

MEMORANDUM



Company:	Mornington Peninsula Shire Council
Attention:	Emily Harkin
Our Ref:	PSM5665-054M
From:	Andrew Wilson
Date:	20 March 2025

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**RE: MCCRAE LANDSLIDE INCIDENT
 DISPLACEMENT MONITORING UPDATE - 7 MARCH 2025 TO
 13 MARCH FEBRUARY 2025**

1. Introduction

This memo provides a summary of displacement monitoring data collected between 00:00 AM 7 March and 11:59 PM 13 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)	Issued 12/03/2025
7 March 2025 to 13 March 2025	PSM5665-054M (M3)	-

2. Monitoring System updates

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

- GPS03 recommenced transmitting data on 7 March 2025. Cellular reception in this area is poor, hence data transmission is currently intermittent. An upgrade of the antenna to mitigate poor reception is scheduled in the next one to two weeks.
- GPS05 and GPS06 were installed on 7 March 2025.
- GPS05 and GPS06 were activated on 10 March 2025.

3. Discussion

3.1 Displacement Monitoring

We note the following:

- Regarding GPS:
 - GPS01, GPS02, GPS03 and GPS04 instruments show small amounts of movement (less than 5 mm), Appendix A to Appendix B. Previously reported elevated measurements (refer M2) have returned to within the stated error of the instruments (+/- 5 mm).
 - GPS05 and GPS06 show 5 mm and 6 mm of total movement respectively. They currently exceed 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 for all instruments 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.
- Regarding survey prisms:
 - All survey prisms (excluding S5P26, S6P34, S6P35, S6P36) show less than 2 mm of displacement since the baseline survey commenced, Appendix C to Appendix E. This is within the accuracy of the survey instrument and no conclusions regarding trends can be made at this time.
 - Survey Prism S5P26 shows 3 mm of displacement to the northeast. Expected slope movement at this location is to the north or northwest. It is likely measured displacement is survey inaccuracy rather than ground movement. This will be checked at the next survey.
 - Survey prisms S6P34, S6P35 and S6P36 all show the same 4 mm of displacement to the southeast. All three prisms are measured from the same resection (i.e. position). Therefore, the measured displacement is inferred to be a result of inaccuracy in survey setup, not ground movement. This will be checked on the next survey.
- 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.
 - Most tilt sensors are starting to display a steady day-to-day pattern of rotation. Typically, the range of tilt measurements is between -0.05° and 0.05° , with no trend of increasing rotation, Appendix F.
 - The following tilt sensors are showing a trend of increasing rotation:
 - TS02
 - TS06
 - TS08
 - TS12
 - TS17
 - TS19
 - TS20

- TS02 is located on the slopes above 14-16 View Point Rd. TS02 is showing an increase in rotation over the last two weeks. The magnitudes of tilts are currently low (0.02°). Survey prism S5P28 is co-located with TS02, however the prism is showing no movement. The sensitive nature of the tilt sensors may be detecting early signs of movement. However, as the magnitude of tilt is small and the survey prisms are not recording any movement the nature of the possible movement is not yet clear.
- TS06, TS08 and TS17 were previously reported (refer M1 & M2) as showing higher than typical rotation as well as an increasing trend of rotation. This trend has continued with further increases in rotation. All instruments are located near the eastern flank of the 2022 Landslide in an area of softened and wet ground. This area is highlighted in Inset 1. No survey prisms or GPS are located in this location, so the movement is not easily calibrated. These three results indicate that there could be ground movement occurring in this location.
- TS19 is located below the house at 22 View Point Rd and is showing a trend of increasing rotation over the last 2 weeks. The magnitudes of tilts are currently low (0.02°). Survey prism S5P25 is co-located with TS19, however the prism is showing no movement. The sensitive nature of the tilt sensors may be detecting early signs of movement. However, as the magnitude of tilt is small and the survey prisms are not recording movement greater than the survey accuracy, the nature of the possible movement is not yet clear.
- TS12, 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 recording higher than typical rotations, however the trend of rotation has steadied or reversed.
 - TS12 and TS20 in the first one to two weeks of monitoring both showed an increasing trend of rotation. Since the direction of rotation reversed and both instruments now show a trend of decreasing rotation in the current Monitoring Period.
 - GPS instruments and survey prisms at these locations (GPS02, S3P12, S3P13 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 be continuing.
- Regarding Radar Monitoring:
 - Continued small amounts of movement over the Monitoring Period (approximately 10 mm) was observed in Areas 8, Appendix G. The movement mechanisms are not fully understood nor is the ground model refined at this time. The movement at Area 8 is localised and occurring in over steepened material on very steep slopes.
 - Movement previously reported in Areas 3 and 6 (refer M2), has slowed and remained relatively steady over the Monitoring Period.
 - Note that Area 8, Appendix G, is located adjacent to Tilt Sensors TS20. Like TS20, the movement in Area 8 is fluctuating but showing a trend of continued movement.
 - The radar sensitivity of Area 8 is approximately 0.25, which means that movements detected by the radar may only represent 25% of the actual movement that is occurring. Over this Monitoring Period 10 mm of recorded movement is therefore equal to 40 mm of relative movement.
 - The combination of movement in the radar and tilt sensor support that movement is continuing in the rear scarp and flanks of the 2025 Landslide. The movement in Area 8 may represent surficial ravelling or may represent early stages of regressive slumping or sliding.



