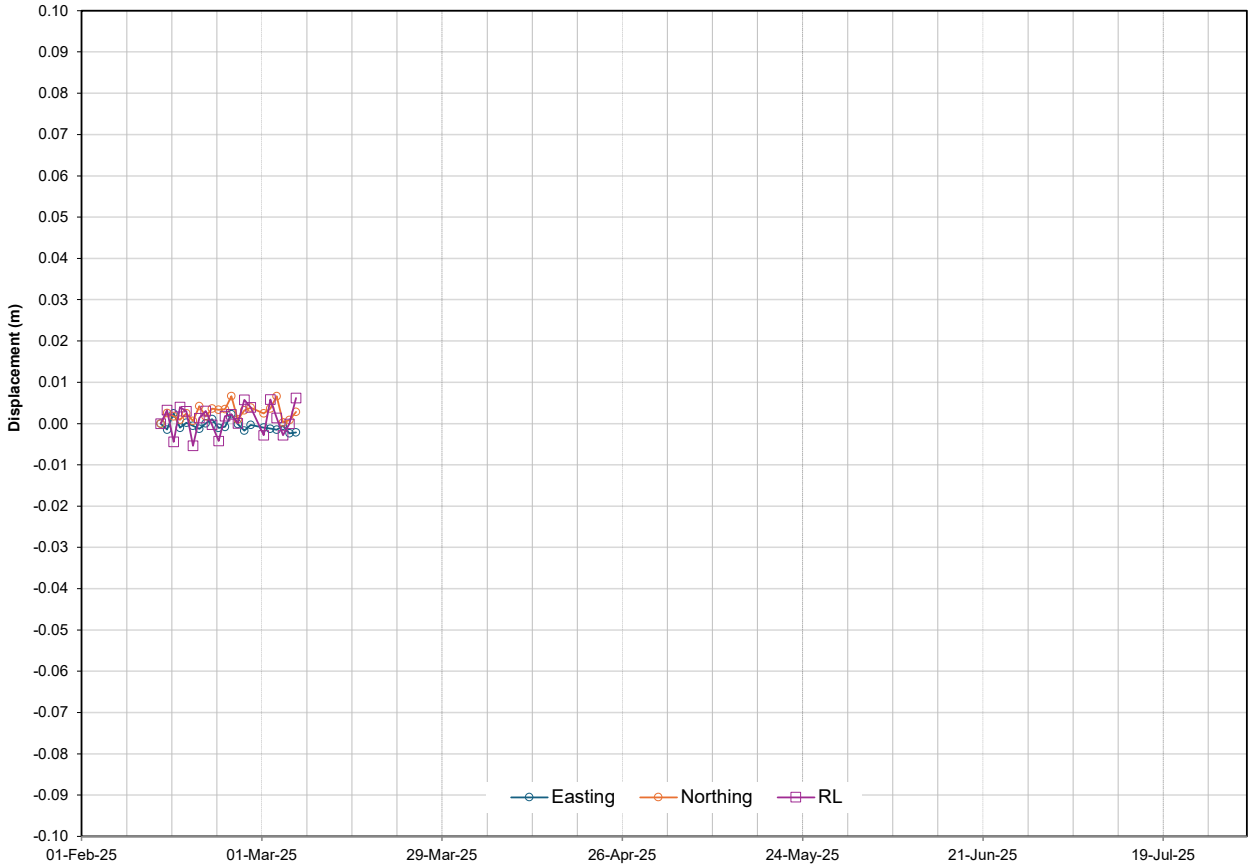


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



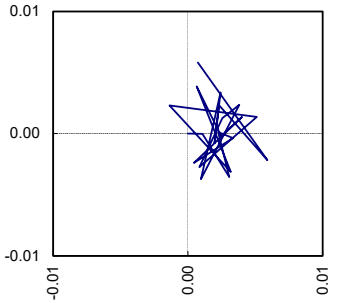
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
2.1	**-0.1**	

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 13/02/2025
LAST DATE: 6/03/2025

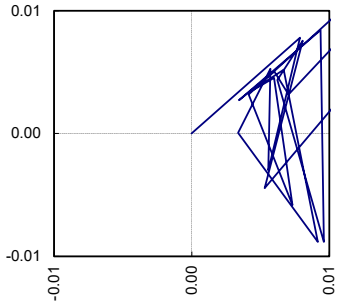
Analysed by: AW
Analysed on: 11/03/2025

INSTRUMENT ID: **GPS01**

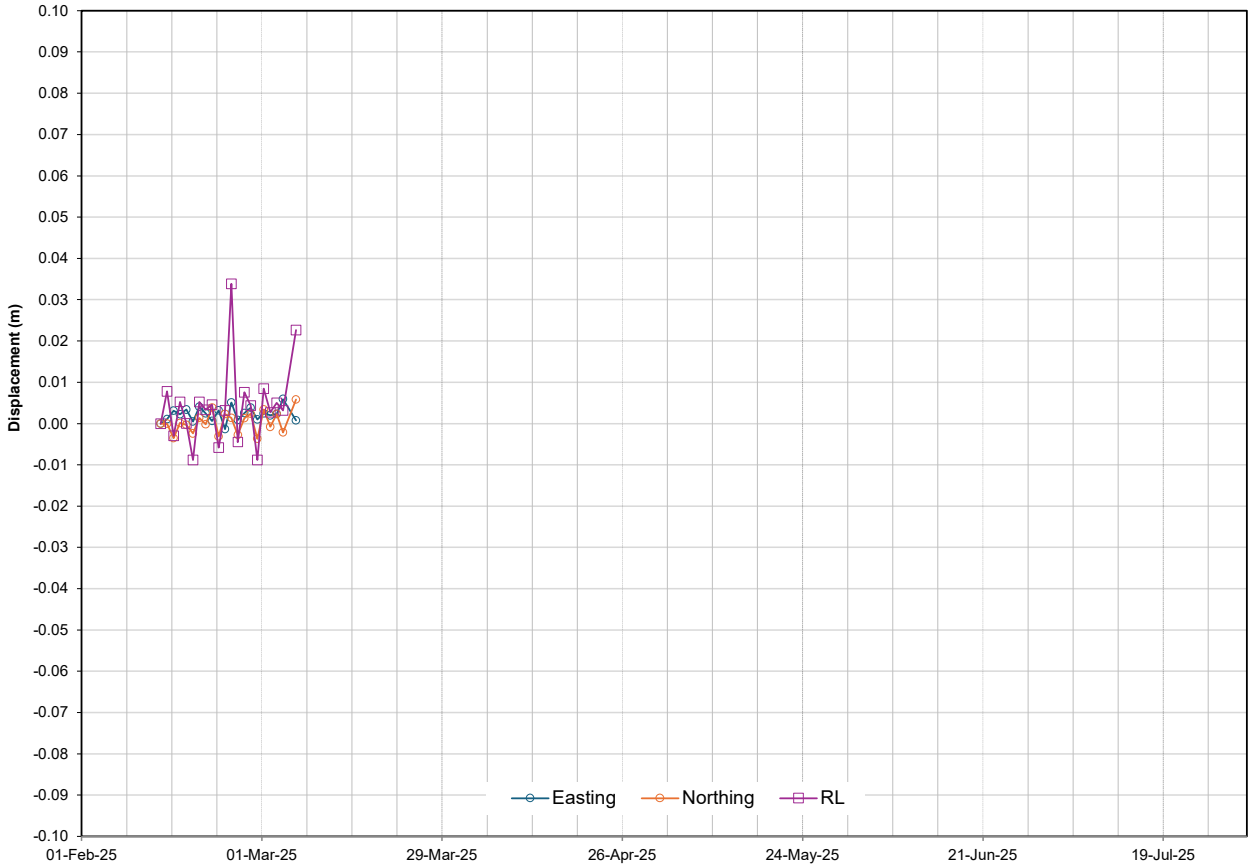


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



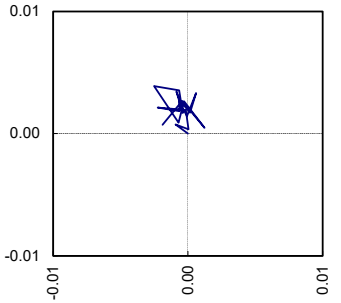
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
6.1	**1.6**	

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 13/02/2025
LAST DATE: 6/03/2025

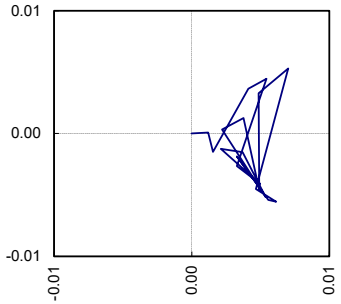
Analysed by: AW
Analysed on: 11/03/2025

INSTRUMENT ID: **GPS02**

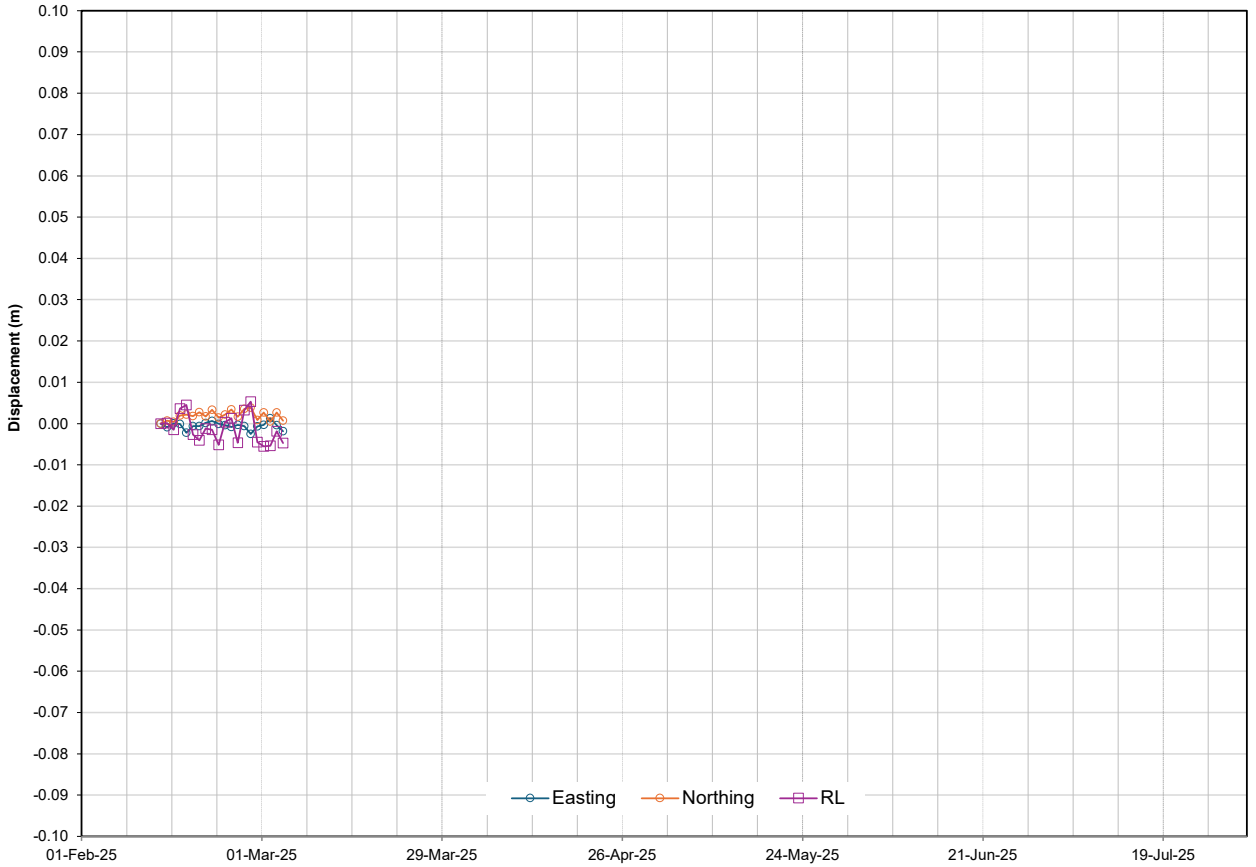


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



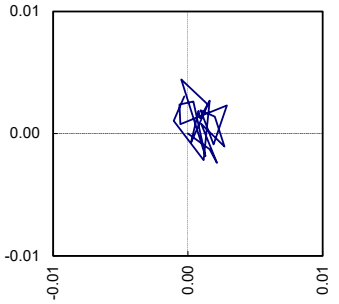
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.2	**-0.2**	

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

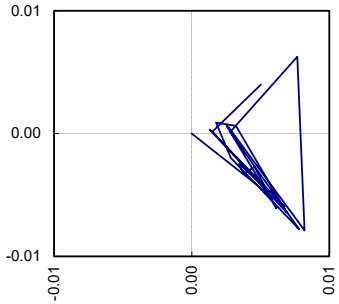
INITIAL DATE: 13/02/2025
LAST DATE: 4/03/2025

Analysed by: AW
Analysed on: 11/03/2025

INSTRUMENT ID: **GPS03**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector

Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.9	**-0.2**	

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 13/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

INSTRUMENT ID: **GPS04**

Appendix C
Survey prism measurements

Table C1 – Survey monitoring data

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S1P01	12/02/2025	319578.865	5753744.880	23.926
S1P01	20/02/2025	319578.866	5753744.882	23.926
S1P01	27/02/2025	319578.865	5753744.879	23.926
S1P01	6/03/2025	319578.865	5753744.879	23.926
S1P02	12/02/2025	319573.541	5753749.185	22.991
S1P02	20/02/2025	319573.543	5753749.187	22.990
S1P02	27/02/2025	319573.541	5753749.184	22.990
S1P02	6/03/2025	319573.542	5753749.184	22.990
S1P03	12/02/2025	319573.873	5753743.899	26.409
S1P03	20/02/2025	319573.875	5753743.900	26.409
S1P03	27/02/2025	319573.873	5753743.898	26.409
S1P03	6/03/2025	319573.873	5753743.898	26.409
S3P05	12/02/2025	319612.756	5753758.907	28.040
S3P05	20/02/2025	319612.755	5753758.907	28.040
S3P05	27/02/2025	319612.755	5753758.906	28.040
S3P05	6/03/2025	319612.756	5753758.906	28.040
S3P06	12/02/2025	319569.139	5753745.501	25.419
S3P06	20/02/2025	319569.138	5753745.501	25.420
S3P06	27/02/2025	319569.139	5753745.502	25.419
S3P06	6/03/2025	319569.139	5753745.501	25.420
S3P07	12/02/2025	319569.429	5753748.276	23.723
S3P07	20/02/2025	319569.428	5753748.277	23.723
S3P07	27/02/2025	319569.428	5753748.276	23.723
S3P07	6/03/2025	319569.428	5753748.276	23.723
S3P08	12/02/2025	319565.757	5753753.050	20.181
S3P08	20/02/2025	319565.755	5753753.050	20.181
S3P08	27/02/2025	319565.756	5753753.050	20.181
S3P08	6/03/2025	319565.756	5753753.050	20.181
S3P09	12/02/2025	319558.404	5753748.044	20.321
S3P09	20/02/2025	319558.403	5753748.045	20.321
S3P09	27/02/2025	319558.404	5753748.044	20.322
S3P09	6/03/2025	319558.404	5753748.043	20.322
S3P10	12/02/2025	319551.813	5753749.725	15.989
S3P10	20/02/2025	319551.812	5753749.725	15.989
S3P10	27/02/2025	319551.812	5753749.725	15.990
S3P10	6/03/2025	319551.812	5753749.724	15.990
S3P11	12/02/2025	319554.096	5753743.851	20.636
S3P11	20/02/2025	319554.095	5753743.851	20.636
S3P11	27/02/2025	319554.095	5753743.850	20.636
S3P11	6/03/2025	319554.096	5753743.850	20.636
S3P12	12/02/2025	319550.572	5753743.992	17.689
S3P12	20/02/2025	319550.571	5753743.992	17.689
S3P12	27/02/2025	319550.571	5753743.992	17.689
S3P12	6/03/2025	319550.572	5753743.992	17.689
S3P13	12/02/2025	319556.438	5753719.653	30.063

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S3P13	20/02/2025	319556.436	5753719.654	30.064
S3P13	27/02/2025	319556.436	5753719.653	30.063
S3P13	6/03/2025	319556.436	5753719.653	30.064
S3P14	12/02/2025	319553.897	5753718.704	30.233
S3P14	20/02/2025	319553.896	5753718.705	30.234
S3P14	27/02/2025	319553.896	5753718.705	30.234
S3P14	6/03/2025	319553.896	5753718.705	30.234
S3P15	12/02/2025	319550.979	5753723.316	26.793
S3P15	20/02/2025	319550.977	5753723.316	26.792
S3P15	27/02/2025	319550.978	5753723.316	26.793
S3P15	6/03/2025	319550.978	5753723.316	26.793
S3P16	12/02/2025	319553.059	5753713.284	34.077
S3P16	20/02/2025	319553.057	5753713.284	34.076
S3P16	27/02/2025	319553.058	5753713.284	34.077
S3P16	6/03/2025	319553.057	5753713.283	34.077
S3P17	12/02/2025	319545.480	5753722.252	28.079
S3P17	20/02/2025	319545.479	5753722.253	28.079
S3P17	27/02/2025	319545.479	5753722.253	28.080
S3P17	6/03/2025	319545.480	5753722.253	28.080
S3P18	12/02/2025	319537.244	5753739.894	15.611
S3P18	20/02/2025	319537.242	5753739.894	15.611
S3P18	27/02/2025	319537.243	5753739.894	15.611
S3P18	6/03/2025	319537.243	5753739.894	15.611
S4P19	12/02/2025	319535.799	5753733.932	20.813
S4P19	20/02/2025	319535.797	5753733.933	20.813
S4P19	27/02/2025	319535.797	5753733.933	20.813
S4P19	6/03/2025	319535.797	5753733.932	20.813
S4P20	12/02/2025	319511.865	5753727.513	13.595
S4P20	20/02/2025	319511.865	5753727.513	13.596
S4P20	27/02/2025	319511.865	5753727.513	13.595
S4P20	6/03/2025	319511.865	5753727.513	13.595
S4P21	12/02/2025	319513.882	5753723.875	16.356
S4P21	20/02/2025	319513.882	5753723.874	16.358
S4P21	27/02/2025	319513.882	5753723.874	16.357
S4P21	6/03/2025	319513.882	5753723.874	16.357
S4P22	12/02/2025	319516.370	5753719.111	20.014
S4P22	20/02/2025	319516.370	5753719.111	20.014
S4P22	27/02/2025	319516.370	5753719.110	20.014
S4P22	6/03/2025	319516.370	5753719.110	20.014
S4P23	12/02/2025	319518.496	5753715.939	24.367
S4P23	20/02/2025	319518.496	5753715.939	24.368
S4P23	27/02/2025	319518.496	5753715.939	24.368
S4P23	6/03/2025	319518.496	5753715.938	24.368
S4P24	12/02/2025	319519.446	5753711.080	28.188
S4P24	20/02/2025	319519.446	5753711.080	28.190
S4P24	27/02/2025	319519.446	5753711.080	28.189

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S4P24	6/03/2025	319519.446	5753711.080	28.189
S5P25	12/02/2025	319510.888	5753717.890	18.600
S5P25	20/02/2025	319510.888	5753717.889	18.602
S5P25	27/02/2025	319510.888	5753717.889	18.601
S5P25	6/03/2025	319510.888	5753717.889	18.601
S5P26	12/02/2025	319464.805	5753661.480	20.644
S5P26	20/02/2025	319464.804	5753661.480	20.645
S5P26	27/02/2025	319464.803	5753661.481	20.644
S5P26	6/03/2025	319464.803	5753661.480	20.644
S5P27	12/02/2025	319501.487	5753683.243	27.691
S5P27	20/02/2025	319501.485	5753683.243	27.691
S5P27	27/02/2025	319501.486	5753683.243	27.691
S5P27	6/03/2025	319501.488	5753683.244	27.691
S5P28	12/02/2025	319500.816	5753699.365	22.092
S5P28	20/02/2025	319500.816	5753699.365	22.093
S5P28	27/02/2025	319500.816	5753699.365	22.092
S5P28	6/03/2025	319500.817	5753699.365	22.093
S5P29	12/02/2025	319501.883	5753707.991	19.601
S5P29	20/02/2025	319501.883	5753707.991	19.602
S5P29	27/02/2025	319501.883	5753707.991	19.601
S5P29	6/03/2025	319501.883	5753707.991	19.602
S5P30	12/02/2025	319510.670	5753705.418	26.674
S5P30	20/02/2025	319510.669	5753705.419	26.675
S5P30	27/02/2025	319510.669	5753705.420	26.674
S5P30	6/03/2025	319510.669	5753705.419	26.675
S6P34	20/02/2025	319537.264	5753727.604	26.880
S6P34	27/02/2025	319537.264	5753727.604	26.881
S6P34	6/03/2025	319537.264	5753727.604	26.880
S6P35	20/02/2025	319537.264	5753727.604	26.881
S6P35	27/02/2025	319607.401	5753781.004	22.243
S6P35	6/03/2025	319607.400	5753781.003	22.243
S6P36	27/02/2025	319607.401	5753781.004	22.242
S6P36	6/03/2025	319607.402	5753781.002	22.242

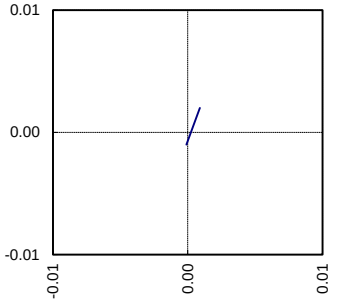
Appendix D
Survey prism monitoring summary

Table D1 – Survey monitoring summary

Prism ID	Start Date	Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
		Easting	Northing	RL	Last Date	Δ Easting	Δ Northing	Δ RL	Magnitude	Plunge (°) (up is +)	Azimuth (°)	last 3 readings	last 7 readings	last 30 readings
S1P01	12-Feb-25	319578.865	5753744.880	23.926	6-Mar-25	0.000	-0.001	0.000	0.001	-5.7	185.7	-0.1		
S1P02	12-Feb-25	319573.541	5753749.185	22.991	6-Mar-25	0.001	-0.001	-0.001	0.002	-27.5	138.0	-0.1		
S1P03	12-Feb-25	319573.873	5753743.899	26.409	6-Mar-25	0.000	-0.001	0.000	0.001	-16.0	196.7	-0.1		
S3P05	12-Feb-25	319569.139	5753745.501	25.419	6-Mar-25	0.000	0.000	0.001	0.001	83.7	270.0	0.0		
S3P06	12-Feb-25	319569.429	5753748.276	23.723	6-Mar-25	-0.001	0.000	0.000	0.001	-9.5	270.0	0.0		
S3P07	12-Feb-25	319565.757	5753753.050	20.181	6-Mar-25	-0.001	0.000	0.000	0.001	38.7	270.0	-0.1		
S3P08	12-Feb-25	319558.404	5753748.044	20.321	6-Mar-25	0.000	-0.001	0.001	0.001	29.1	158.2	0.0		
S3P09	12-Feb-25	319551.813	5753749.725	15.989	6-Mar-25	-0.001	-0.001	0.001	0.001	26.2	215.0	0.0		
S3P10	12-Feb-25	319554.096	5753743.851	20.636	6-Mar-25	0.000	-0.001	0.000	0.001	16.4	168.7	0.0		
S3P11	12-Feb-25	319550.572	5753743.992	17.689	6-Mar-25	0.000	0.000	0.000	0.001	78.7	270.0	0.0		
S3P12	12-Feb-25	319556.438	5753719.653	30.063	6-Mar-25	-0.002	0.000	0.001	0.002	38.7	270.0	0.0		
S3P13	12-Feb-25	319553.897	5753718.704	30.233	6-Mar-25	-0.001	0.001	0.001	0.002	26.3	315.0	0.0		
S3P14	12-Feb-25	319550.979	5753723.316	26.793	6-Mar-25	-0.001	0.000	0.000	0.001	26.6	270.0	-0.1		
S3P15	12-Feb-25	319553.059	5753713.284	34.077	6-Mar-25	-0.002	-0.001	0.000	0.002	8.6	239.5	0.0		
S3P16	12-Feb-25	319545.480	5753722.252	28.079	6-Mar-25	0.000	0.001	0.001	0.001	45.0	0.0	0.0		
S3P17	12-Feb-25	319537.244	5753739.894	15.611	6-Mar-25	0.000	0.000	0.000	0.001	38.7	270.0	-0.1		
S3P18	12-Feb-25	319535.799	5753733.932	20.813	6-Mar-25	-0.002	0.000	0.000	0.002	14.7	270.0	0.0		
S4P19	12-Feb-25	319511.865	5753727.513	13.595	6-Mar-25	0.000	0.000	0.000	0.000	71.6	270.0	-0.1		
S4P20	12-Feb-25	319513.882	5753723.875	16.356	6-Mar-25	0.000	-0.001	0.001	0.001	29.9	196.7	-0.1		
S4P21	12-Feb-25	319516.370	5753719.111	20.014	6-Mar-25	0.000	-0.001	0.000	0.001	25.6	196.7	0.0		
S4P22	12-Feb-25	319518.496	5753715.939	24.367	6-Mar-25	0.000	-0.001	0.001	0.001	41.4	191.3	0.0		

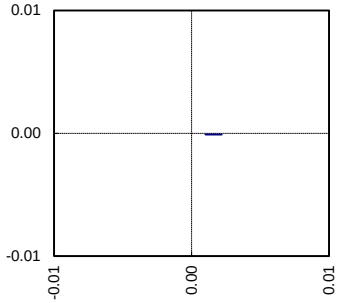
		Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
S4P23	12-Feb-25	319519.446	5753711.080	28.188	6-Mar-25	0.000	0.000	0.001	0.001	90.0	0.0	-0.1		
S4P24	12-Feb-25	319510.888	5753717.890	18.600	6-Mar-25	0.000	-0.001	0.001	0.001	42.0	180.0	-0.1		
S5P25	12-Feb-25	319464.805	5753661.480	20.644	6-Mar-25	-0.002	0.000	0.000	0.002	14.9	270.0	0.0		
S5P26	12-Feb-25	319501.487	5753683.243	27.691	6-Mar-25	0.002	0.001	0.000	0.002	15.5	56.3	0.0		
S5P27	12-Feb-25	319500.816	5753699.365	22.092	6-Mar-25	0.001	0.000	0.001	0.002	58.4	90.0	0.0		
S5P28	12-Feb-25	319501.883	5753707.991	19.601	6-Mar-25	0.000	0.000	0.001	0.001	90.0	0.0	0.0		
S5P29	12-Feb-25	319510.670	5753705.418	26.674	6-Mar-25	-0.001	0.001	0.001	0.002	48.1	329.0	0.0		
S5P30	12-Feb-25	319537.264	5753727.604	26.880	6-Mar-25	0.000	0.000	0.001	0.001	85.2	270.0	0.0		
S6P34	20-Feb-25	319458.812	5753656.785	19.662	6-Mar-25	0.000	0.001	0.001	0.001	39.9	21.8	0.1		
S6P35	20-Feb-25	319457.955	5753658.070	18.866	6-Mar-25	0.002	0.000	0.000	0.002	-7.1	90.0	0.1		
S6P36	27-Feb-25	319460.138	5753656.446	25.933	6-Mar-25	0.000	0.001	0.001	0.002	52.3	354.3			

Appendix E
Survey prism monitoring plots

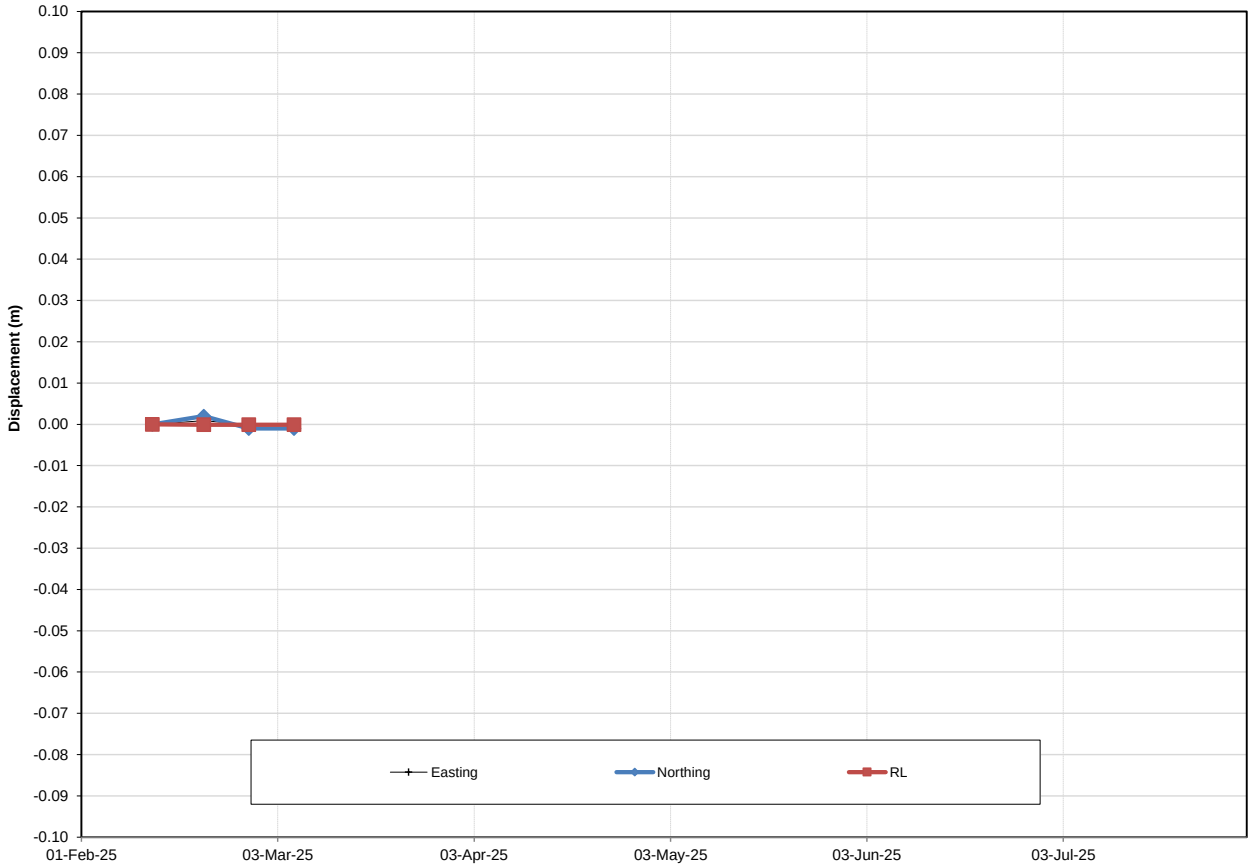


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



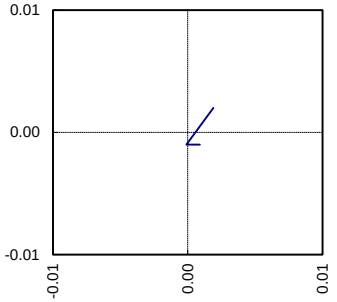
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

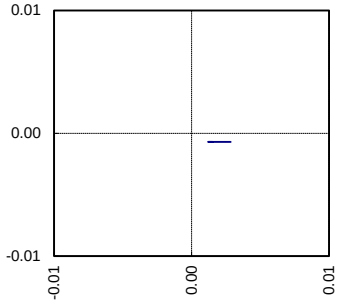
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S1P01**

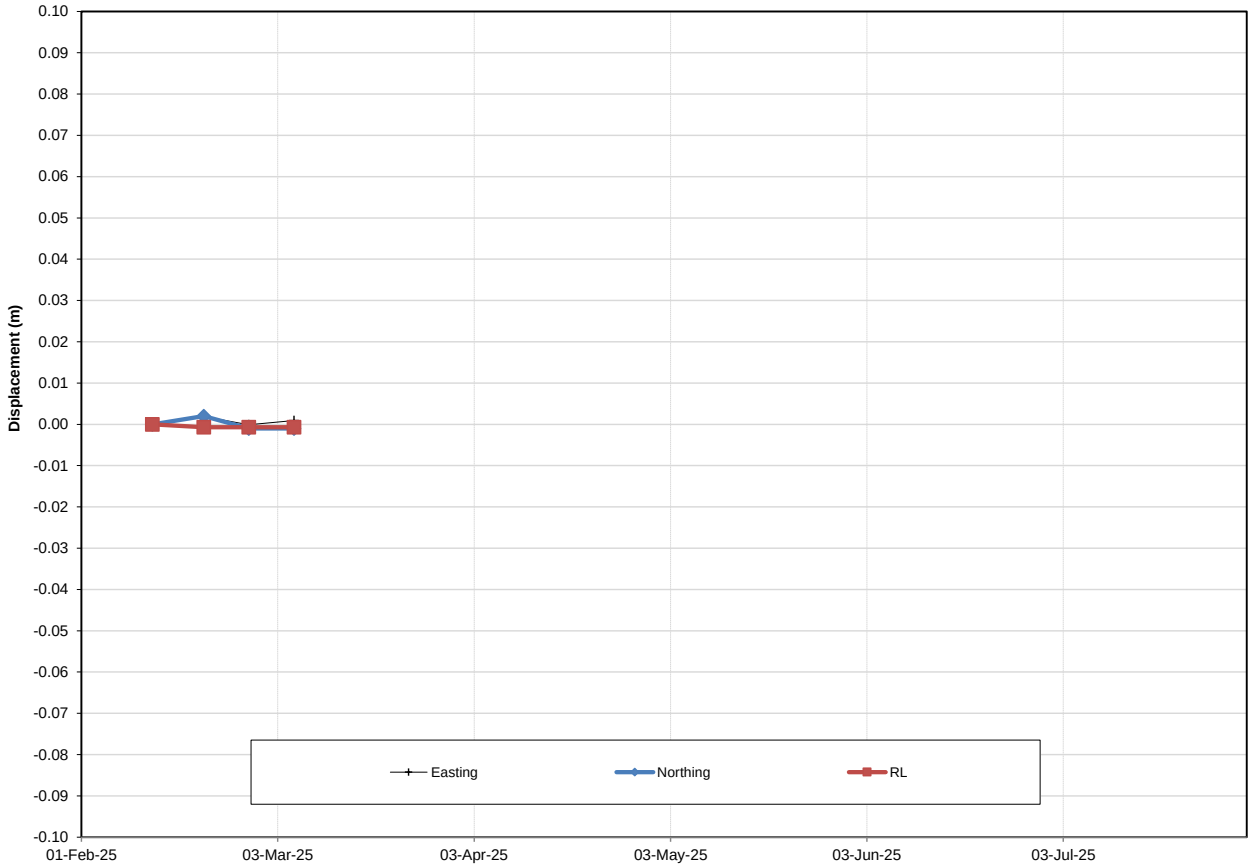


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



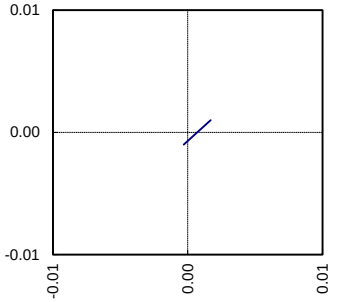
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

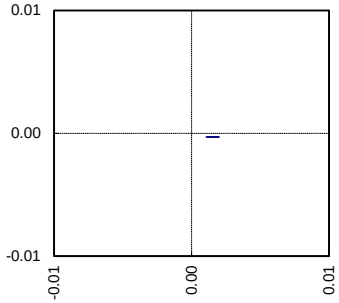
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S1P02**

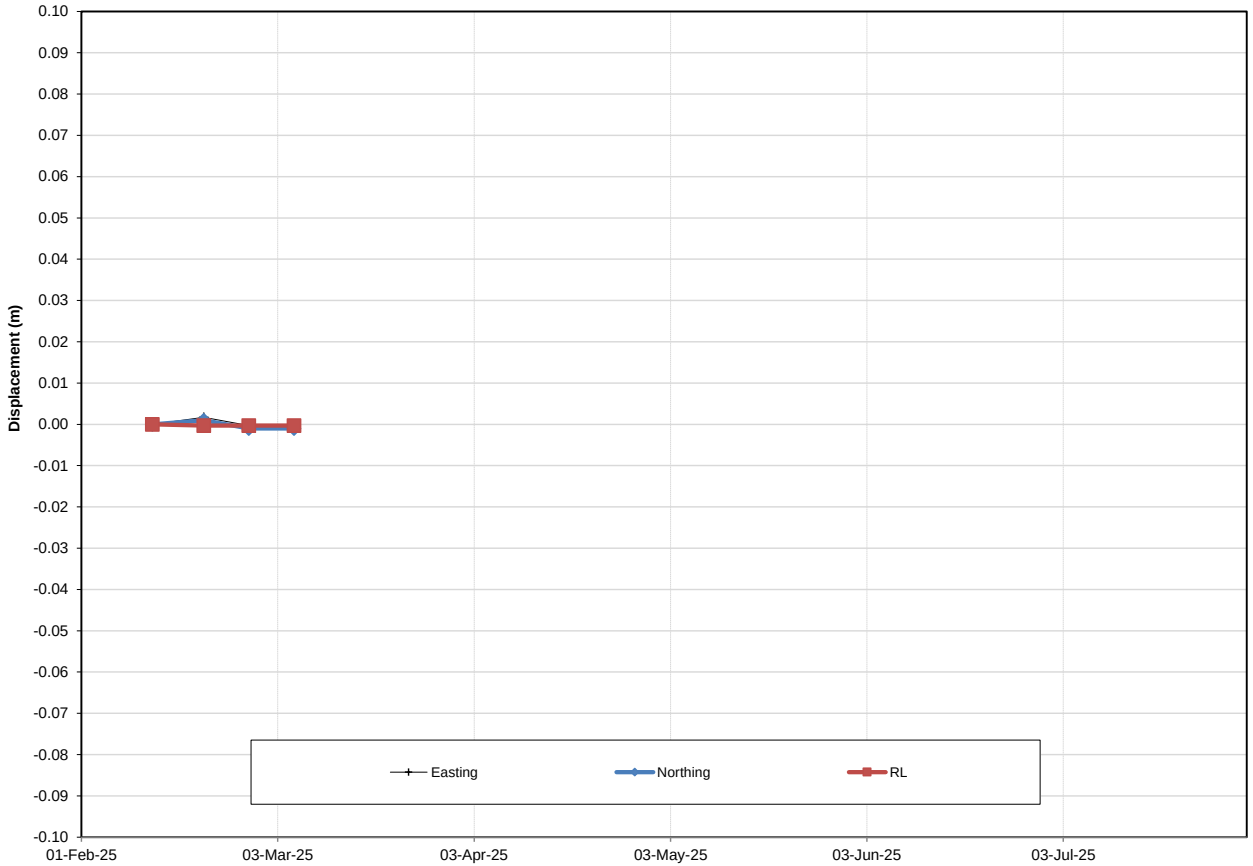


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



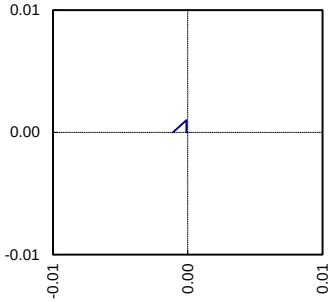
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

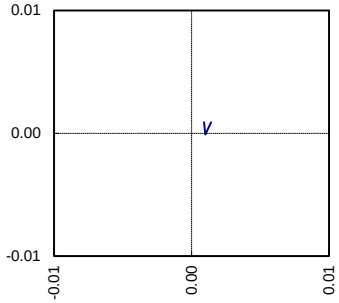
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S1P03**

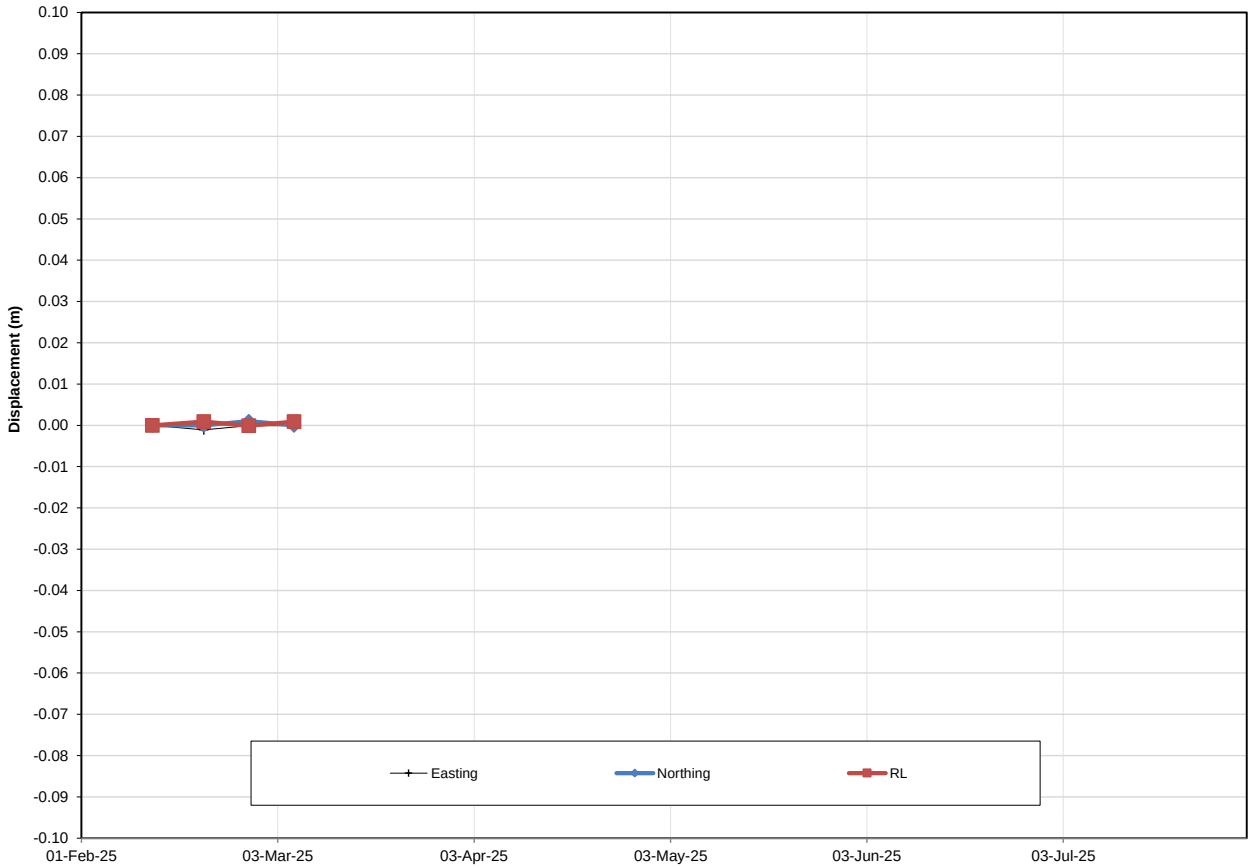


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



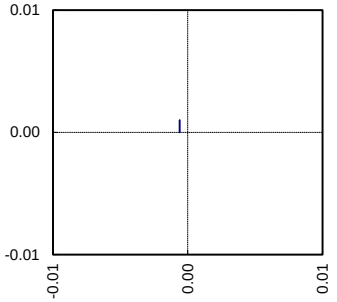
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

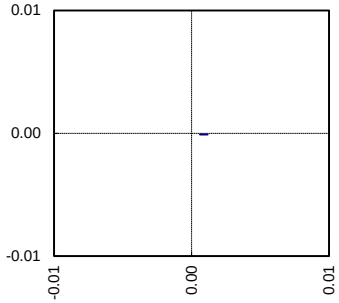
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P05**

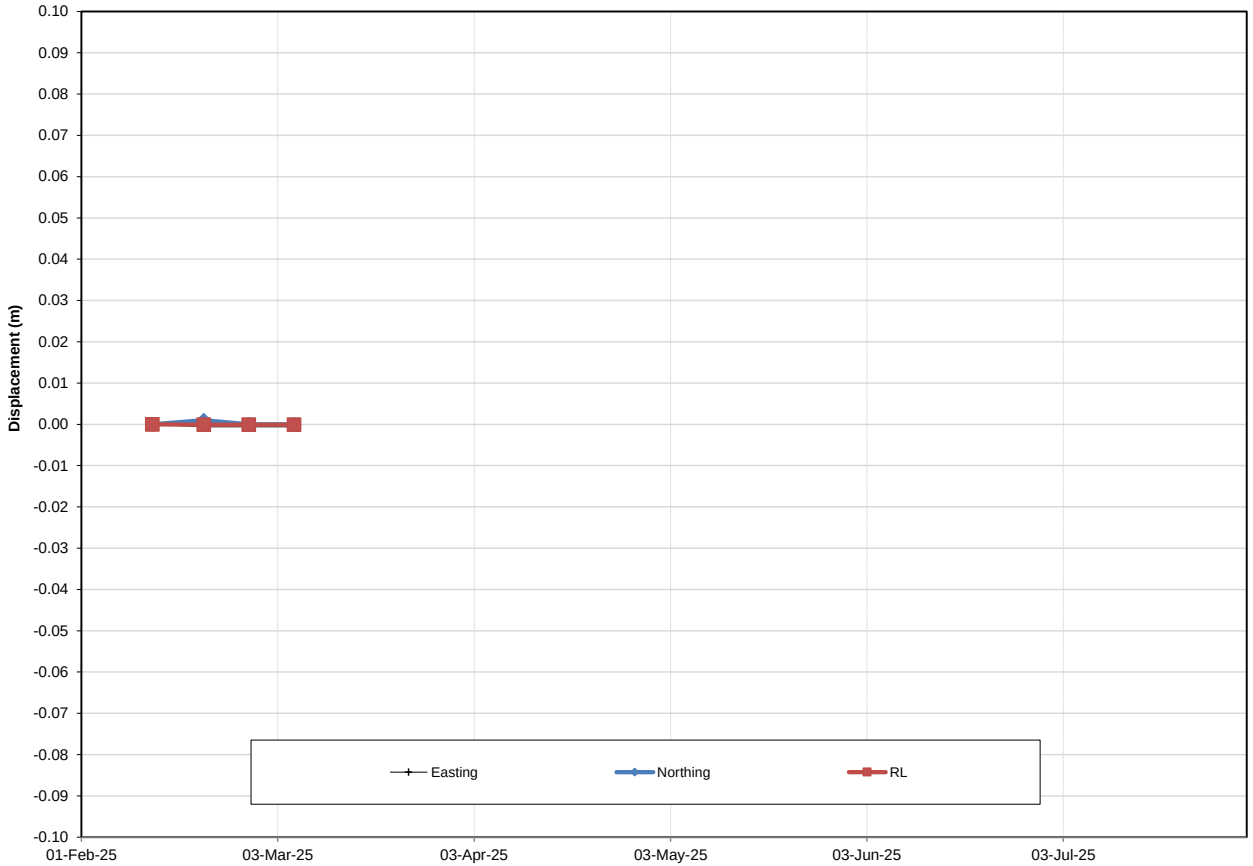


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



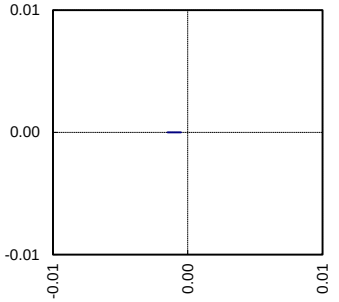
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