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: 27 March 2025
- Next issue of monitoring report: 31 March 2025.

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

Yours Sincerely

Irrelevant & Sensitive

ANDREW WILSON
ASSOCIATE GEOTECHNICAL ENGINEER

Irrelevant & Sensitive

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:

- CO-ORDINATE SYSTEM: GDA2020 LOCAL, MGA ZONE 55
- ELEVATION DATUM: DERIVED AHD (AUSGEOD2020)
- 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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INSTRUMENTATION AND MONITORING

LAYOUT PLAN

PSM5665-054M

FIGURE 1

Appendix A

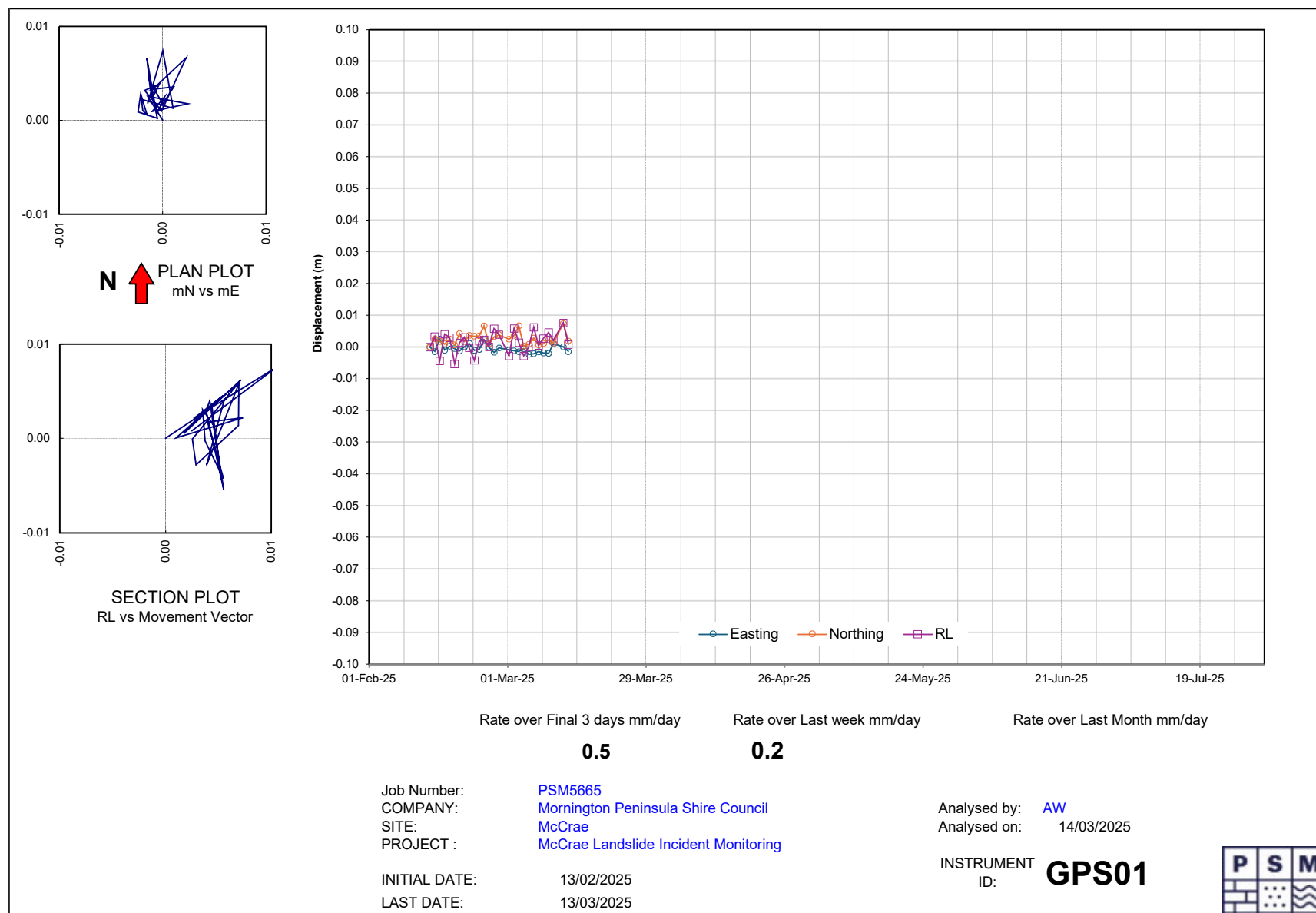
GPS monitoring summary

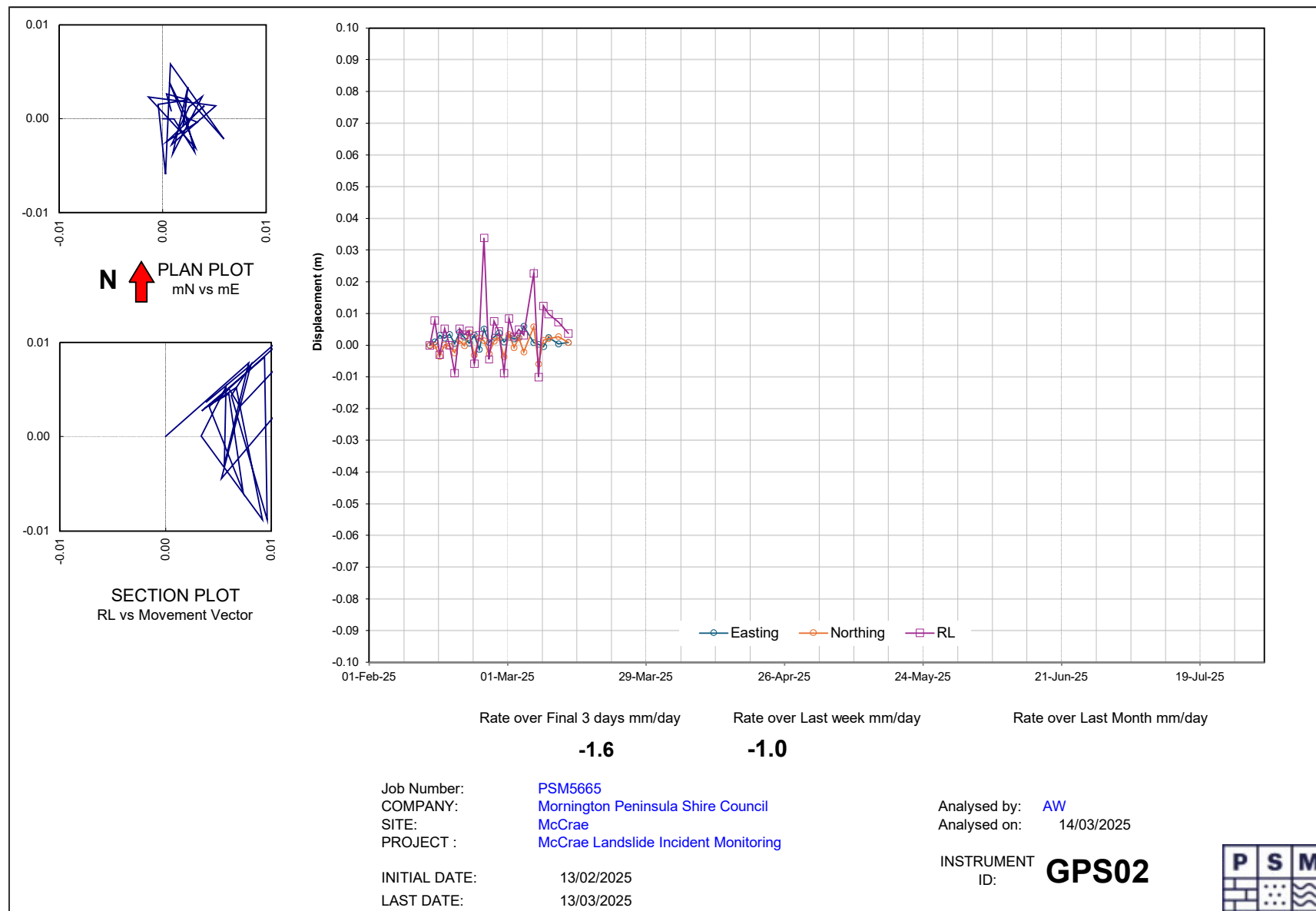
Table A1 – Summary of GPS monitoring results

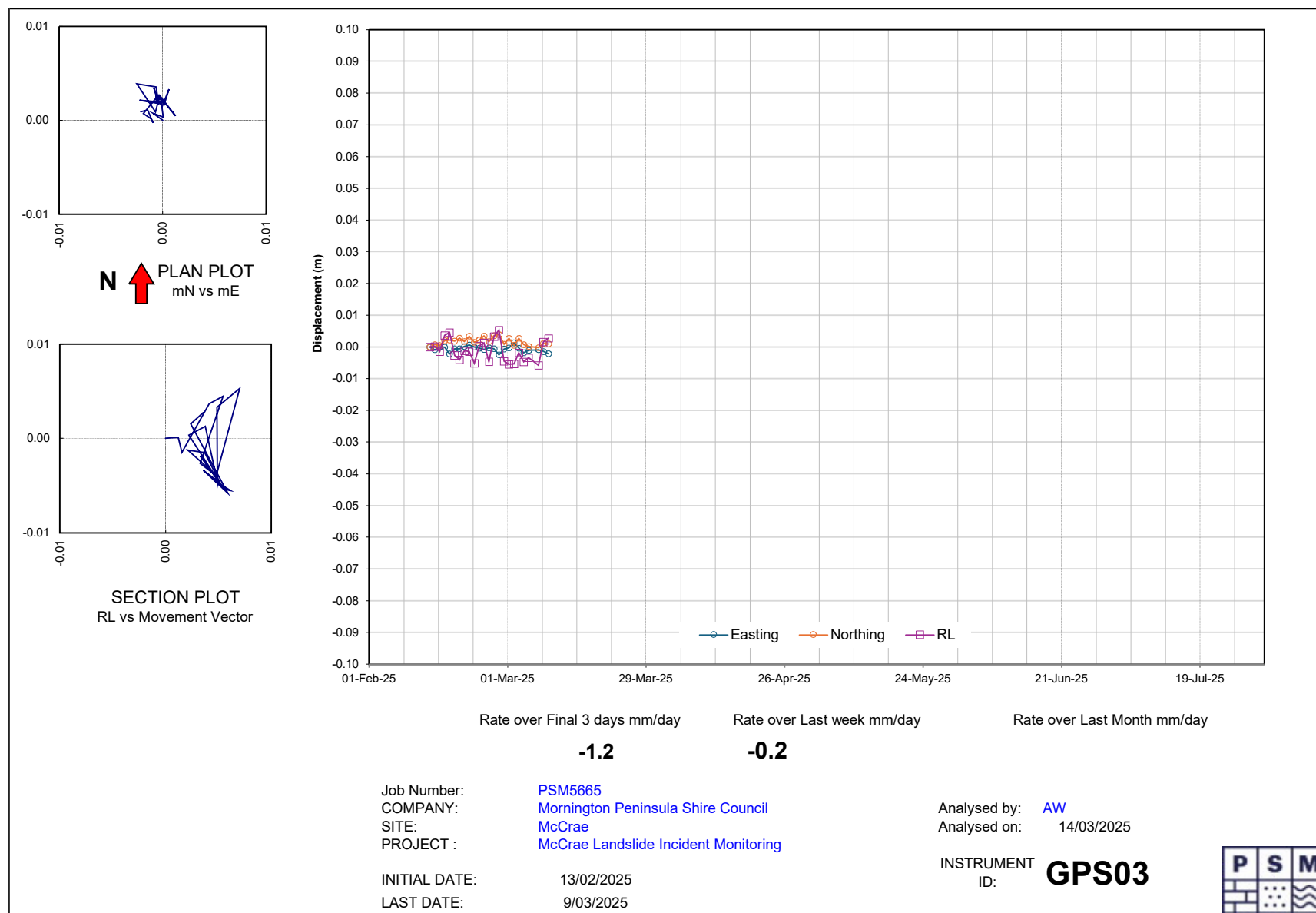
Prism ID	Start Date	Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
		Easting	Northing	RL	Last Date	Δ Easting	Δ Northing	Δ RL	Magnitude	Plunge (°) (up is +)	Azimuth (°)	last 3 readings	last 7 readings	last 30 readings
GPS01	13-Feb-25	-9.699	38.335	-2.995	13-Mar-25	-0.001	0.002	0.001	0.002	18.4	321.7	0.5	0.2	
GPS02	13-Feb-25	-21.621	20.245	-2.725	13-Mar-25	0.001	0.001	0.004	0.004	72.4	45.6	-1.6	-1.0	
GPS03	13-Feb-25	-41.863	21.761	-4.007	9-Mar-25	-0.002	0.001	0.003	0.004	49.4	293.4	-1.2	-0.2	
GPS04	13-Feb-25	-48.756	16.672	-4.334	13-Mar-25	0.001	0.001	-0.002	0.002	-61.0	37.0	-2.9	-0.2	
GPS05	10-Mar-25	-10.886	29.671	-0.704	13-Mar-25	-0.001	0.000	0.005	0.005	79.7	291.4	0.5		
GPS06	10-Mar-25	-13.232	19.477	-2.897	13-Mar-25	-0.002	-0.002	0.006	0.007	65.4	236.7	-1.1		
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.														