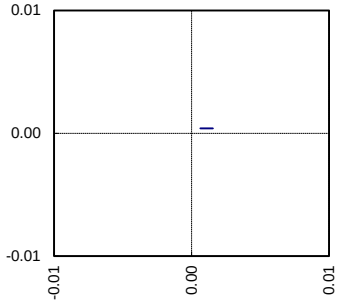
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P06**

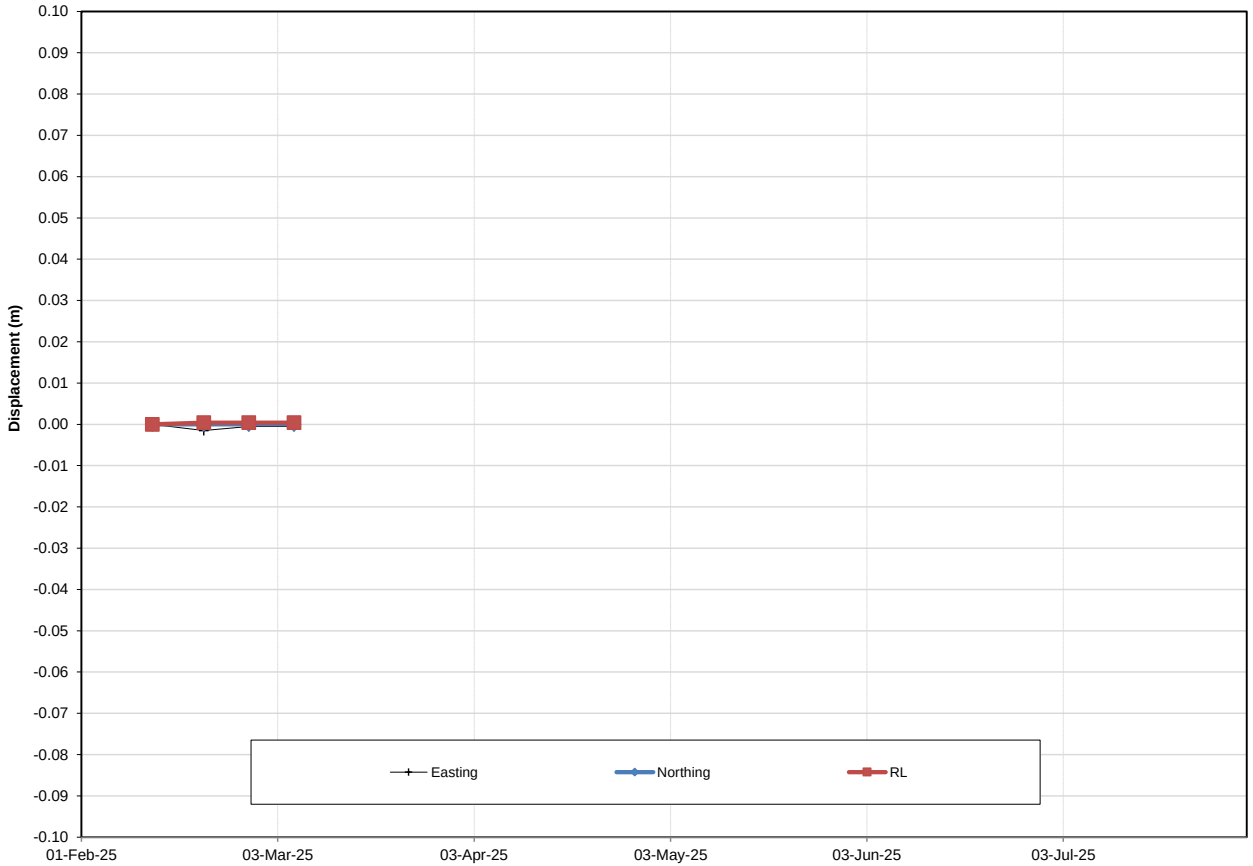


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



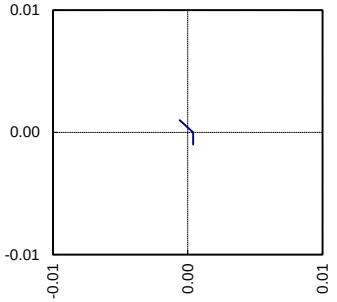
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

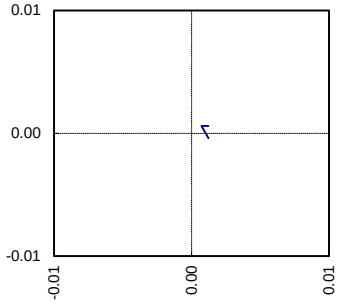
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P07**

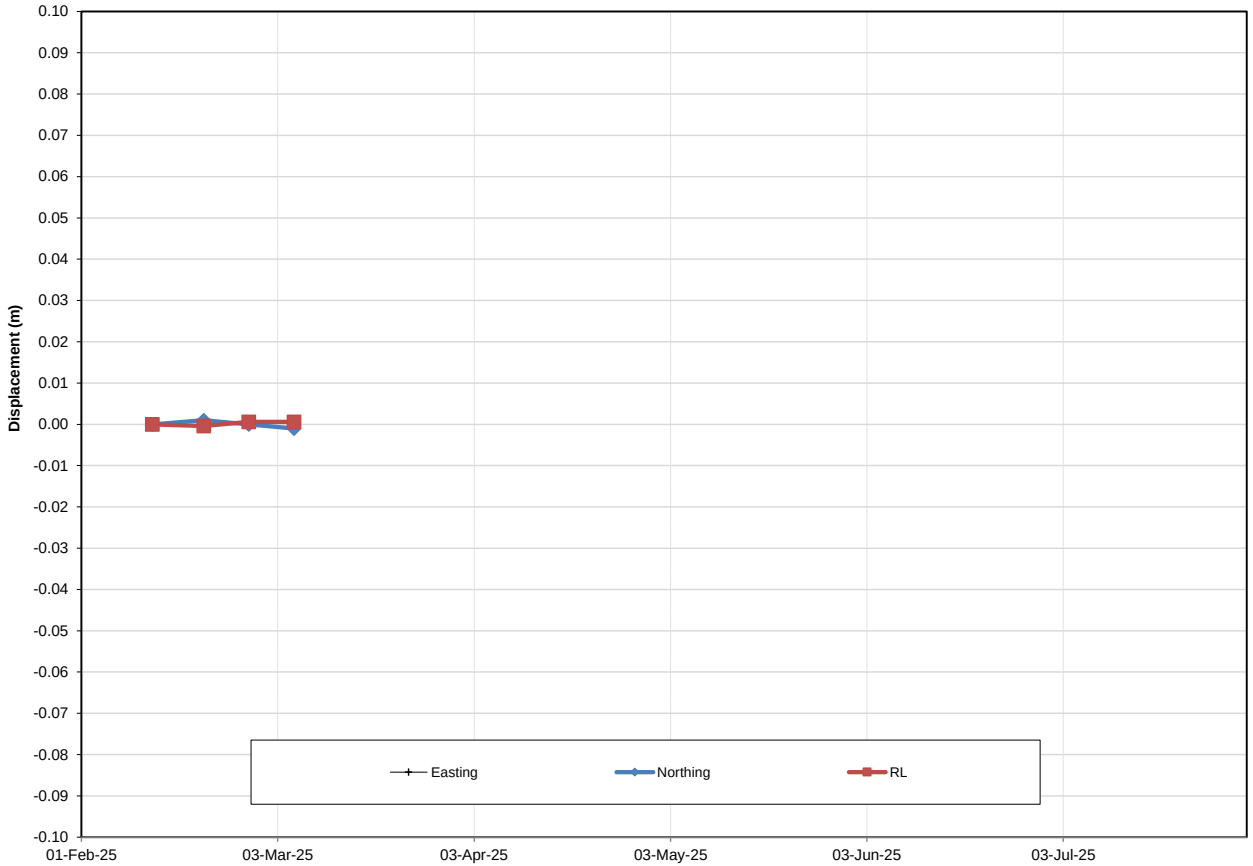


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



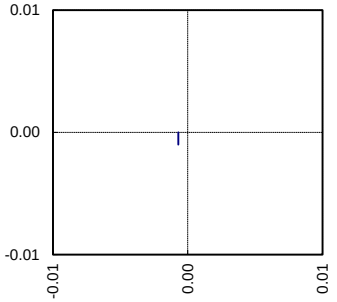
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

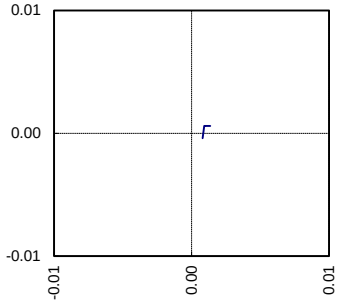
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P08**

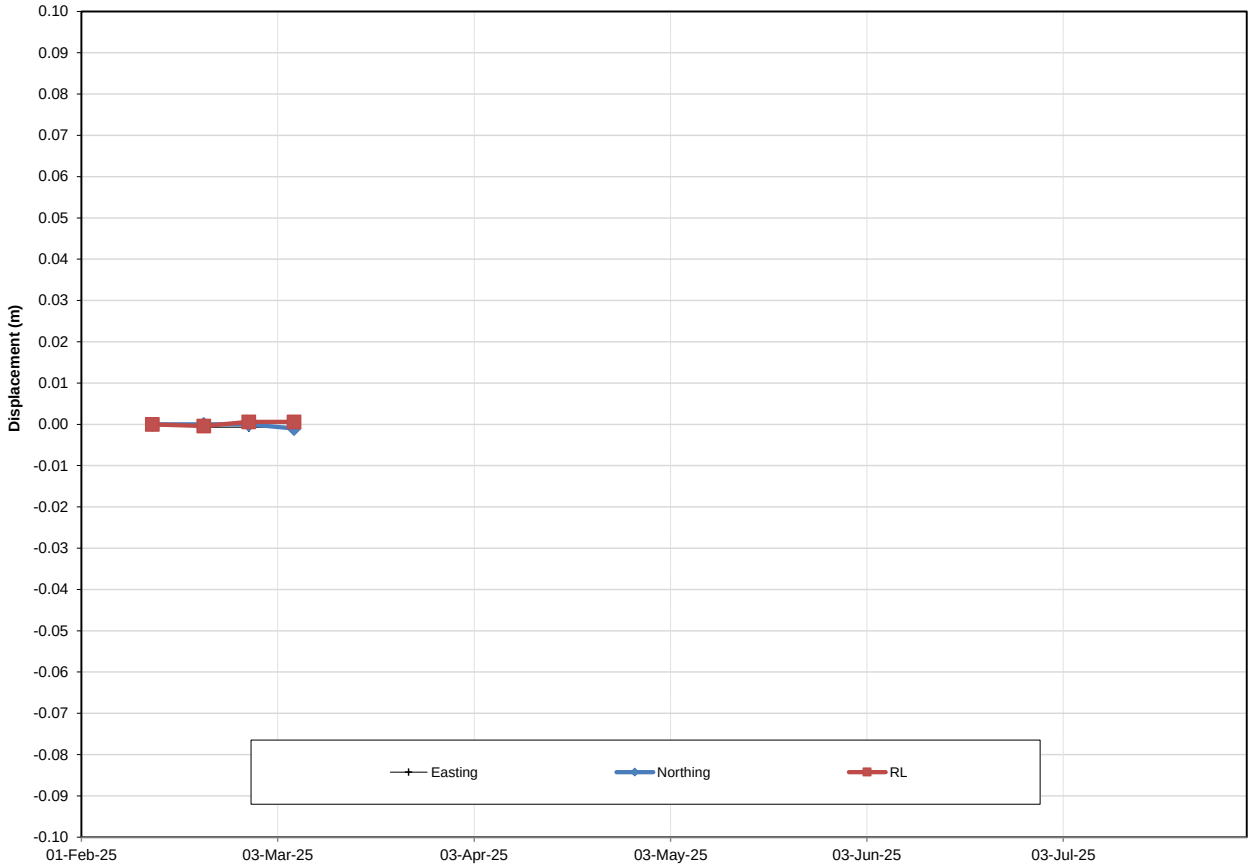


N

PLAN PLOT
mN vs mE

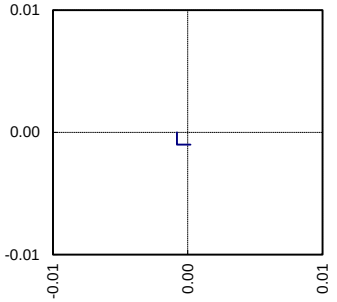


SECTION PLOT
RL vs Movement Vector



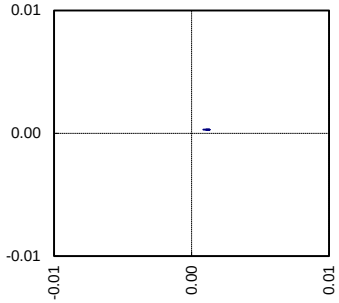
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number:	PSM5665		
COMPANY:	Mornington Peninsula Shire Council	Analysed by:	AW
SITE:	McCrae	Analysed on:	11/03/2025
PROJECT :	McCrae Landslide Incident Monitoring		
INITIAL DATE:	20/02/2025	PRISM ID:	**S3P09**
LAST DATE:	6/03/2025		

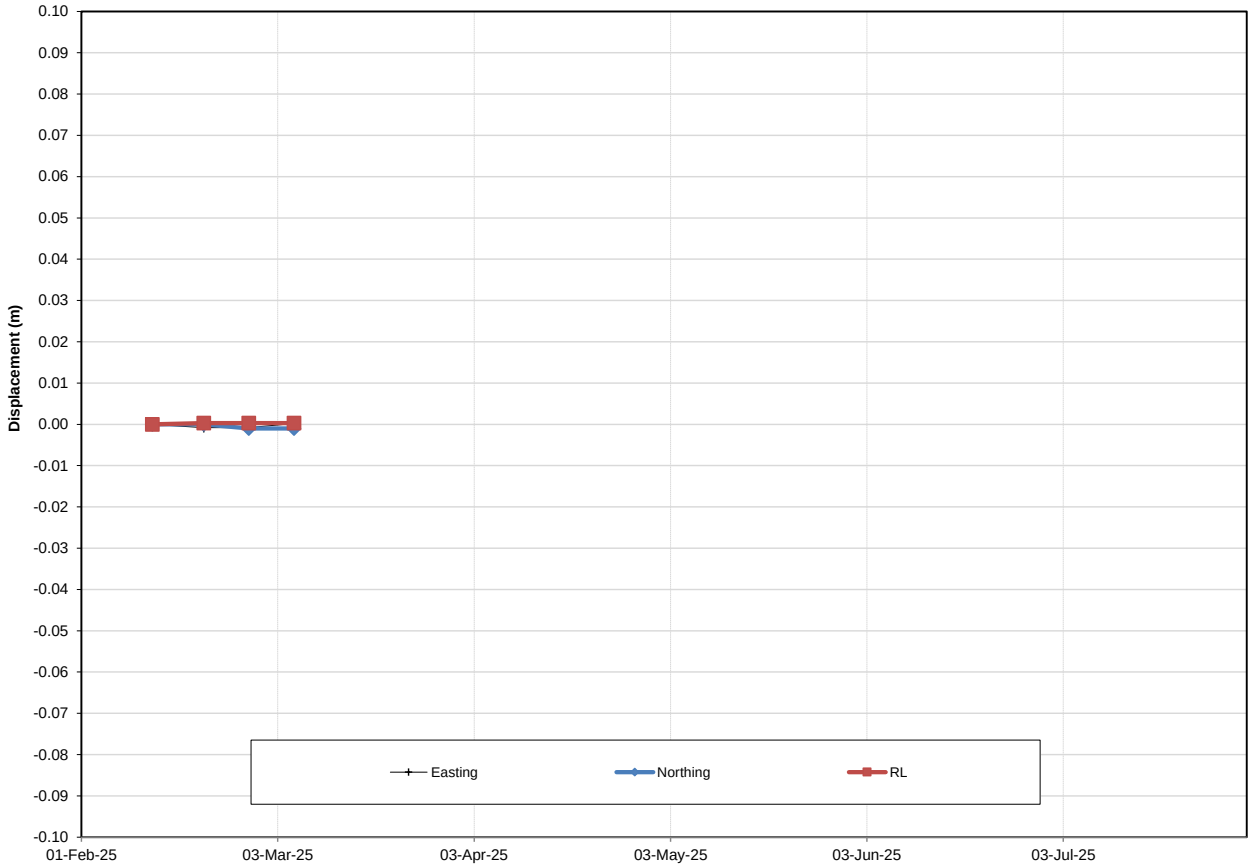


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



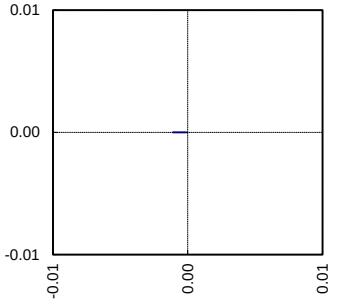
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

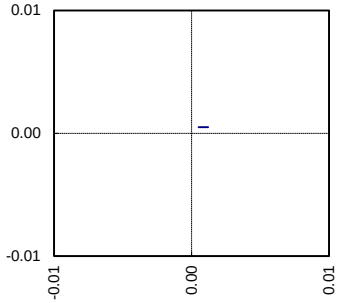
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

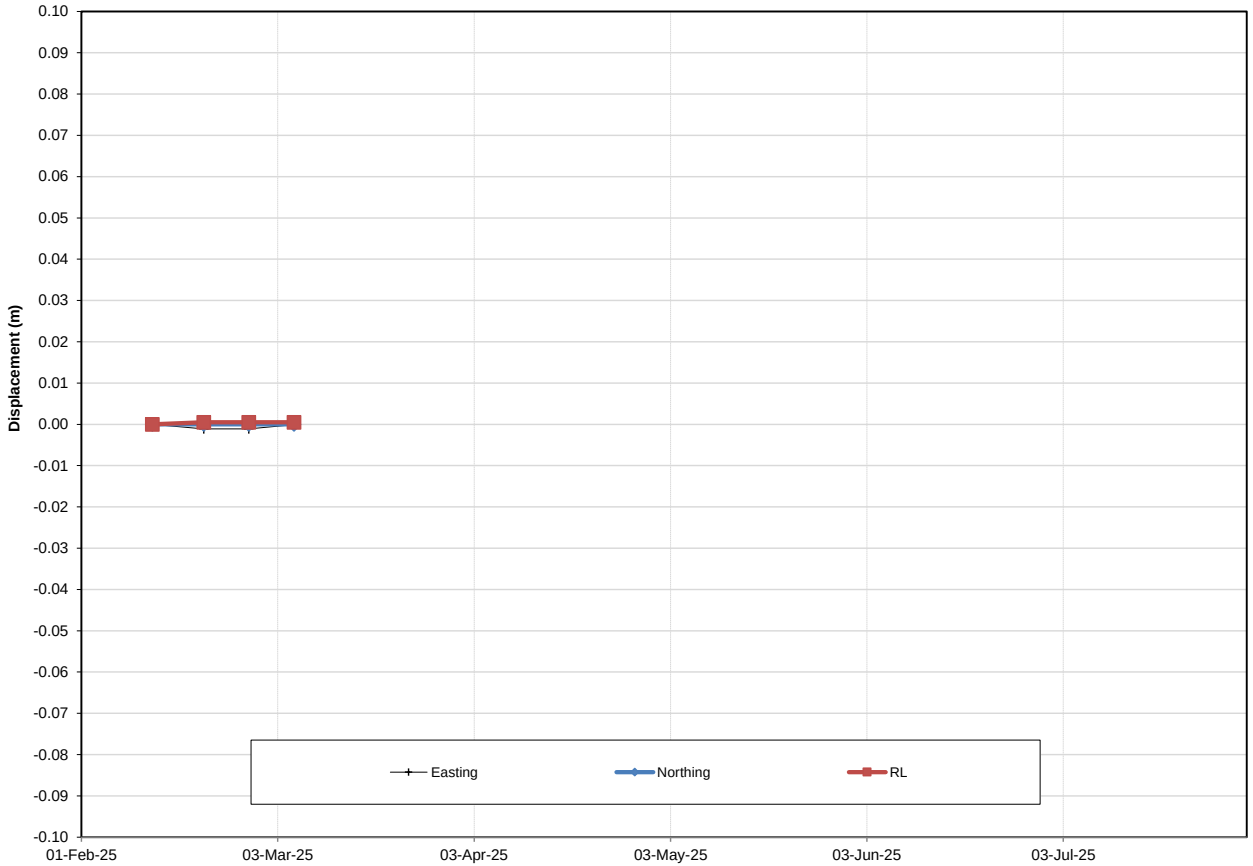
PRISM ID: **S3P10**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



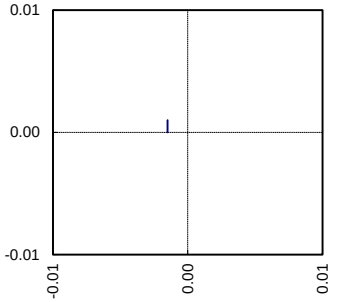
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

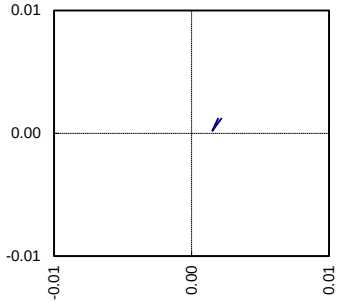
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P11**