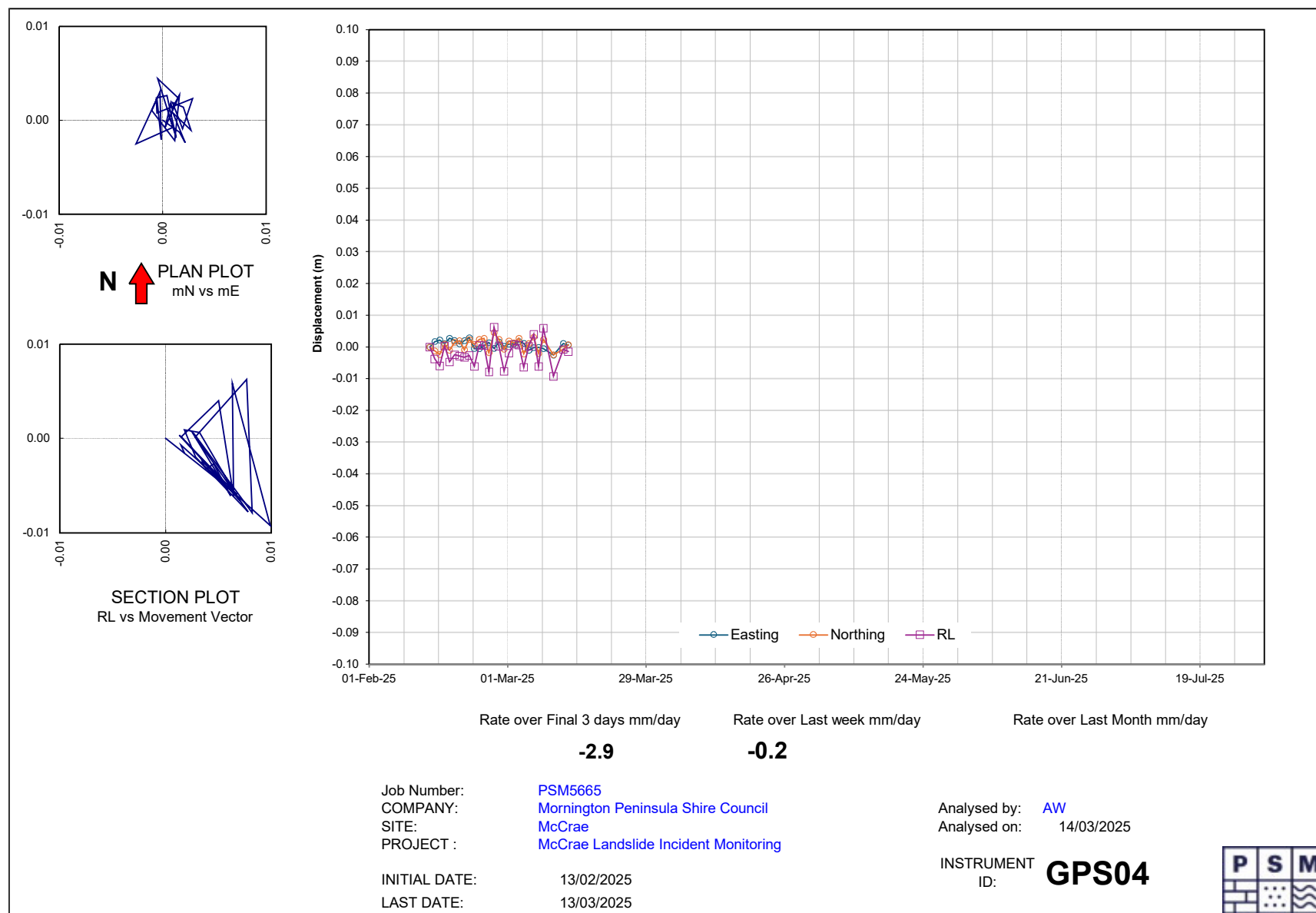
Appendix B

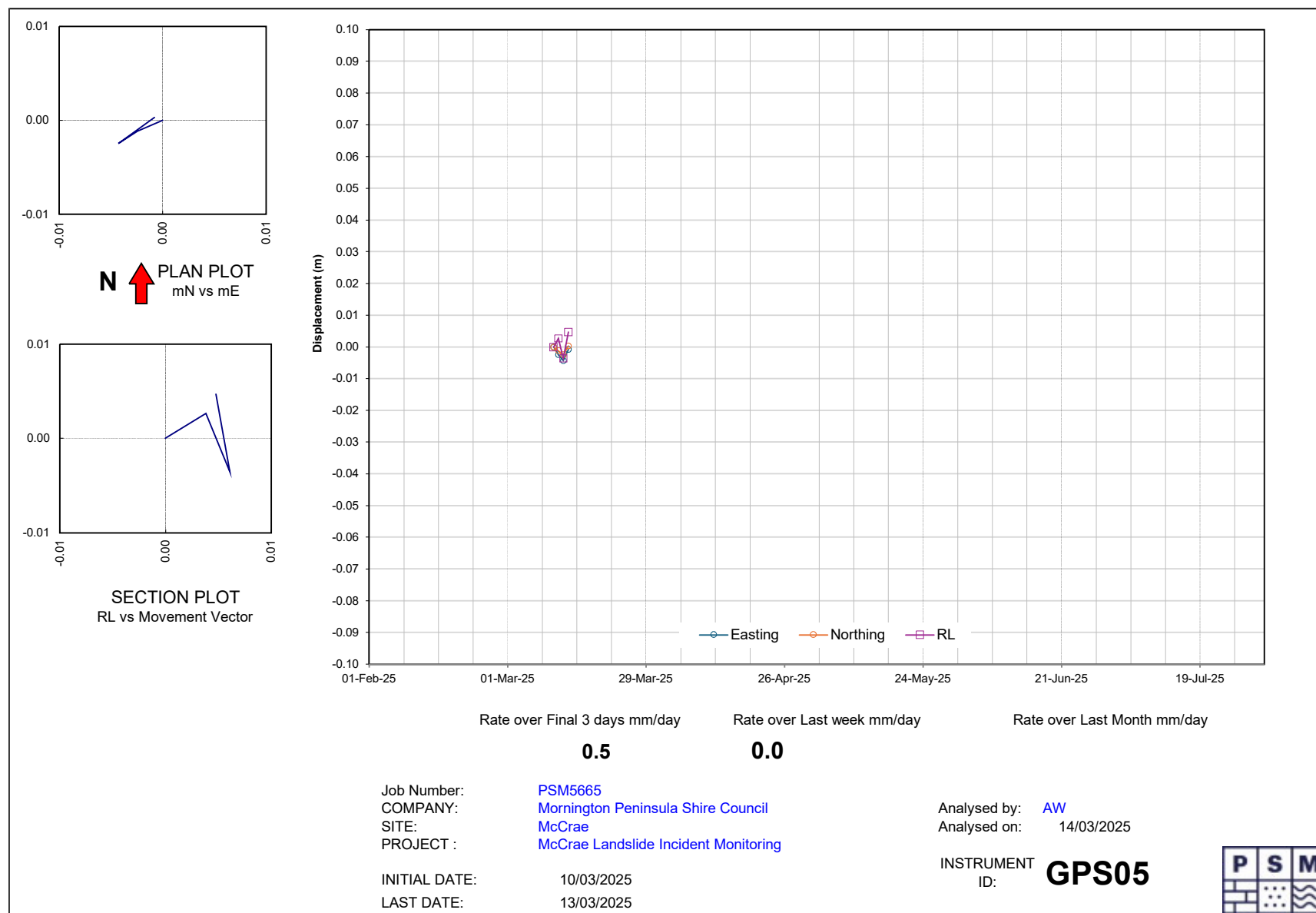
GPS monitoring plots

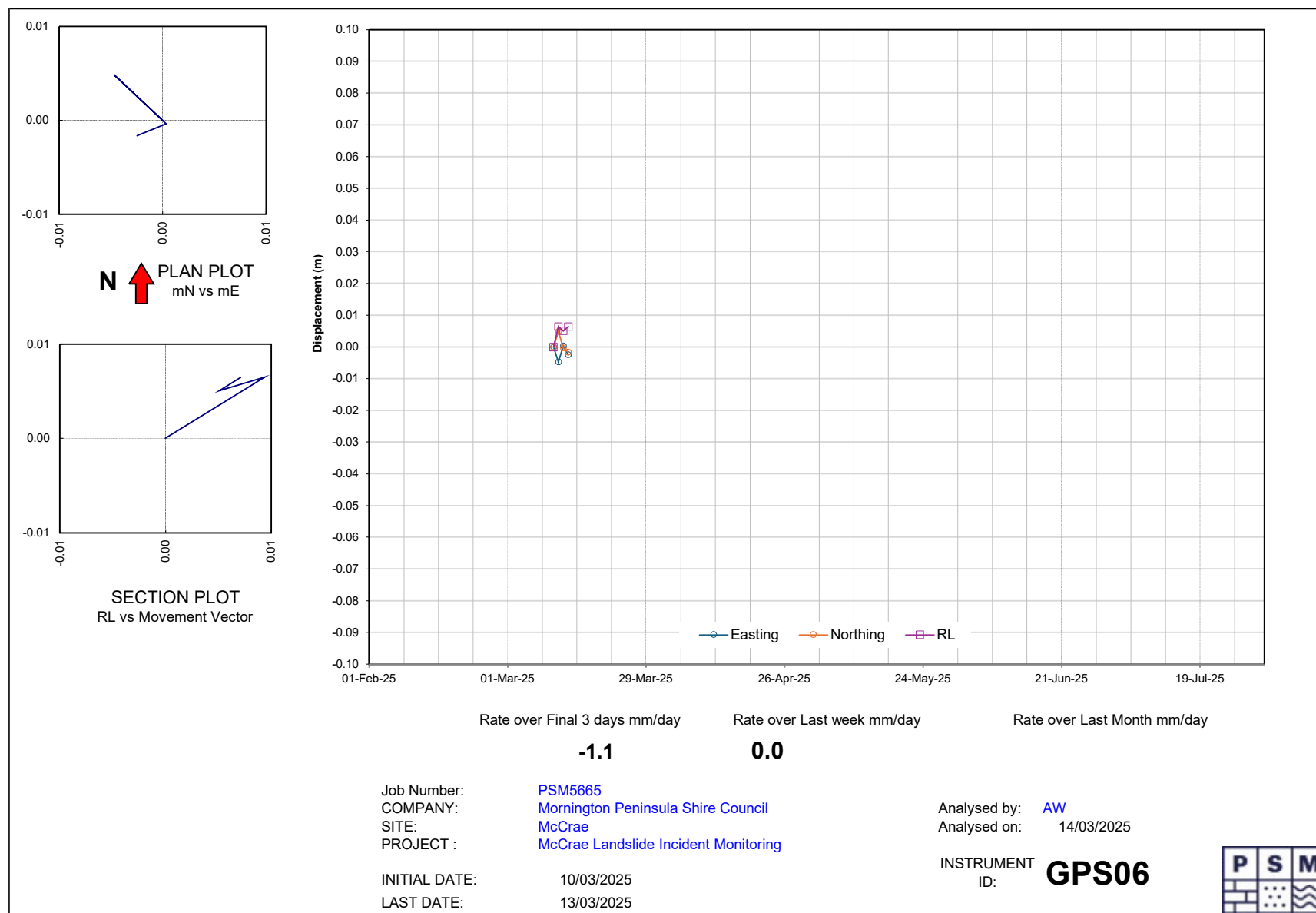












Appendix C

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
S1P01	13/03/2025	319578.864	5753744.879	23.928
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
S1P02	13/03/2025	319573.542	5753749.184	22.991
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
S1P03	13/03/2025	319573.872	5753743.898	26.410
S3P05	12/02/2025	319569.139	5753745.501	25.419
S3P05	20/02/2025	319569.138	5753745.501	25.420
S3P05	27/02/2025	319569.139	5753745.502	25.419
S3P05	6/03/2025	319569.139	5753745.501	25.420
S3P05	13/03/2025	319569.140	5753745.502	25.419
S3P06	12/02/2025	319569.429	5753748.276	23.723
S3P06	20/02/2025	319569.428	5753748.277	23.723
S3P06	27/02/2025	319569.428	5753748.276	23.723
S3P06	6/03/2025	319569.428	5753748.276	23.723
S3P06	13/03/2025	319569.429	5753748.276	23.723
S3P07	12/02/2025	319565.757	5753753.050	20.181
S3P07	20/02/2025	319565.755	5753753.050	20.181
S3P07	27/02/2025	319565.756	5753753.050	20.181
S3P07	6/03/2025	319565.756	5753753.050	20.181
S3P07	13/03/2025	319565.757	5753753.050	20.180
S3P08	12/02/2025	319558.404	5753748.044	20.321
S3P08	20/02/2025	319558.403	5753748.045	20.321
S3P08	27/02/2025	319558.404	5753748.044	20.322
S3P08	6/03/2025	319558.404	5753748.043	20.322
S3P08	13/03/2025	319558.405	5753748.042	20.321
S3P09	12/02/2025	319551.813	5753749.725	15.989
S3P09	20/02/2025	319551.812	5753749.725	15.989
S3P09	27/02/2025	319551.812	5753749.725	15.990
S3P09	6/03/2025	319551.812	5753749.724	15.990
S3P09	13/03/2025	319551.813	5753749.724	15.989
S3P10	12/02/2025	319554.096	5753743.851	20.636
S3P10	20/02/2025	319554.095	5753743.851	20.636
S3P10	27/02/2025	319554.095	5753743.850	20.636
S3P10	6/03/2025	319554.096	5753743.850	20.636
S3P10	13/03/2025	319554.098	5753743.850	20.636

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S3P11	12/02/2025	319550.572	5753743.992	17.689
S3P11	20/02/2025	319550.571	5753743.992	17.689
S3P11	27/02/2025	319550.571	5753743.992	17.689
S3P11	6/03/2025	319550.572	5753743.992	17.689
S3P11	13/03/2025	319550.574	5753743.992	17.689
S3P12	12/02/2025	319556.438	5753719.653	30.063
S3P12	20/02/2025	319556.436	5753719.654	30.064
S3P12	27/02/2025	319556.436	5753719.653	30.063
S3P12	6/03/2025	319556.436	5753719.653	30.064
S3P12	13/03/2025	319556.437	5753719.653	30.063
S3P13	12/02/2025	319553.897	5753718.704	30.233
S3P13	20/02/2025	319553.896	5753718.705	30.234
S3P13	27/02/2025	319553.896	5753718.705	30.234
S3P13	6/03/2025	319553.896	5753718.705	30.234
S3P13	13/03/2025	319553.897	5753718.705	30.234
S3P14	12/02/2025	319550.979	5753723.316	26.793
S3P14	20/02/2025	319550.977	5753723.316	26.792