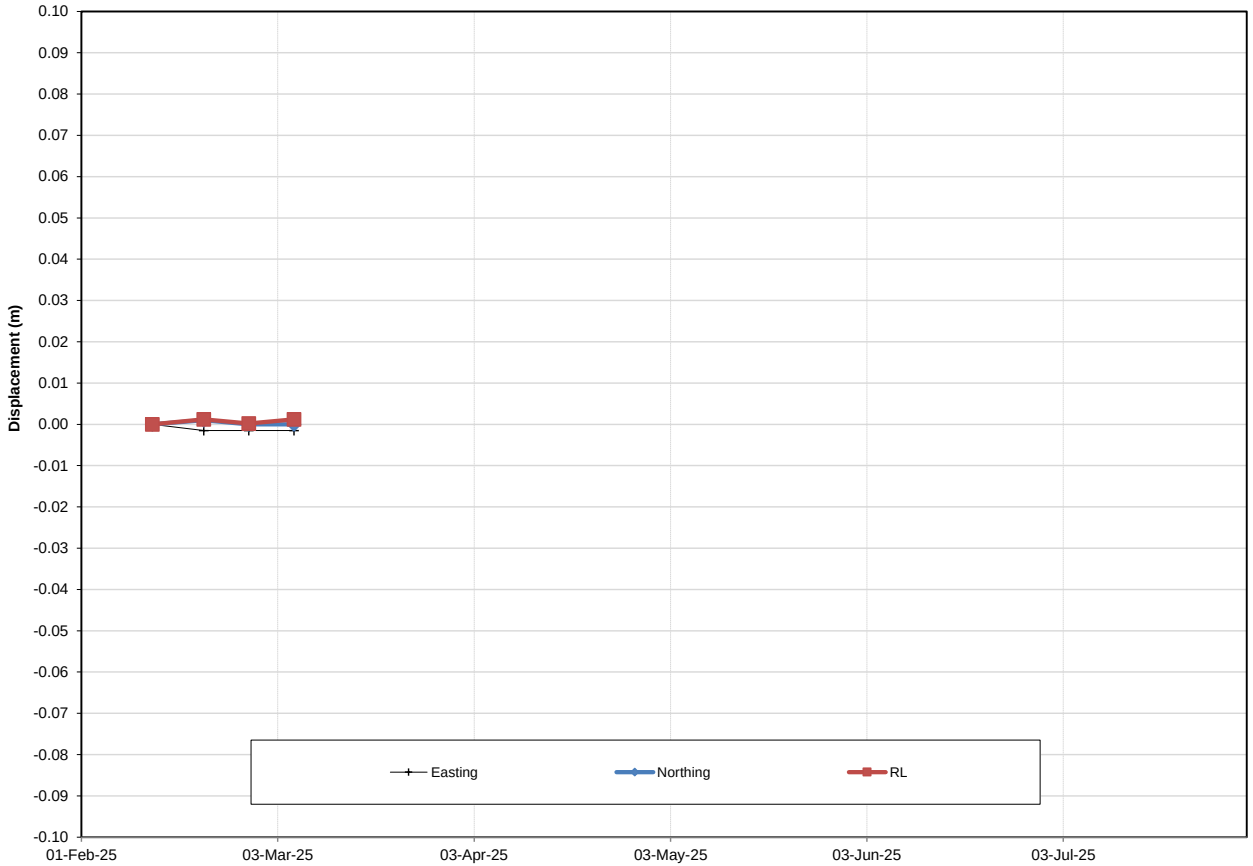


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



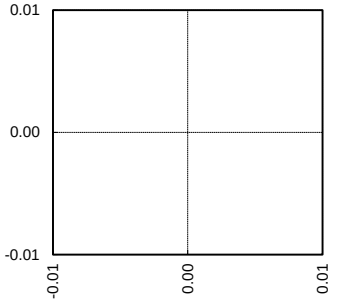
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

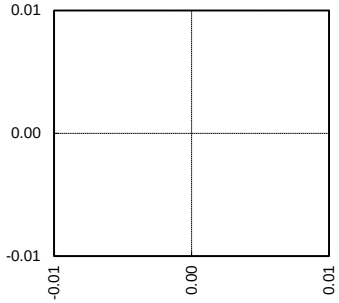
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

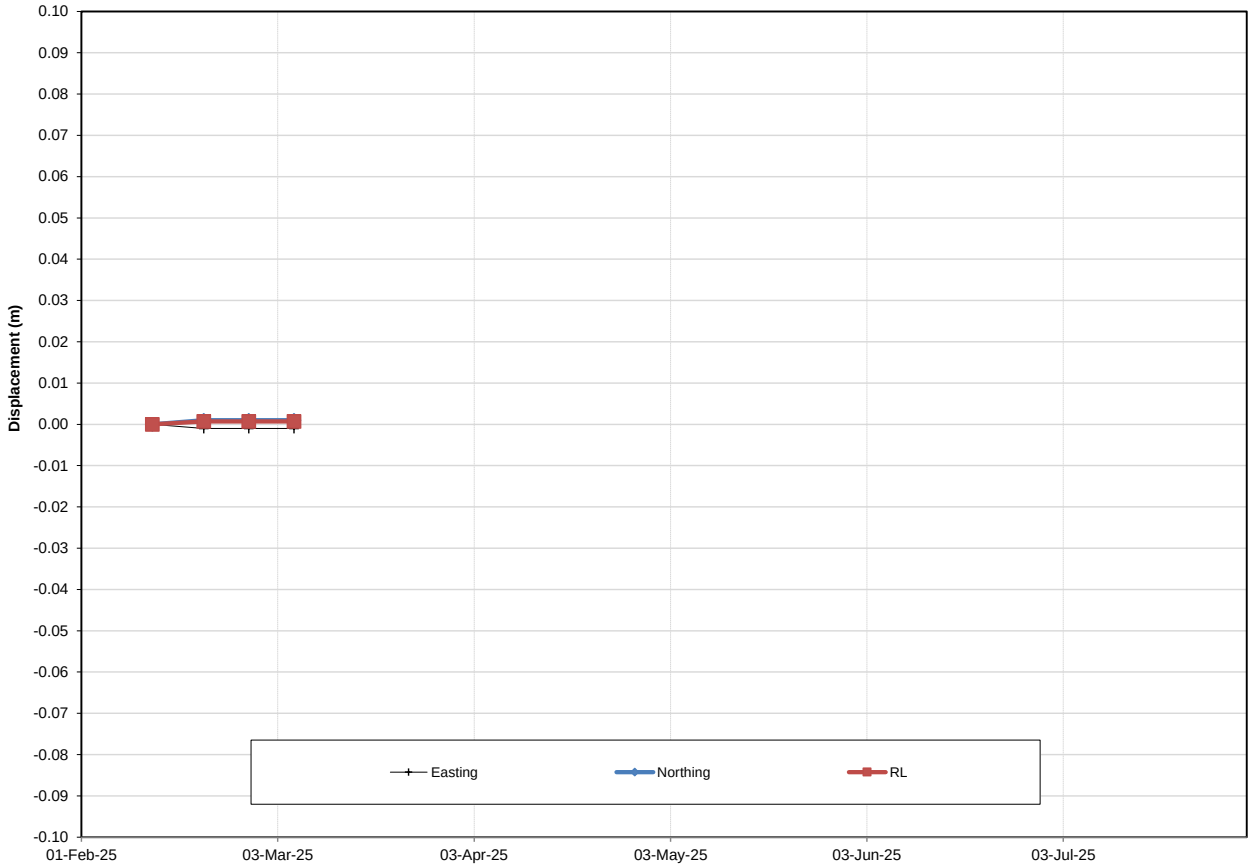
PRISM ID: **S3P12**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



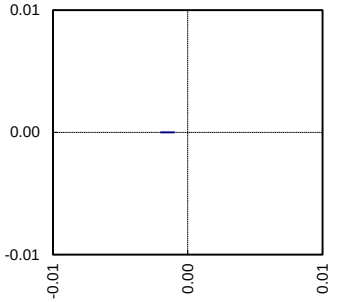
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

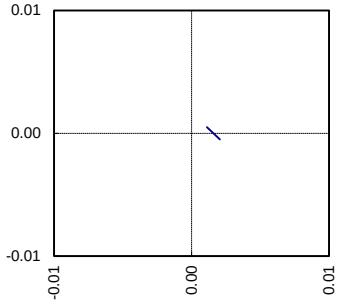
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P13**

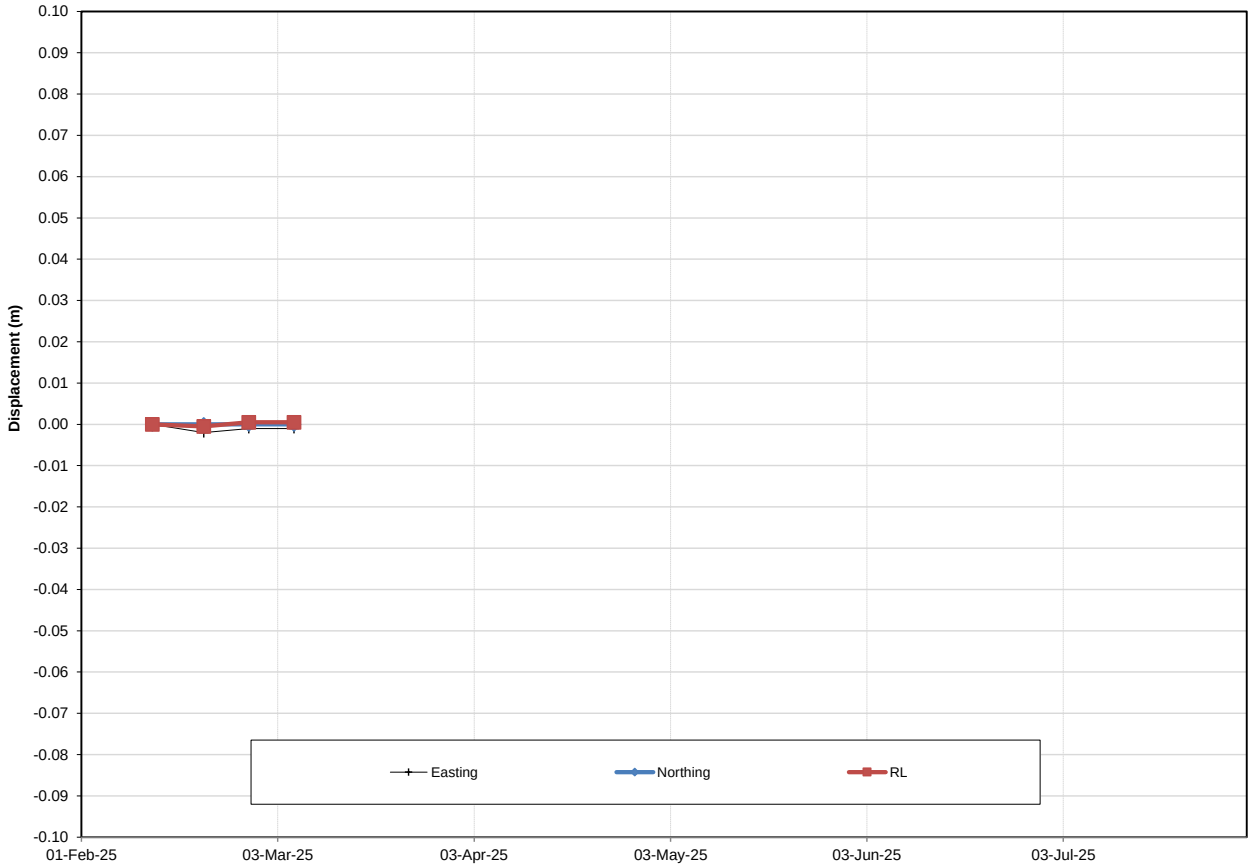


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



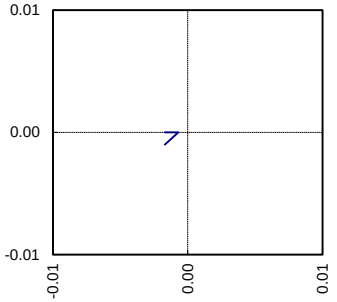
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

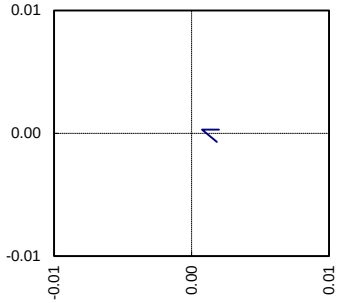
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P14**

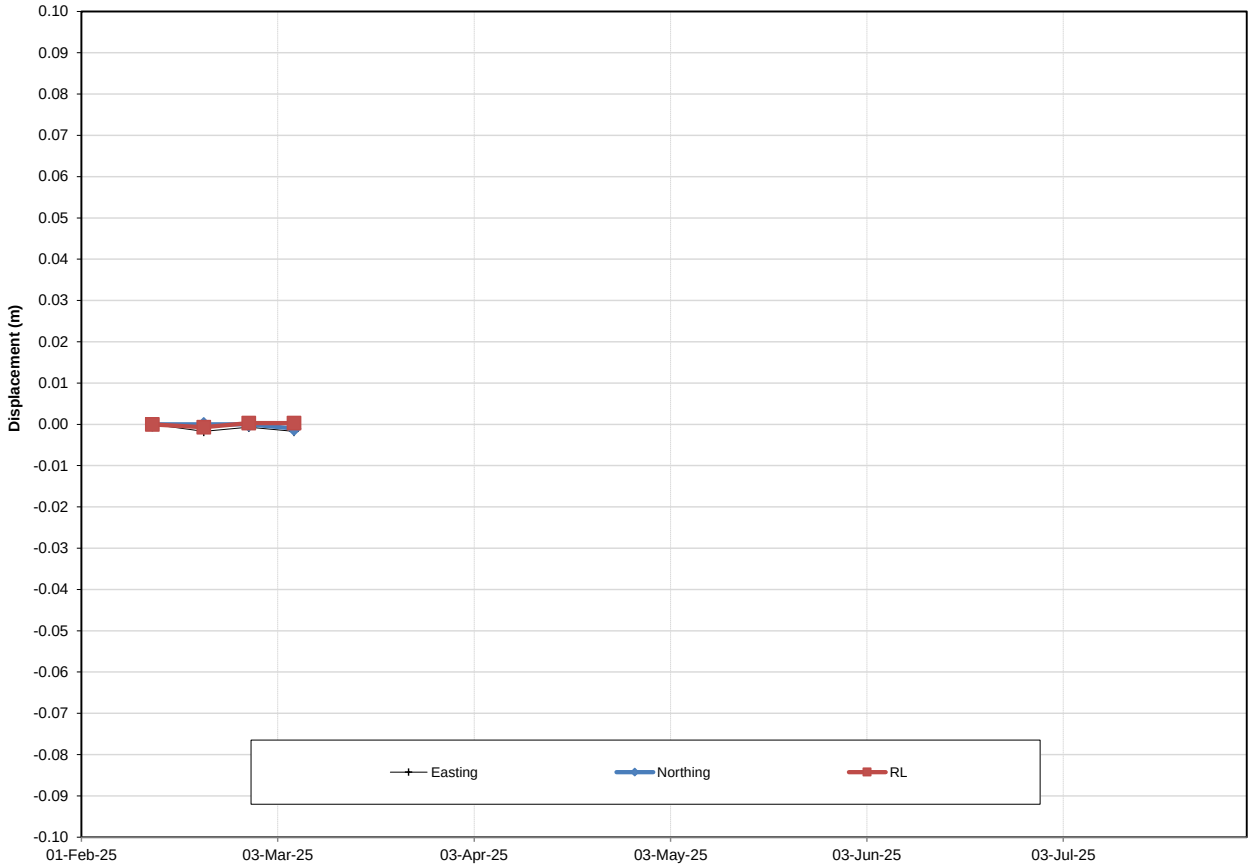


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



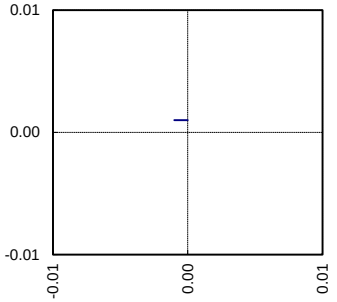
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

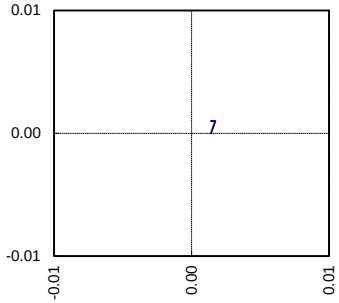
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P15**

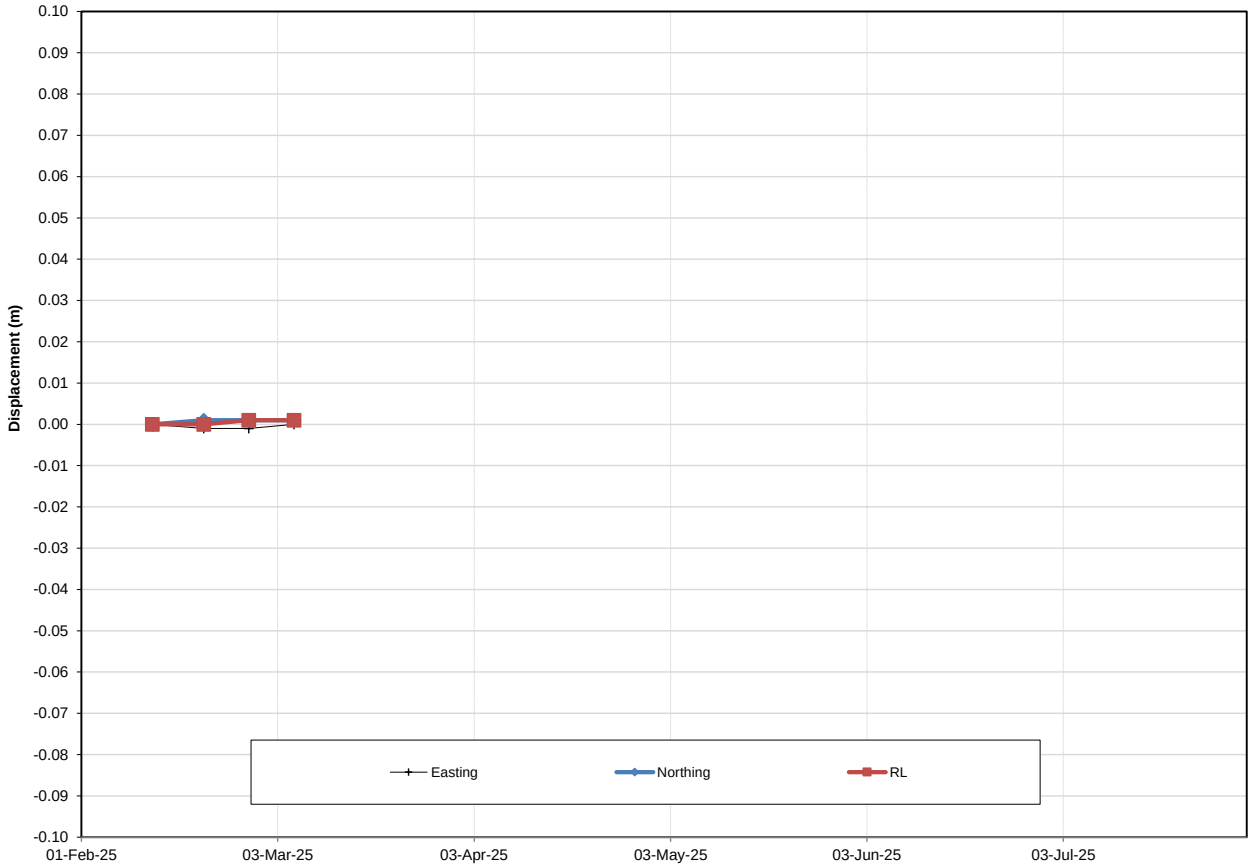


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



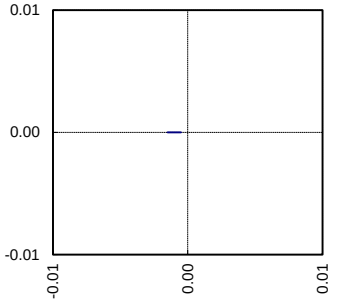
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

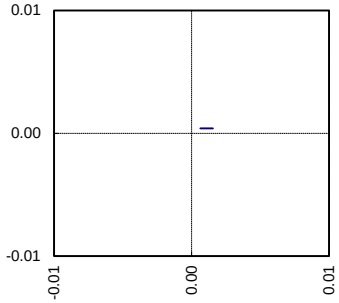
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

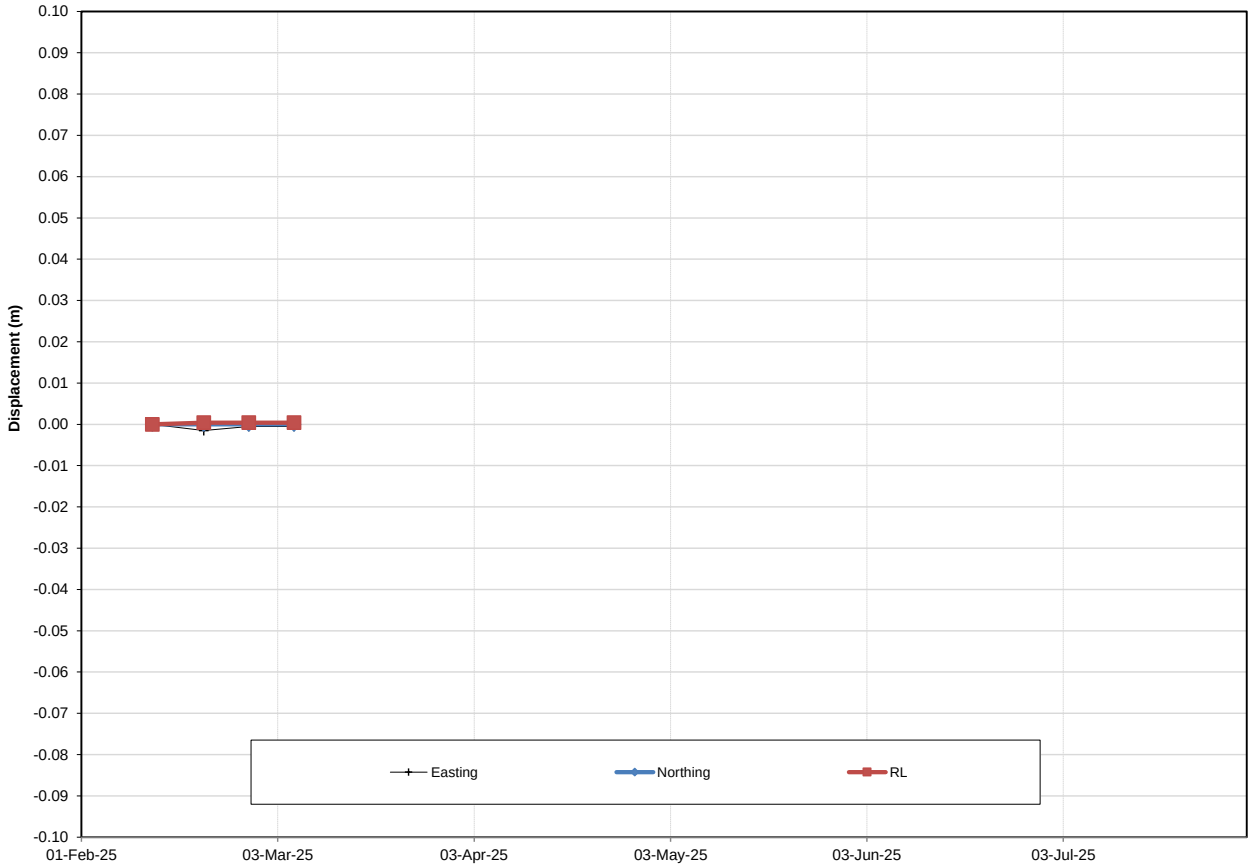
PRISM ID: **S3P16**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



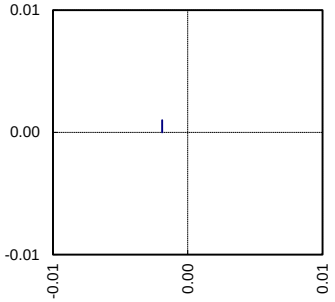
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

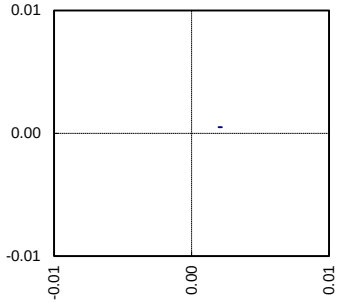
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S3P17**

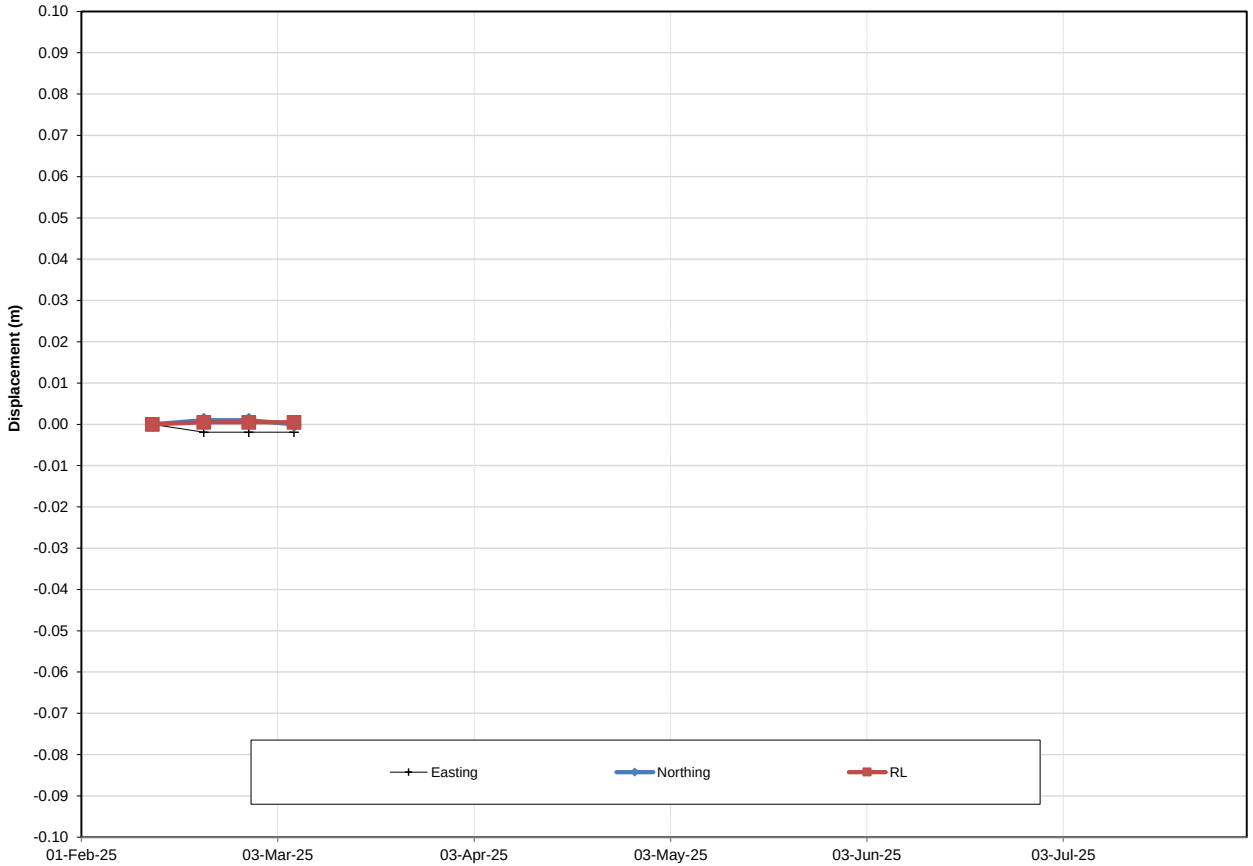


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



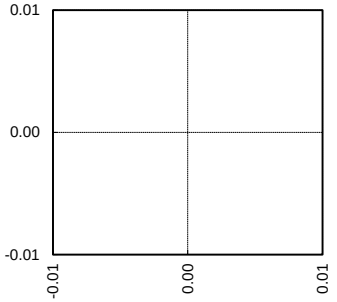
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

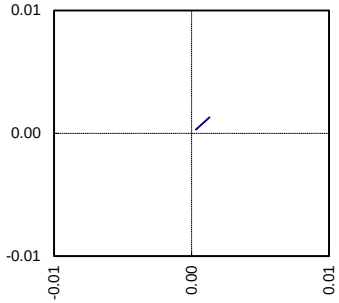
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

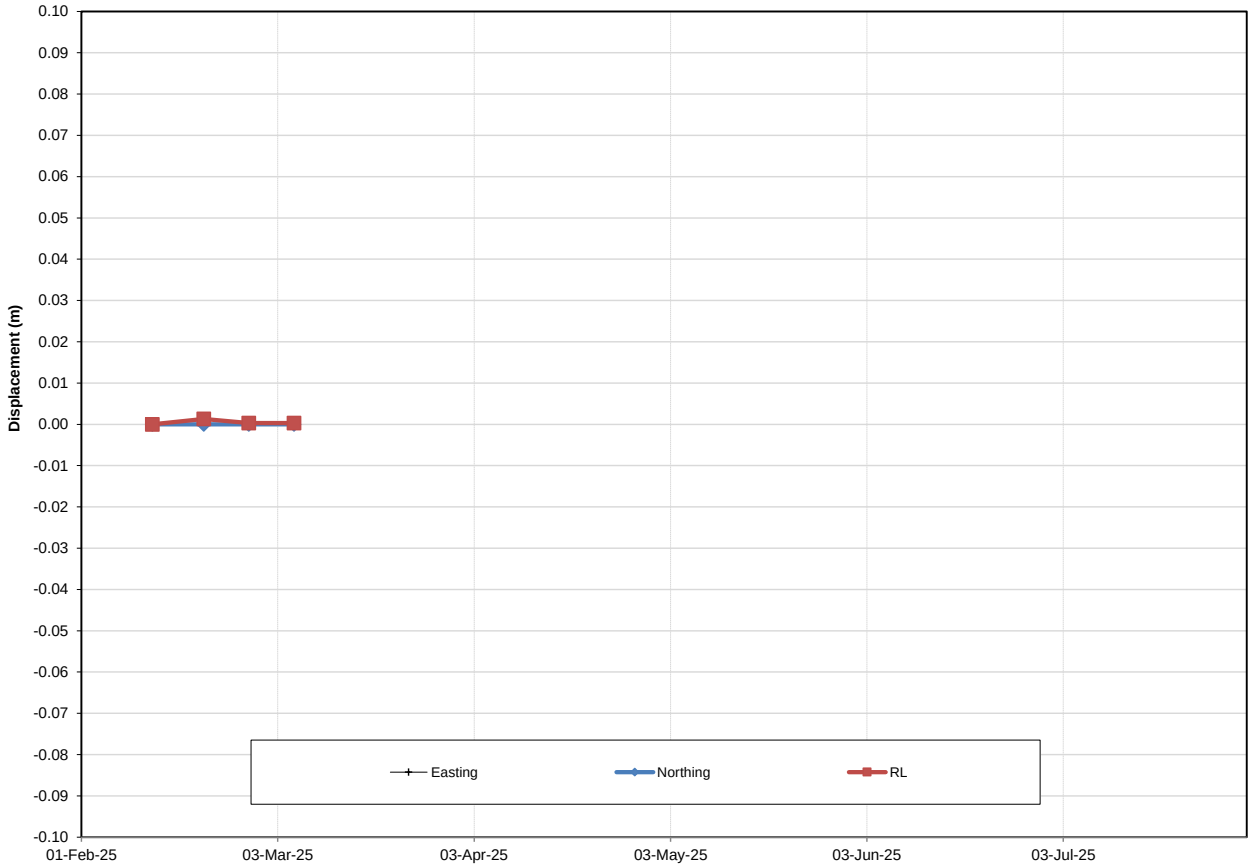
PRISM ID: **S3P18**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



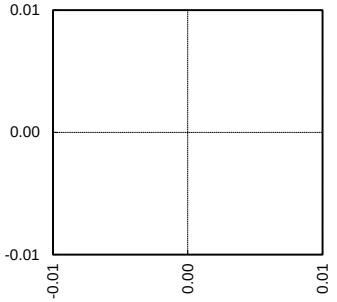
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

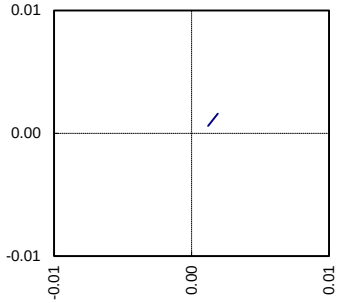
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

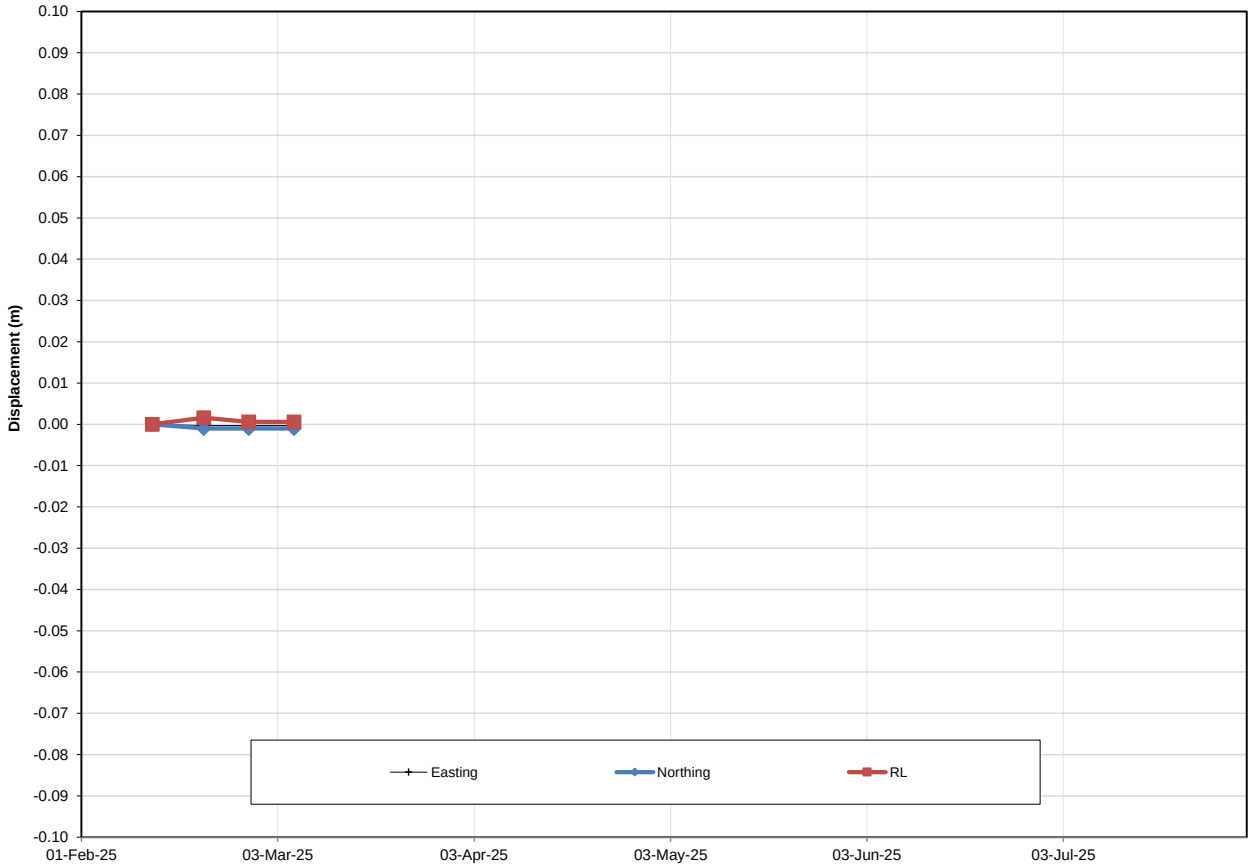
PRISM ID: **S4P19**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



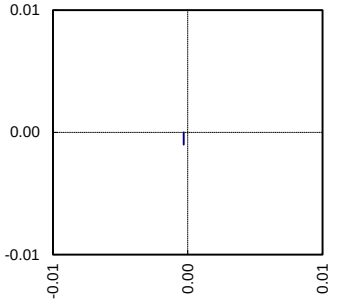
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

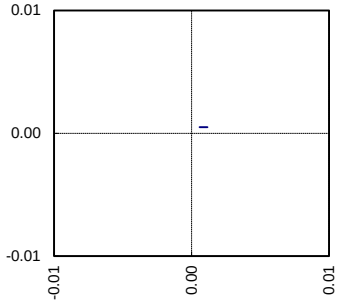
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S4P20**

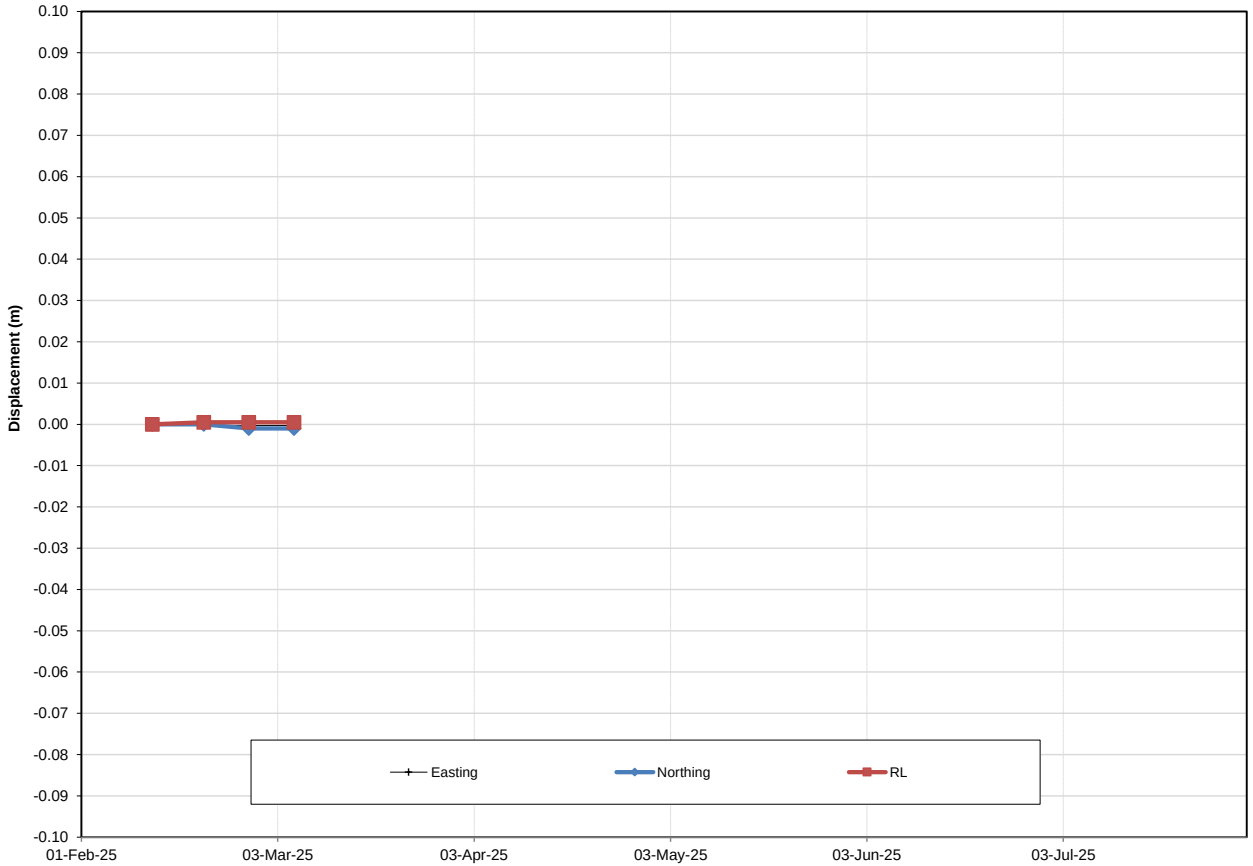


N

PLAN PLOT
mN vs mE

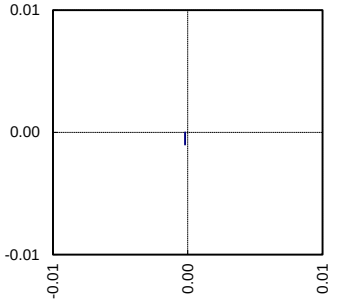


SECTION PLOT
RL vs Movement Vector

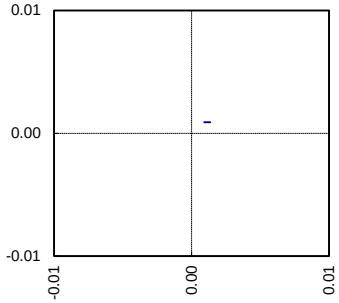


Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

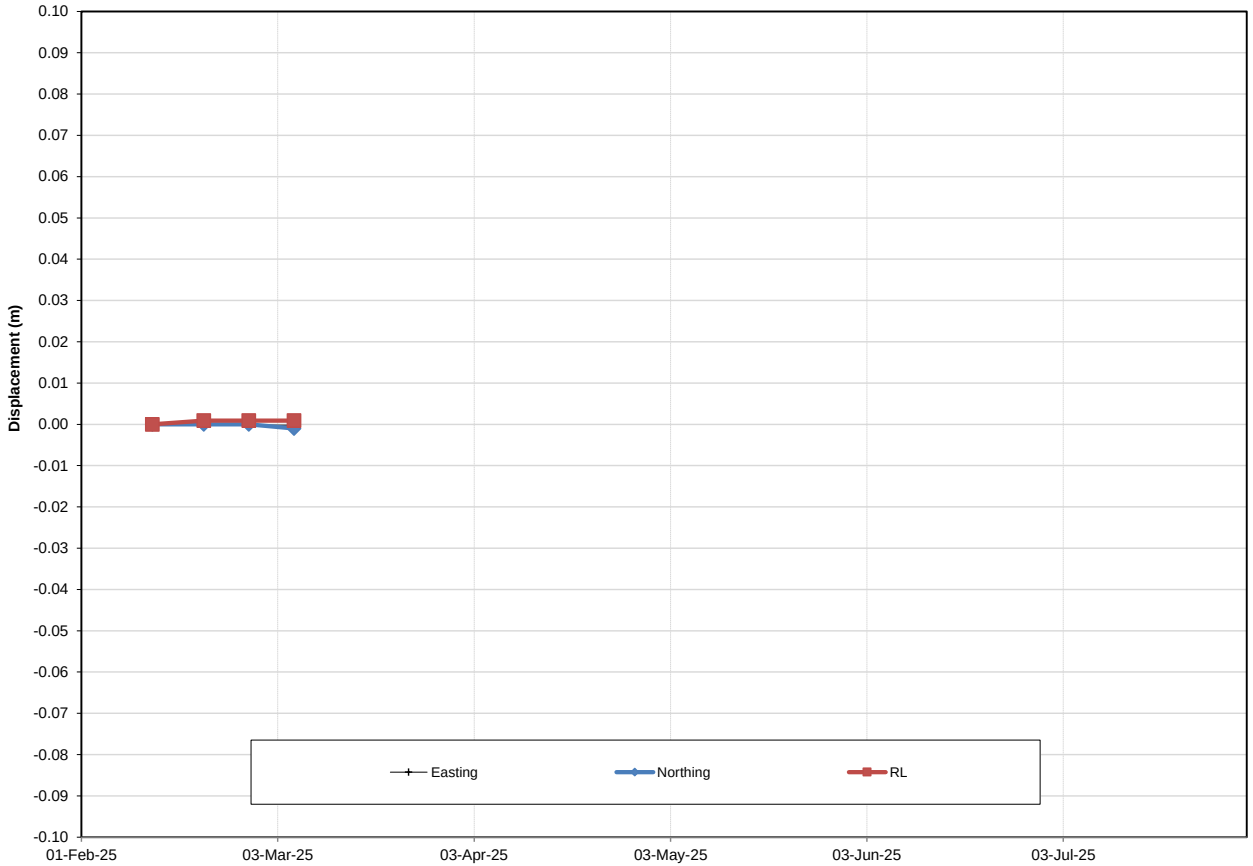
Job Number:	PSM5665		
COMPANY:	Mornington Peninsula Shire Council	Analysed by:	AW
SITE:	McCrae	Analysed on:	11/03/2025
PROJECT :	McCrae Landslide Incident Monitoring		
INITIAL DATE:	20/02/2025	PRISM ID:	**S4P21**
LAST DATE:	6/03/2025		



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



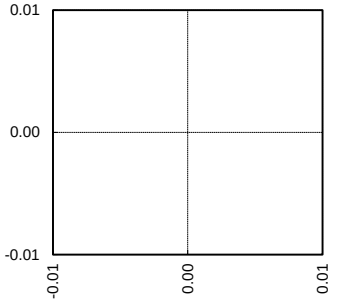
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

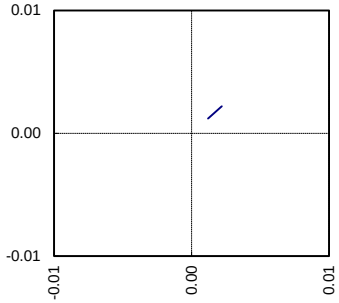
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S4P22**

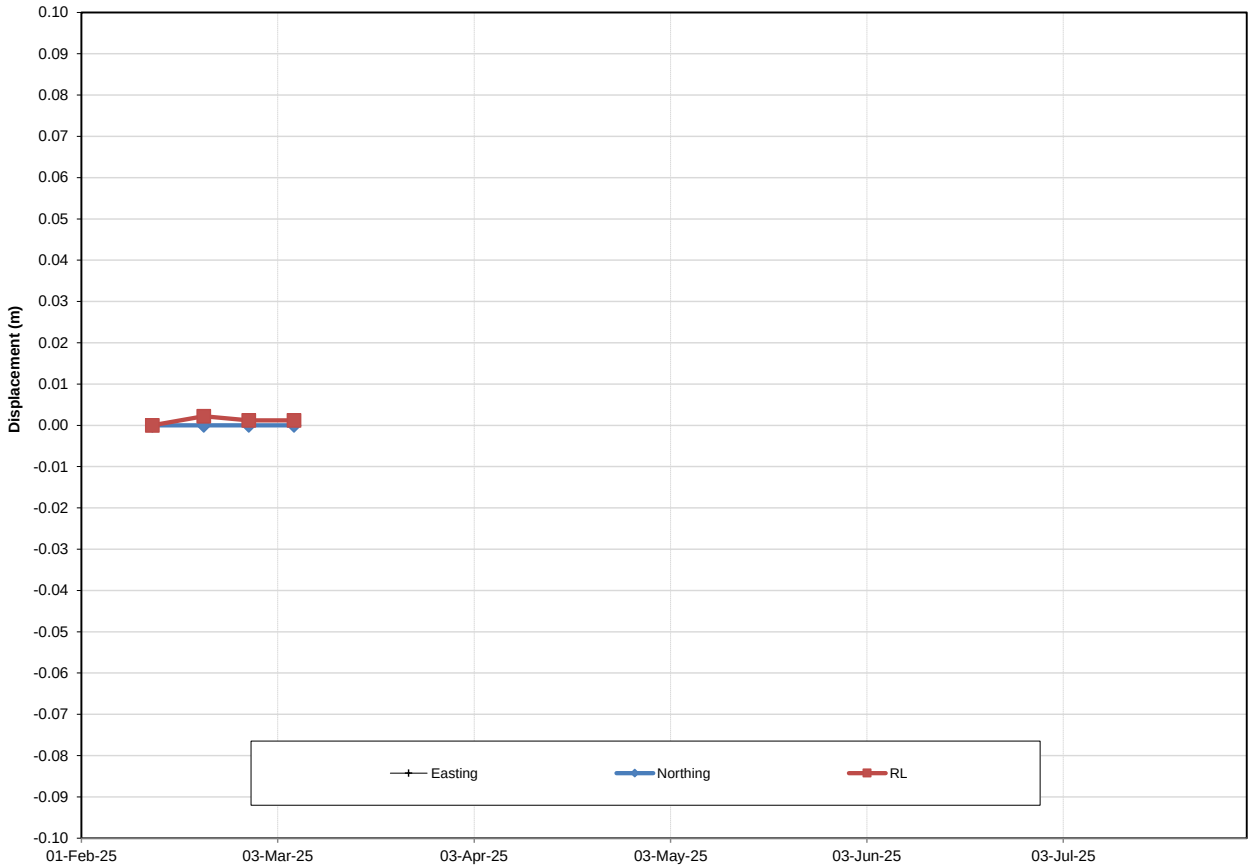


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



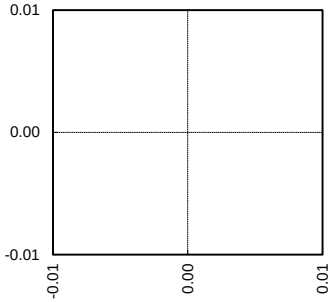
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