S3P14	27/02/2025	319550.978	5753723.316	26.793
S3P14	6/03/2025	319550.978	5753723.316	26.793
S3P14	13/03/2025	319550.978	5753723.315	26.793
S3P15	12/02/2025	319553.059	5753713.284	34.077
S3P15	20/02/2025	319553.057	5753713.284	34.076
S3P15	27/02/2025	319553.058	5753713.284	34.077
S3P15	6/03/2025	319553.057	5753713.283	34.077
S3P15	13/03/2025	319553.059	5753713.283	34.077
S3P16	12/02/2025	319545.480	5753722.252	28.079
S3P16	20/02/2025	319545.479	5753722.253	28.079
S3P16	27/02/2025	319545.479	5753722.253	28.080
S3P16	6/03/2025	319545.480	5753722.253	28.080
S3P16	13/03/2025	319545.481	5753722.253	28.079
S3P17	12/02/2025	319537.244	5753739.894	15.611
S3P17	20/02/2025	319537.242	5753739.894	15.611
S3P17	27/02/2025	319537.243	5753739.894	15.611
S3P17	6/03/2025	319537.243	5753739.894	15.611
S3P17	13/03/2025	319537.243	5753739.893	15.611
S3P18	12/02/2025	319535.799	5753733.932	20.813
S3P18	20/02/2025	319535.797	5753733.933	20.813
S3P18	27/02/2025	319535.797	5753733.933	20.813
S3P18	6/03/2025	319535.797	5753733.932	20.813
S3P18	13/03/2025	319535.799	5753733.932	20.812
S4P19	12/02/2025	319511.865	5753727.513	13.595
S4P19	20/02/2025	319511.865	5753727.513	13.596
S4P19	27/02/2025	319511.865	5753727.513	13.595
S4P19	6/03/2025	319511.865	5753727.513	13.595
S4P19	13/03/2025	319511.865	5753727.513	13.595
S4P20	12/02/2025	319513.882	5753723.875	16.356