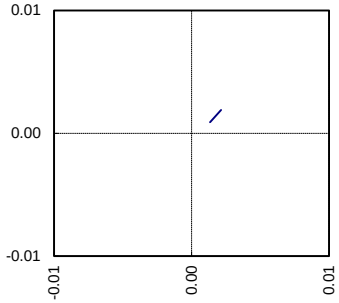
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

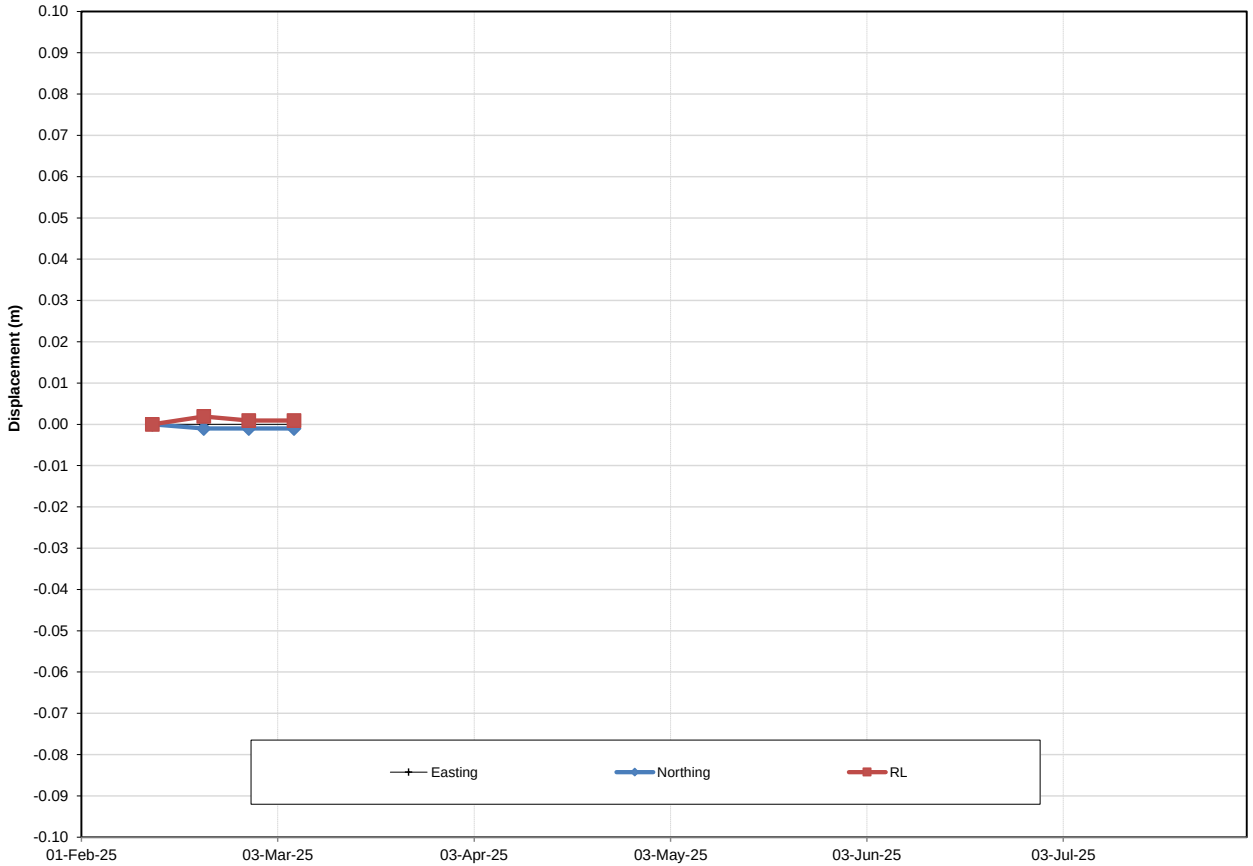
PRISM ID: **S4P23**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



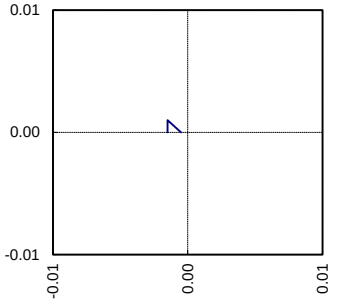
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
-0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

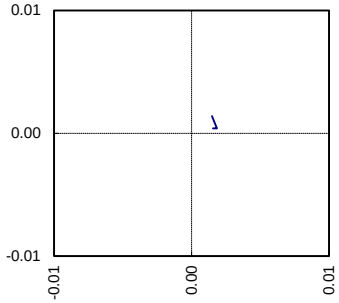
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S4P24**

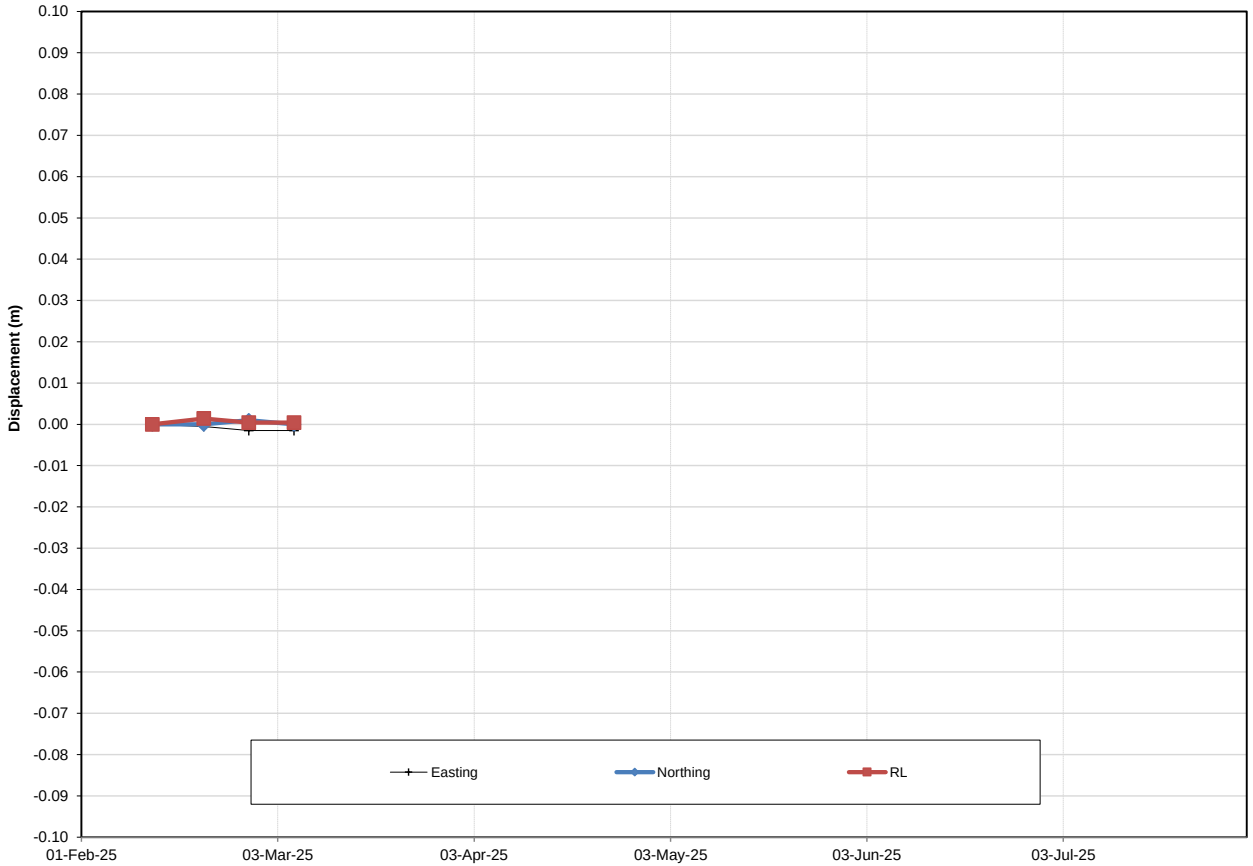


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



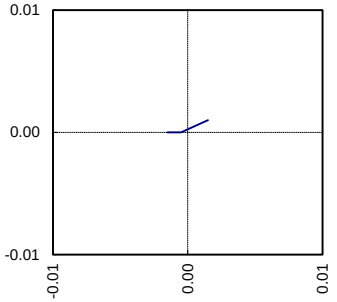
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

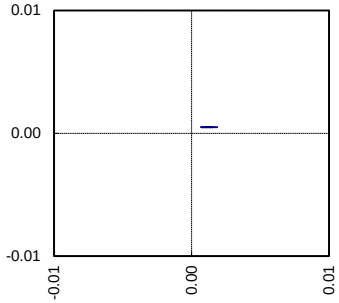
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S5P25**

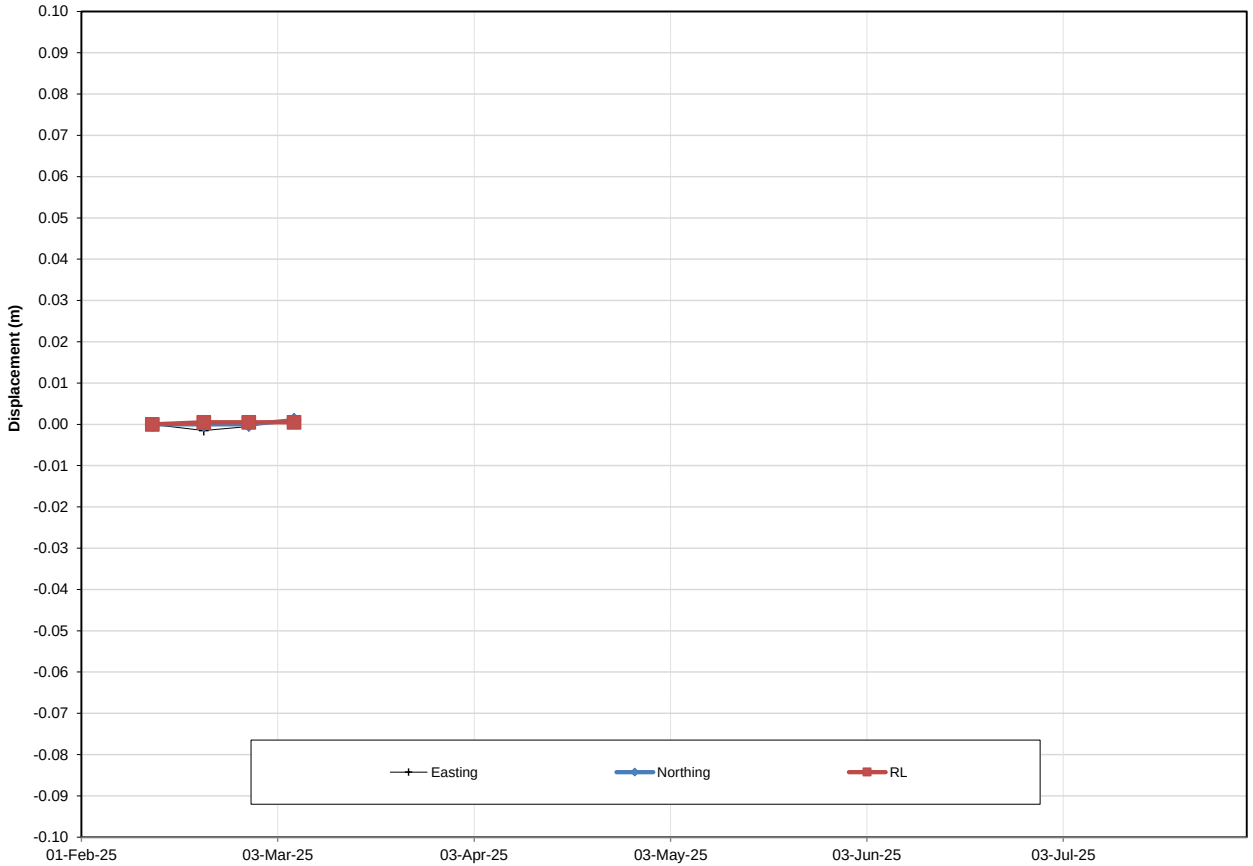


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



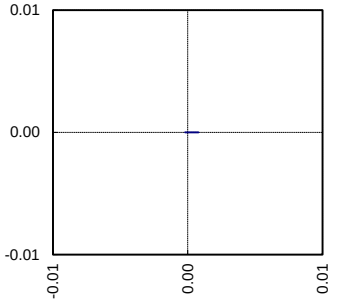
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

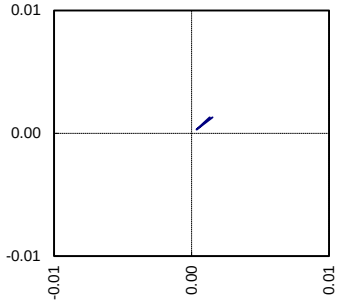
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

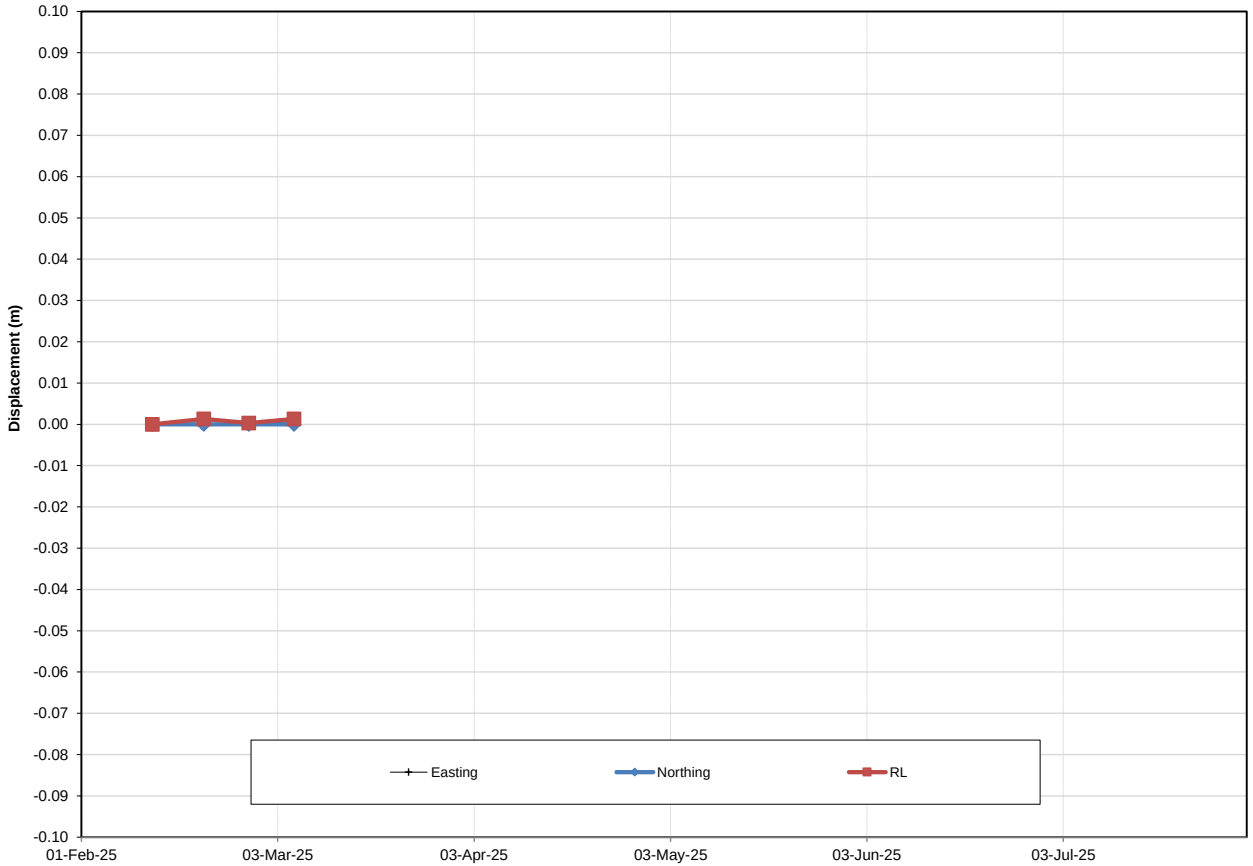
PRISM ID: **S5P26**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



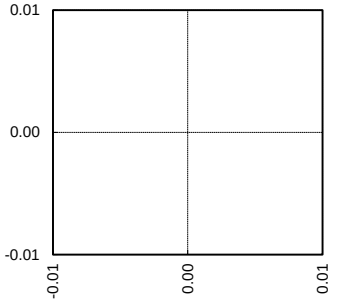
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

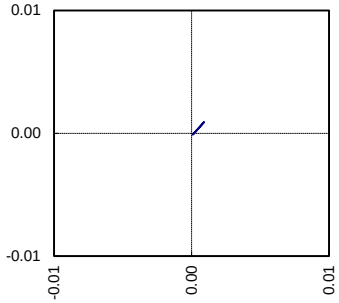
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

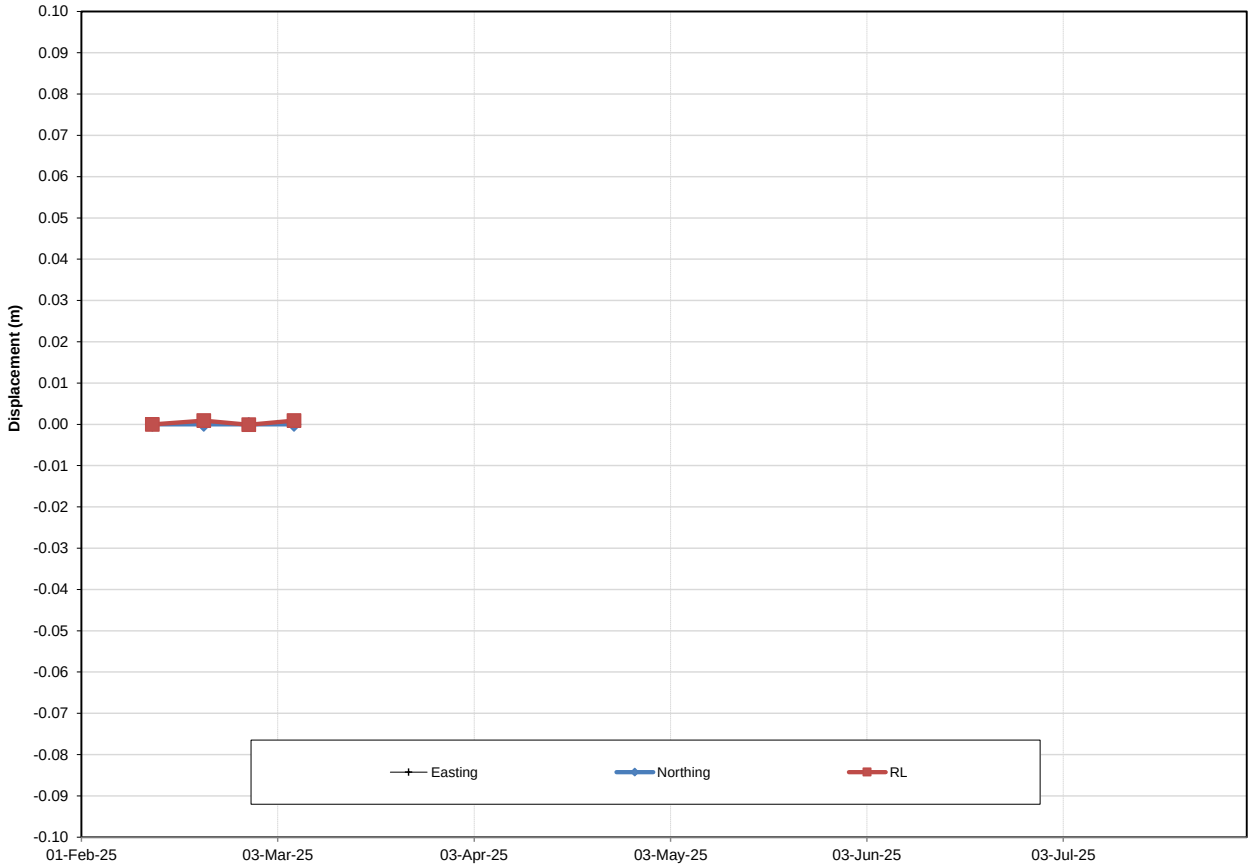
PRISM ID: **S5P27**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



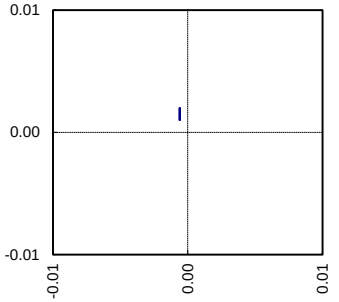
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

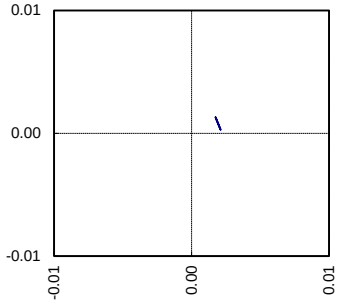
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

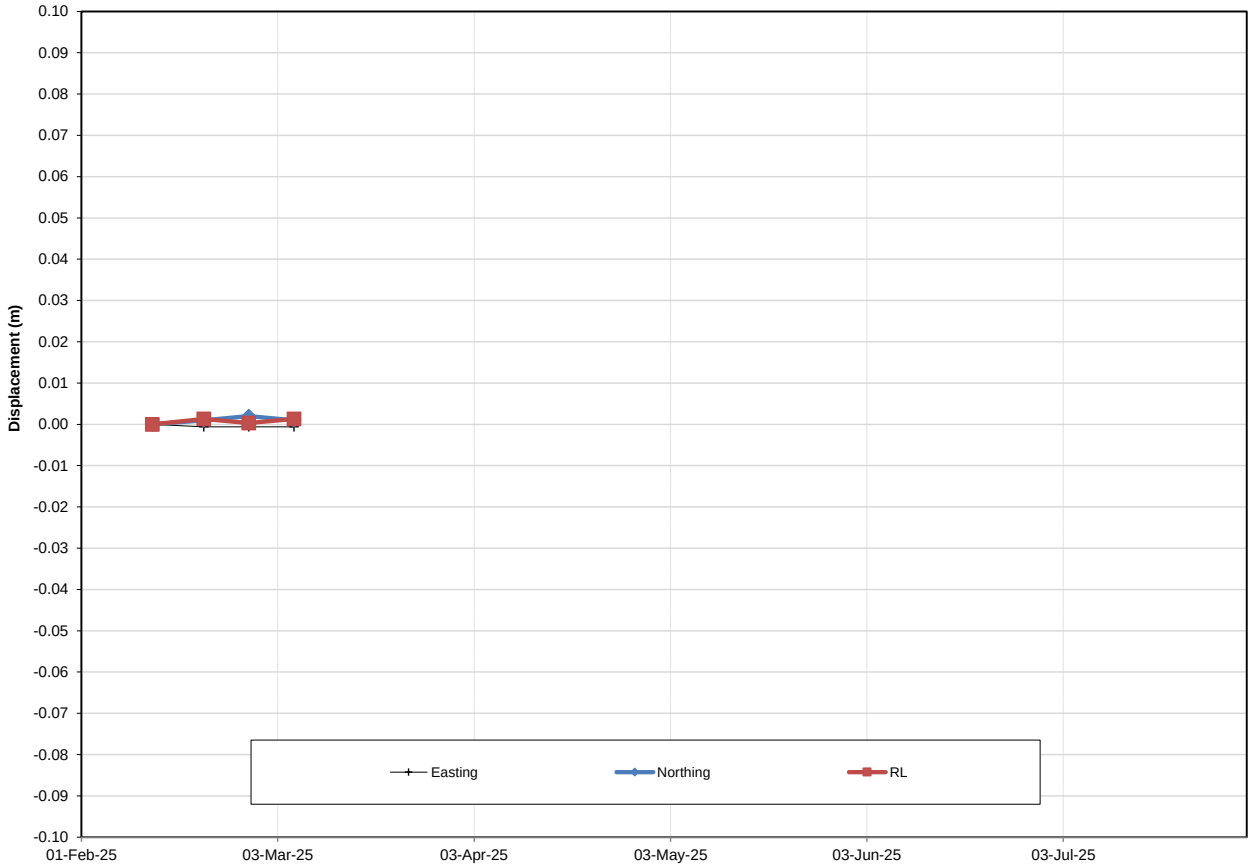
PRISM ID: **S5P28**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



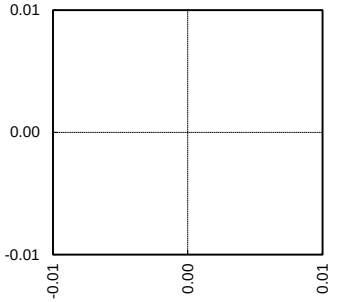
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

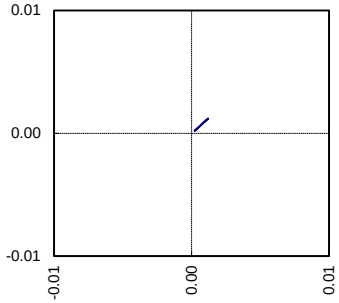
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S5P29**

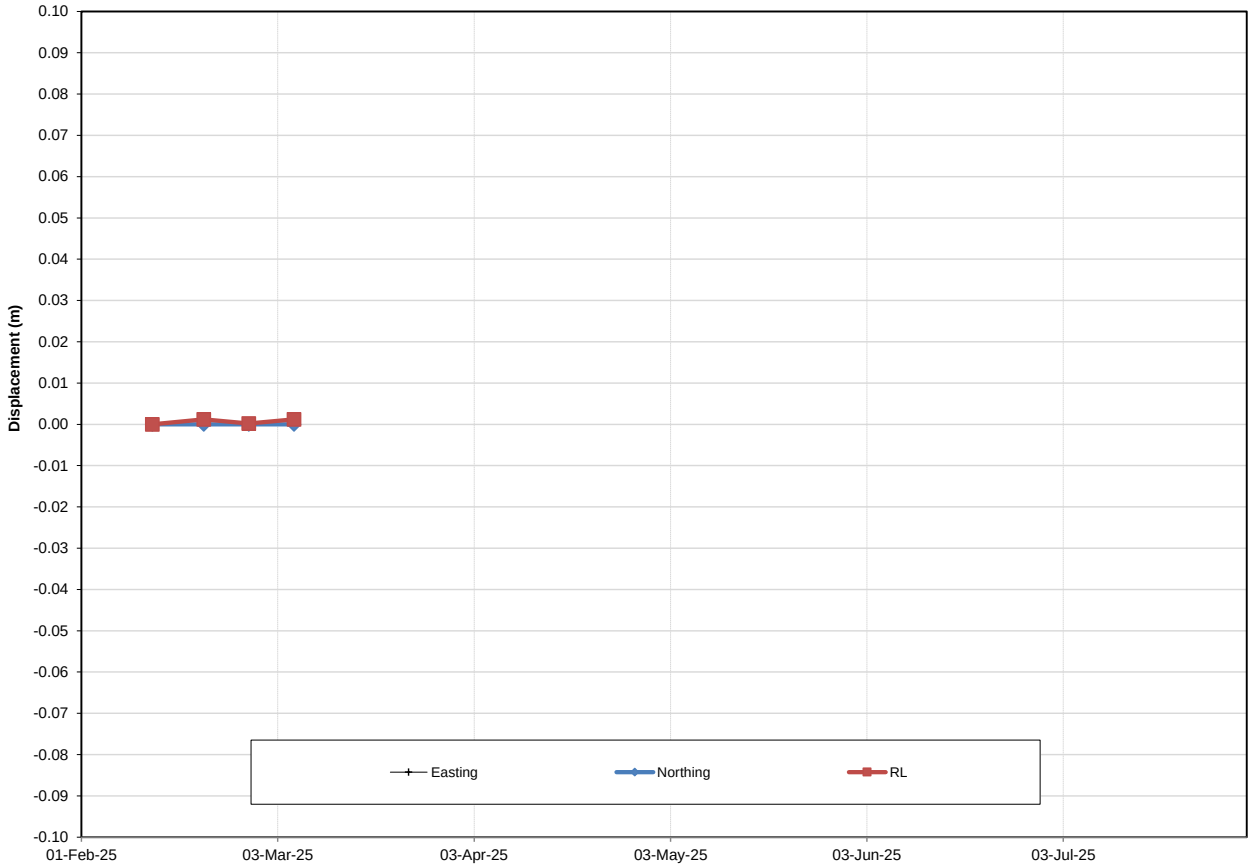


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



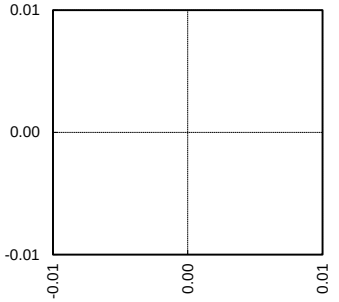
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.0		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

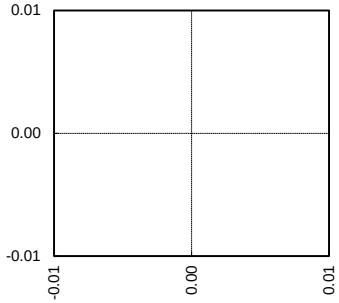
INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

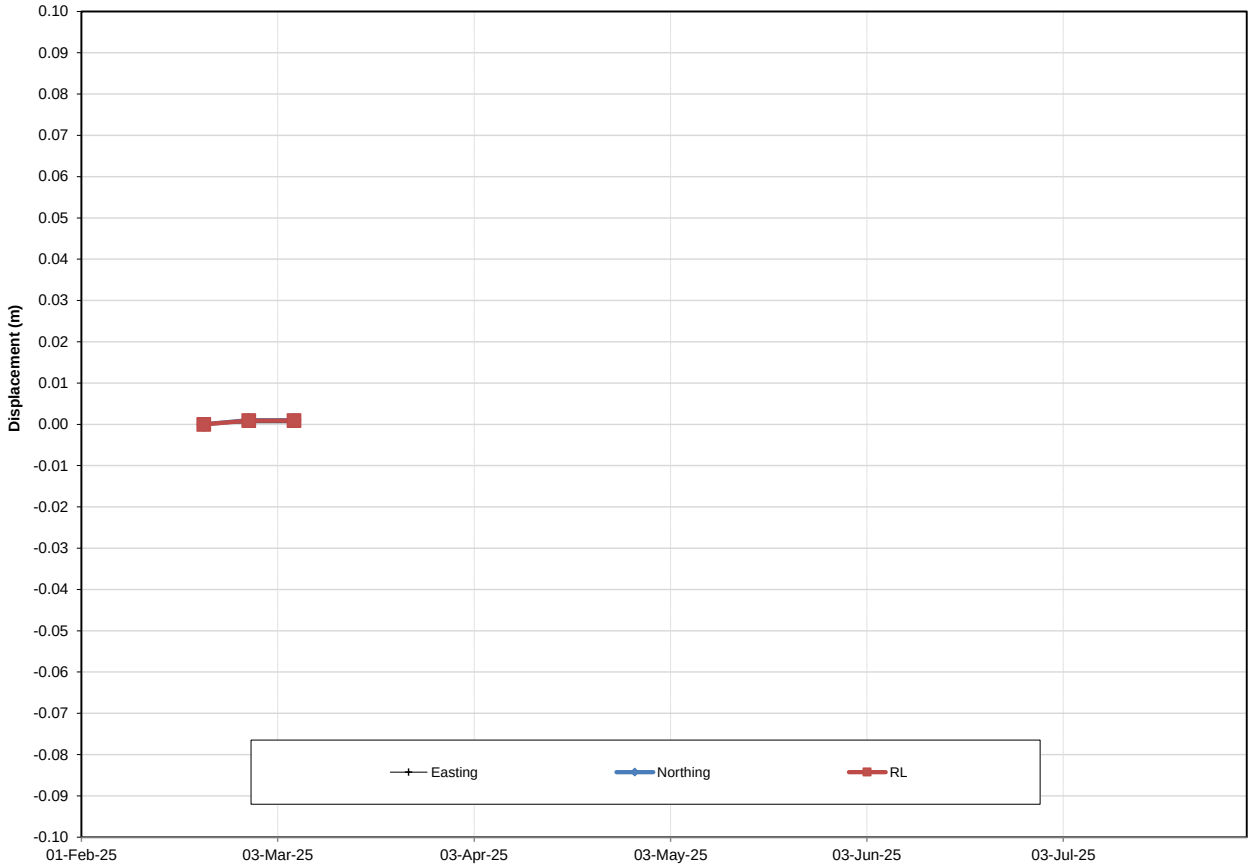
PRISM ID: **S5P30**



N PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



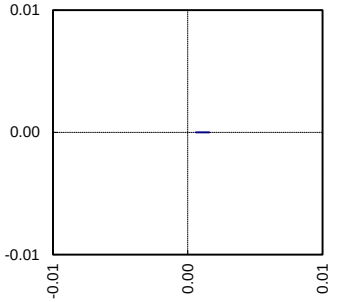
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

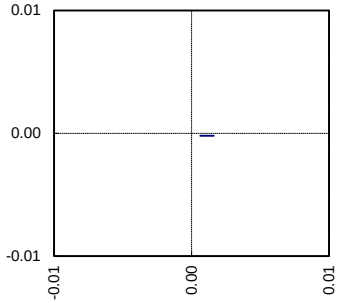
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S6P34**

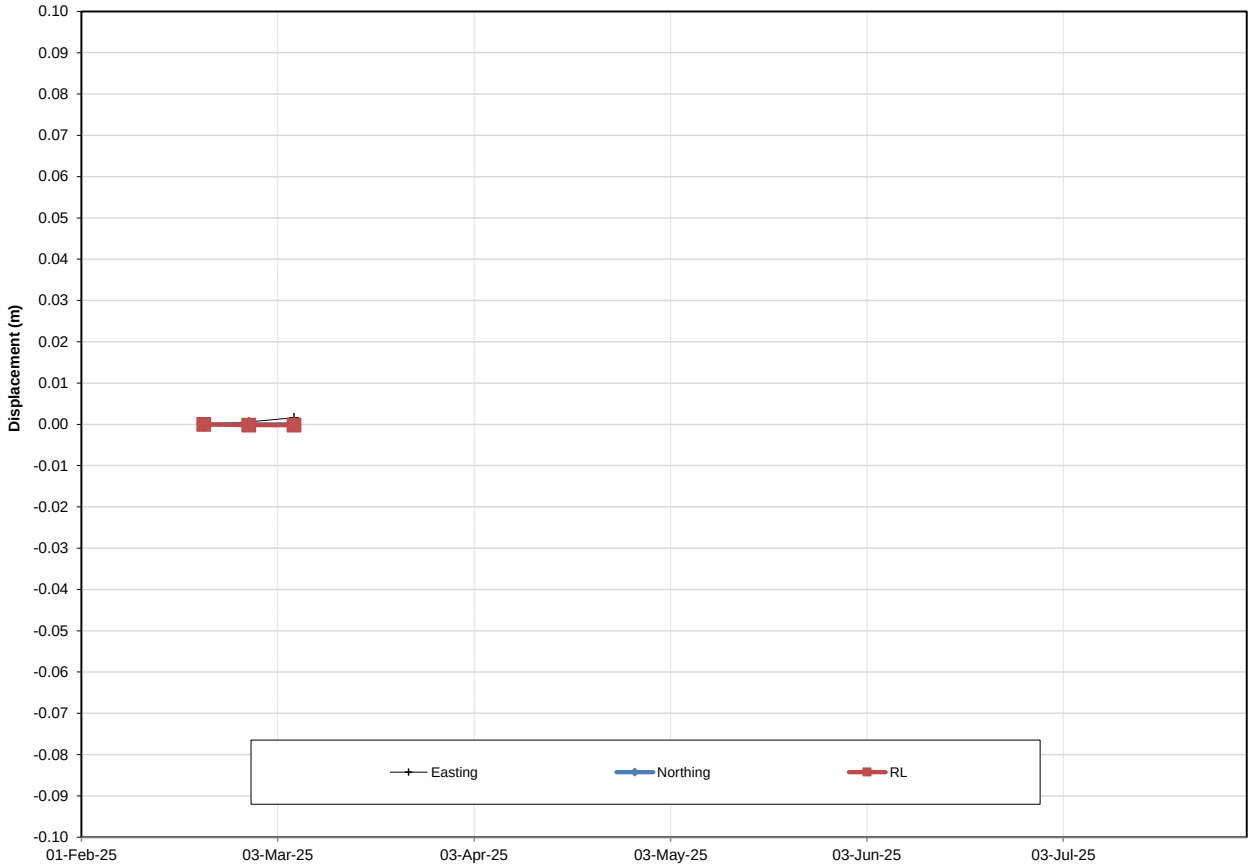


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



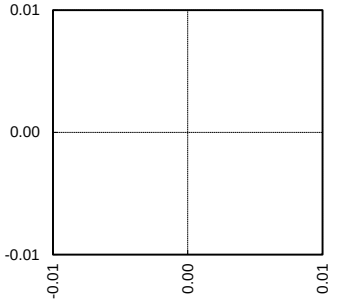
Rate over Final 3 days mm/day	Rate over Last week mm/day	Rate over Last Month mm/day
0.1		

Job Number: PSM5665
COMPANY: Mornington Peninsula Shire Council
SITE: McCrae
PROJECT : McCrae Landslide Incident Monitoring

INITIAL DATE: 20/02/2025
LAST DATE: 6/03/2025

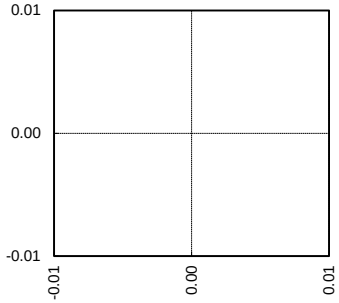
Analysed by: AW
Analysed on: 11/03/2025

PRISM ID: **S6P35**

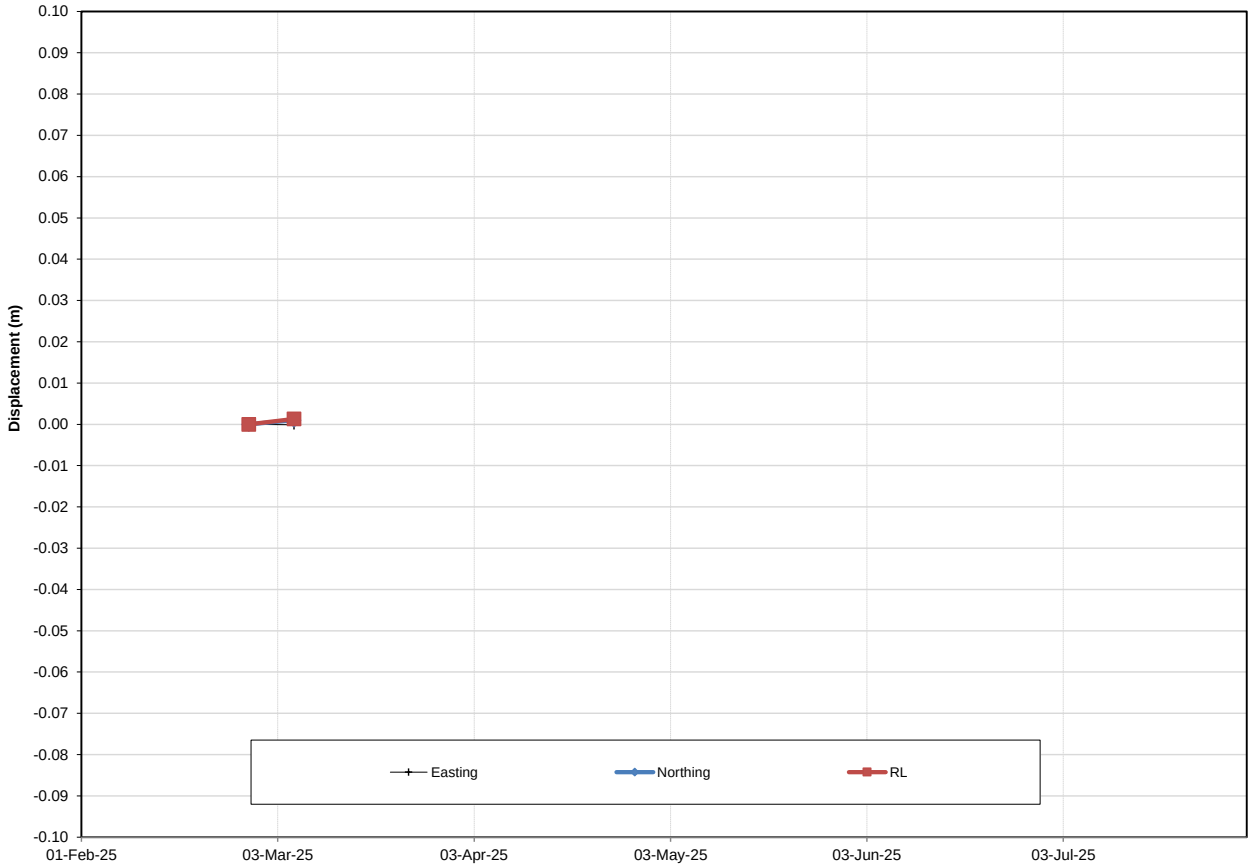


N

PLAN PLOT
mN vs mE



SECTION PLOT
RL vs Movement Vector



Rate over Final 3 days mm/day

Rate over Last week mm/day

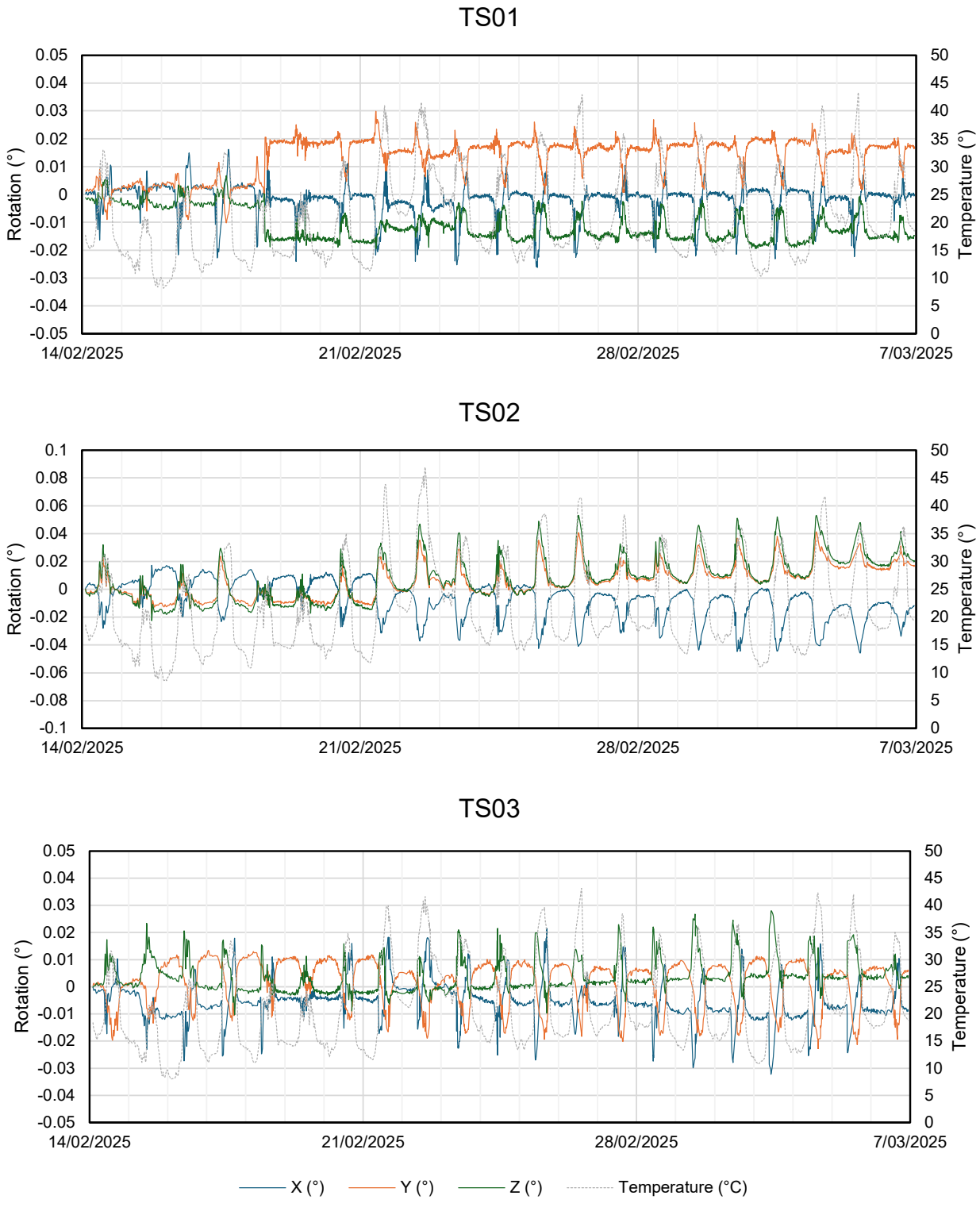
Rate over Last Month mm/day

Job Number:	PSM5665
COMPANY:	Mornington Peninsula Shire Council
SITE:	McCrae
PROJECT :	McCrae Landslide Incident Monitoring
INITIAL DATE:	20/02/2025
LAST DATE:	6/03/2025

Analysed by: AW
Analysed on: 11/03/2025

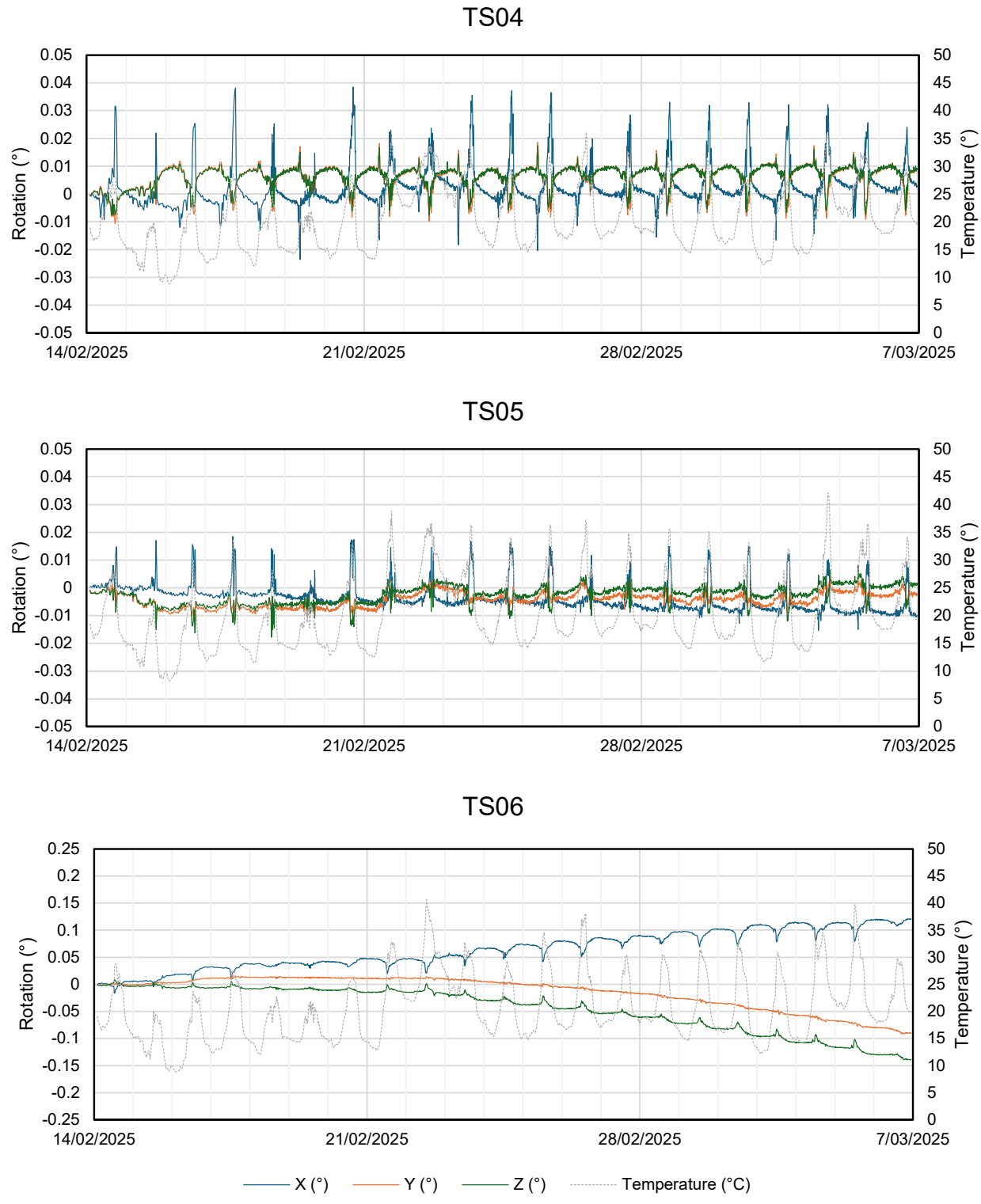
PRISM ID: **S6P36**

Appendix F
Tilt sensor monitoring plots



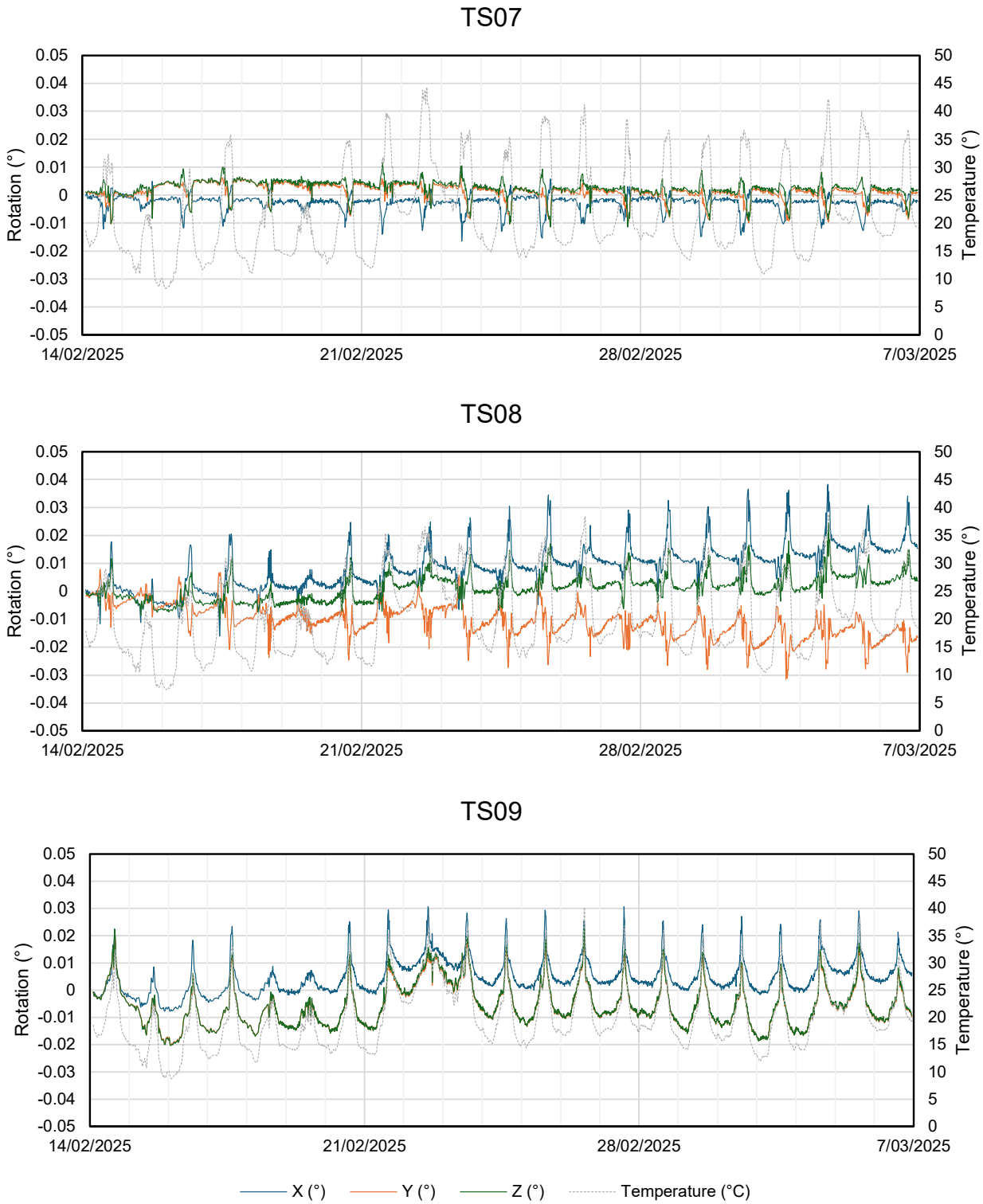
Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

PSM5665-052M	Figure F1



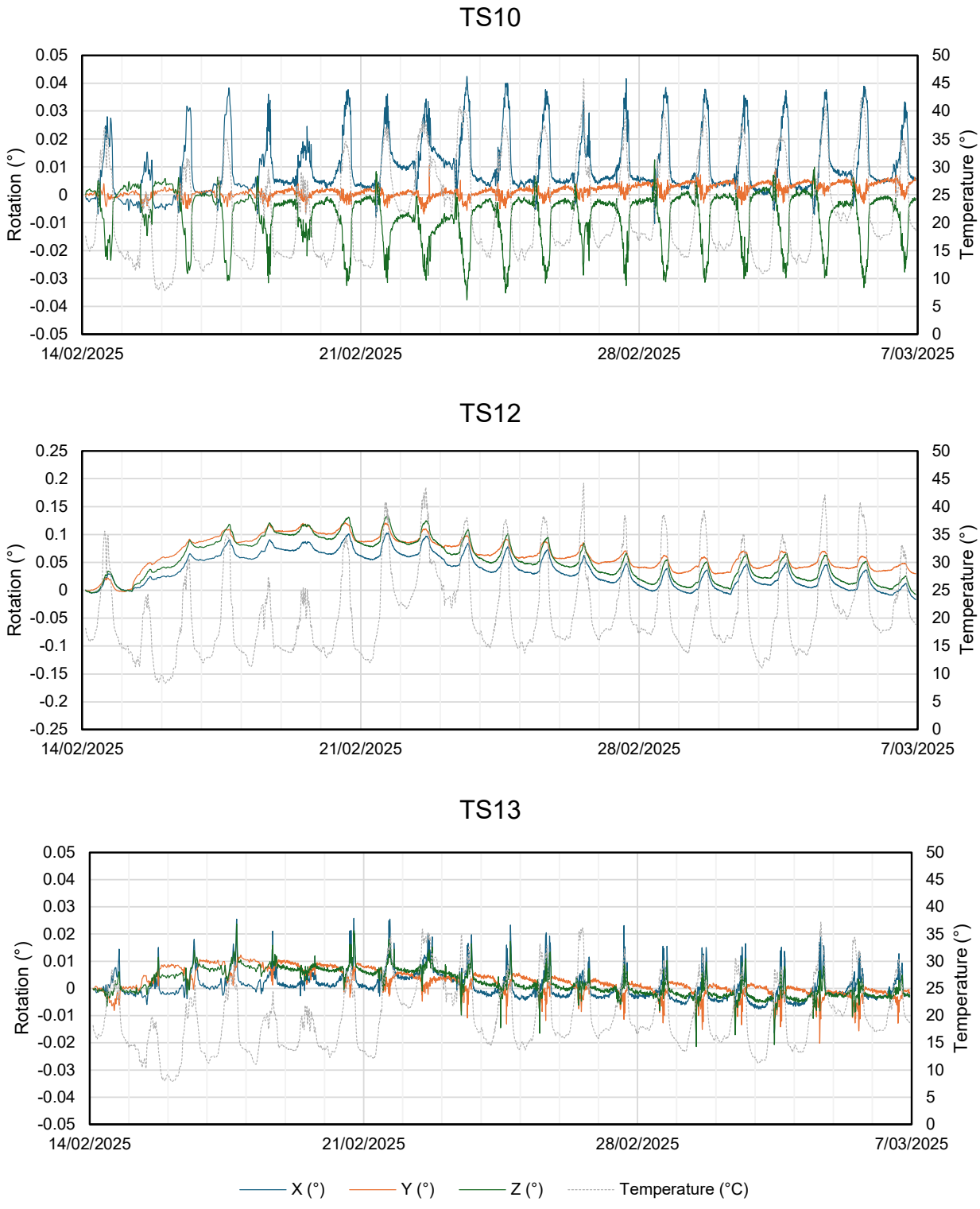
Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

PSM5665-052M	Figure F2



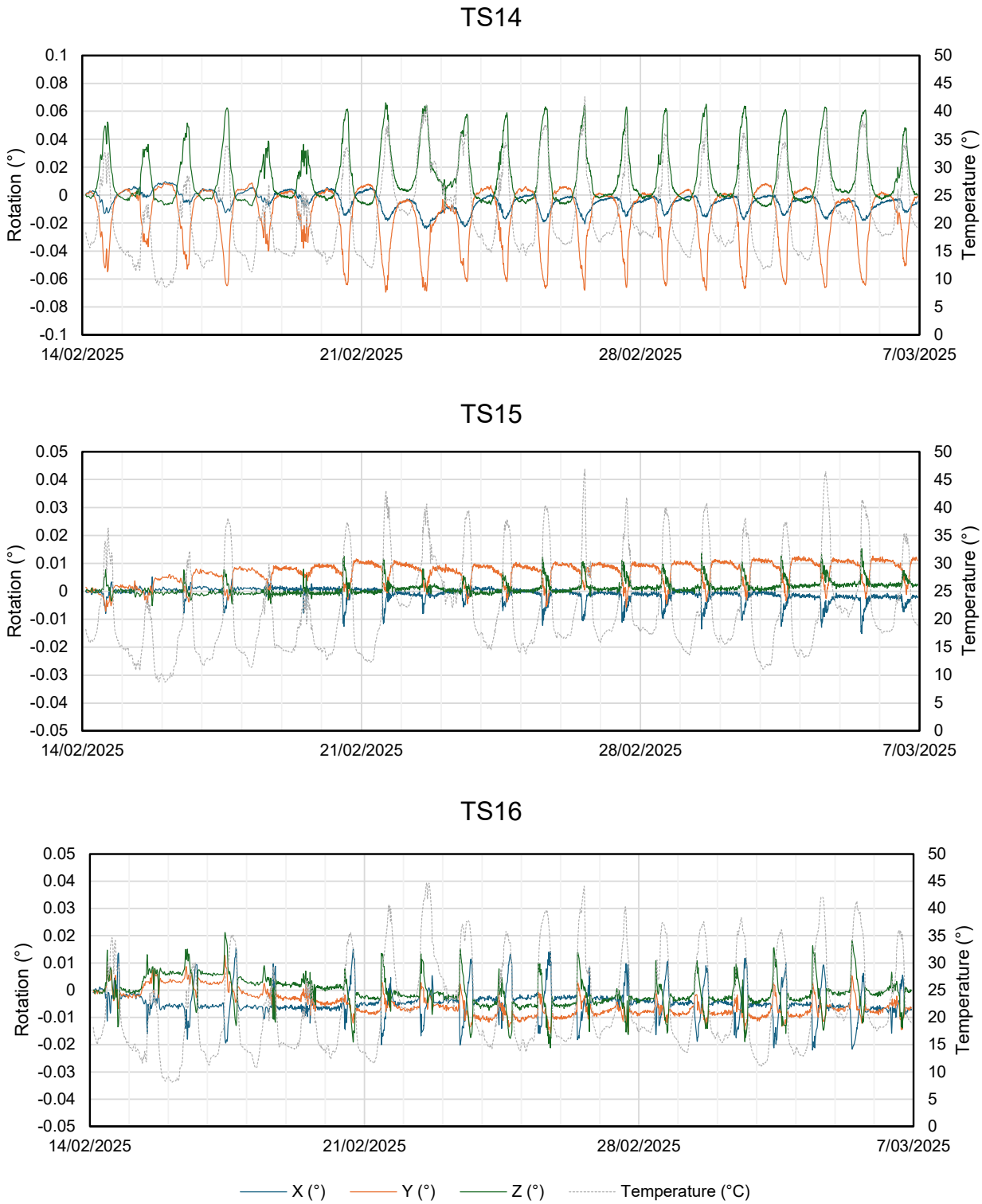
Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

PSM5665-052M	Figure F3



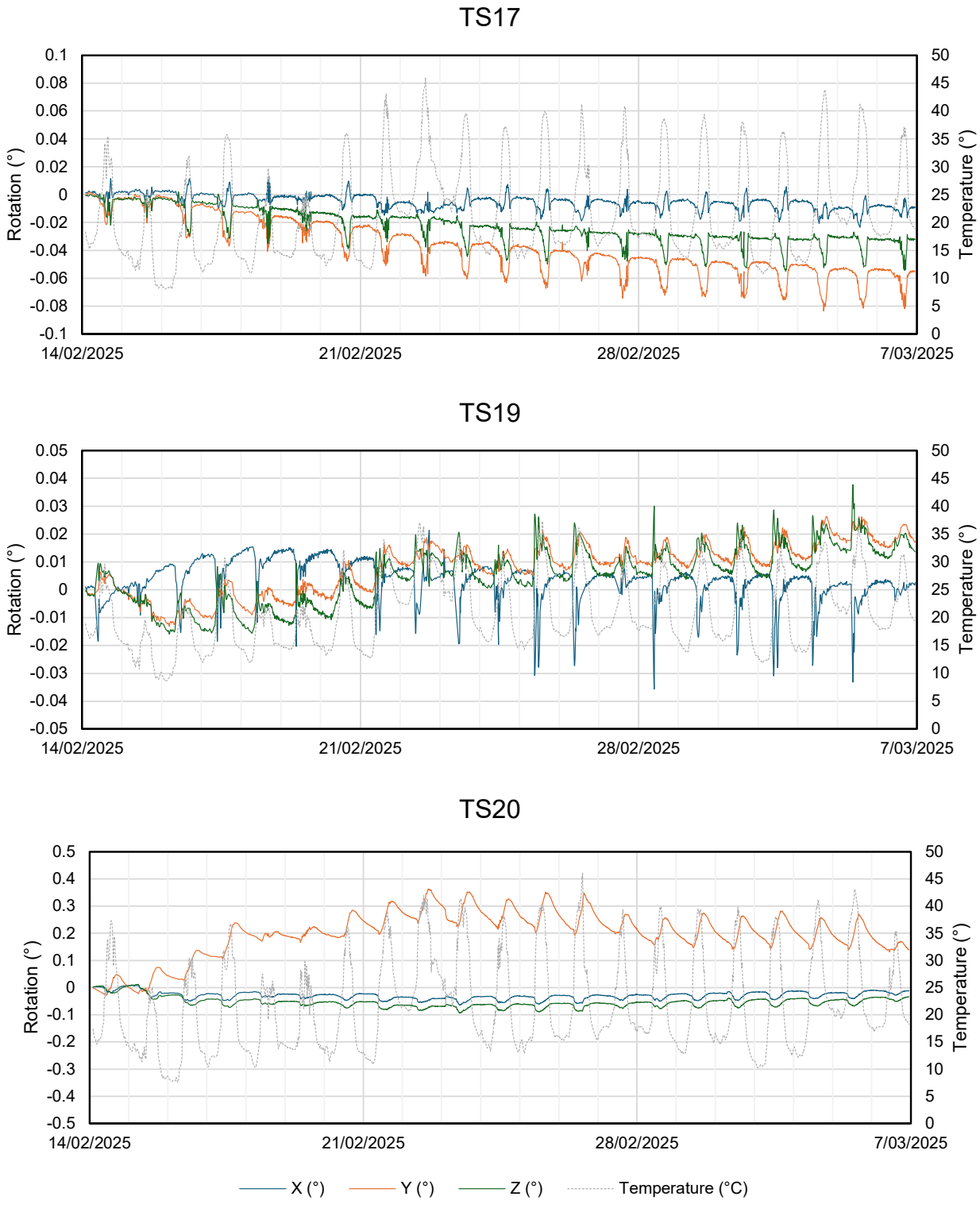
Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

PSM5665-052M	Figure F4



Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

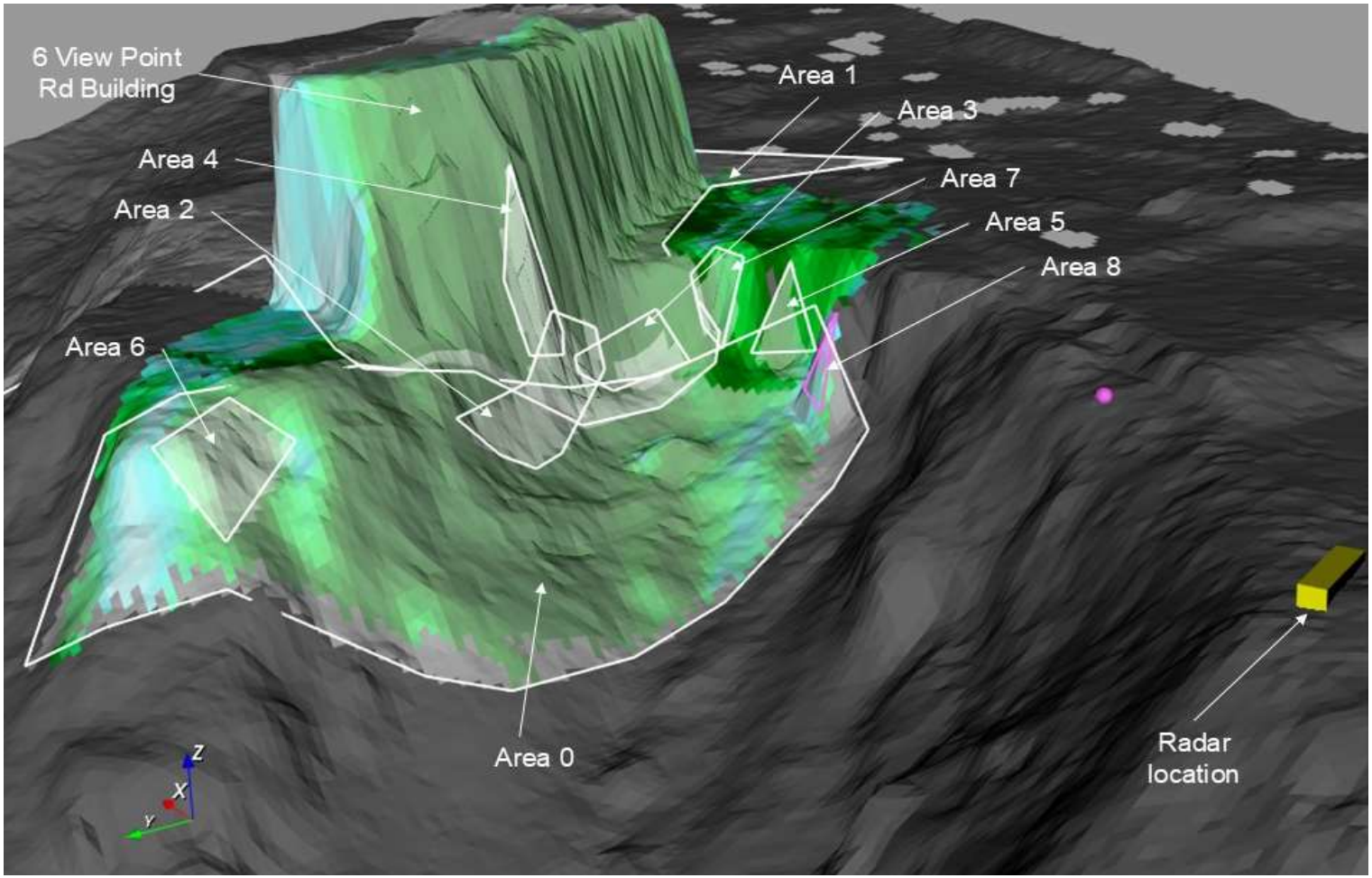
PSM5665-052M	Figure F5



Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 07 Mar 2025

PSM5665-052M	Figure F6

Appendix G
Radar monitoring plots



Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Radar - Monitoring Areas

PSM5665-052M	Figure G1

Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Radar - Monitoring Data
18 Feb 2025 to 6 Mar 2025

PSM5665-052M	Figure G2