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S4P20	20/02/2025	319513.882	5753723.874	16.358
S4P20	27/02/2025	319513.882	5753723.874	16.357
S4P20	6/03/2025	319513.882	5753723.874	16.357
S4P20	13/03/2025	319513.883	5753723.874	16.358
S4P21	12/02/2025	319516.370	5753719.111	20.014
S4P21	20/02/2025	319516.370	5753719.111	20.014
S4P21	27/02/2025	319516.370	5753719.110	20.014
S4P21	6/03/2025	319516.370	5753719.110	20.014
S4P21	13/03/2025	319516.370	5753719.110	20.014
S4P22	12/02/2025	319518.496	5753715.939	24.367
S4P22	20/02/2025	319518.496	5753715.939	24.368
S4P22	27/02/2025	319518.496	5753715.939	24.368
S4P22	6/03/2025	319518.496	5753715.938	24.368
S4P22	13/03/2025	319518.497	5753715.939	24.368
S4P23	12/02/2025	319519.446	5753711.080	28.188
S4P23	20/02/2025	319519.446	5753711.080	28.190
S4P23	27/02/2025	319519.446	5753711.080	28.189
S4P23	6/03/2025	319519.446	5753711.080	28.189
S4P23	13/03/2025	319519.446	5753711.080	28.189
S4P24	12/02/2025	319510.888	5753717.890	18.600
S4P24	20/02/2025	319510.888	5753717.889	18.602
S4P24	27/02/2025	319510.888	5753717.889	18.601
S4P24	6/03/2025	319510.888	5753717.889	18.601
S4P24	13/03/2025	319510.888	5753717.889	18.601
S5P25	12/02/2025	319464.805	5753661.480	20.644
S5P25	20/02/2025	319464.804	5753661.480	20.645
S5P25	27/02/2025	319464.803	5753661.481	20.644
S5P25	6/03/2025	319464.803	5753661.480	20.644
S5P25	13/03/2025	319464.804	5753661.480	20.643
S5P26	12/02/2025	319501.487	5753683.243	27.691
S5P26	20/02/2025	319501.485	5753683.243	27.691
S5P26	27/02/2025	319501.486	5753683.243	27.691
S5P26	6/03/2025	319501.488	5753683.244	27.691
S5P26	13/03/2025	319501.489	5753683.245	27.690
S5P27	12/02/2025	319500.816	5753699.365	22.092
S5P27	20/02/2025	319500.816	5753699.365	22.093
S5P27	27/02/2025	319500.816	5753699.365	22.092
S5P27	6/03/2025	319500.817	5753699.365	22.093
S5P27	13/03/2025	319500.817	5753699.365	22.092
S5P28	12/02/2025	319501.883	5753707.991	19.601
S5P28	20/02/2025	319501.883	5753707.991	19.602
S5P28	27/02/2025	319501.883	5753707.991	19.601
S5P28	6/03/2025	319501.883	5753707.991	19.602
S5P28	13/03/2025	319501.883	5753707.991	19.601
S5P29	12/02/2025	319510.670	5753705.418	26.674
S5P29	20/02/2025	319510.669	5753705.419	26.675

Prism ID	Survey Date	Easting (m)	Northing (m)	RL (m)
S5P29	27/02/2025	319510.669	5753705.420	26.674
S5P29	6/03/2025	319510.669	5753705.419	26.675
S5P29	13/03/2025	319510.669	5753705.420	26.674
S5P30	12/02/2025	319537.264	5753727.604	26.880
S5P30	20/02/2025	319537.264	5753727.604	26.881
S5P30	27/02/2025	319537.264	5753727.604	26.880
S5P30	6/03/2025	319537.264	5753727.604	26.881
S5P30	13/03/2025	319537.264	5753727.604	26.880
S6P34	20/02/2025	319458.812	5753656.785	19.662
S6P34	27/02/2025	319458.812	5753656.786	19.663
S6P34	6/03/2025	319458.812	5753656.786	19.663
S6P34	13/03/2025	319458.815	5753656.783	19.661
S6P35	20/02/2025	319457.955	5753658.070	18.866
S6P35	27/02/2025	319457.956	5753658.070	18.866
S6P35	6/03/2025	319457.957	5753658.070	18.866
S6P35	13/03/2025	319457.959	5753658.068	18.866
S6P36	27/02/2025	319460.138	5753656.446	25.933
S6P36	6/03/2025	319460.138	5753656.447	25.934
S6P36	13/03/2025	319460.141	5753656.444	25.933

Appendix D

Survey prism monitoring summary

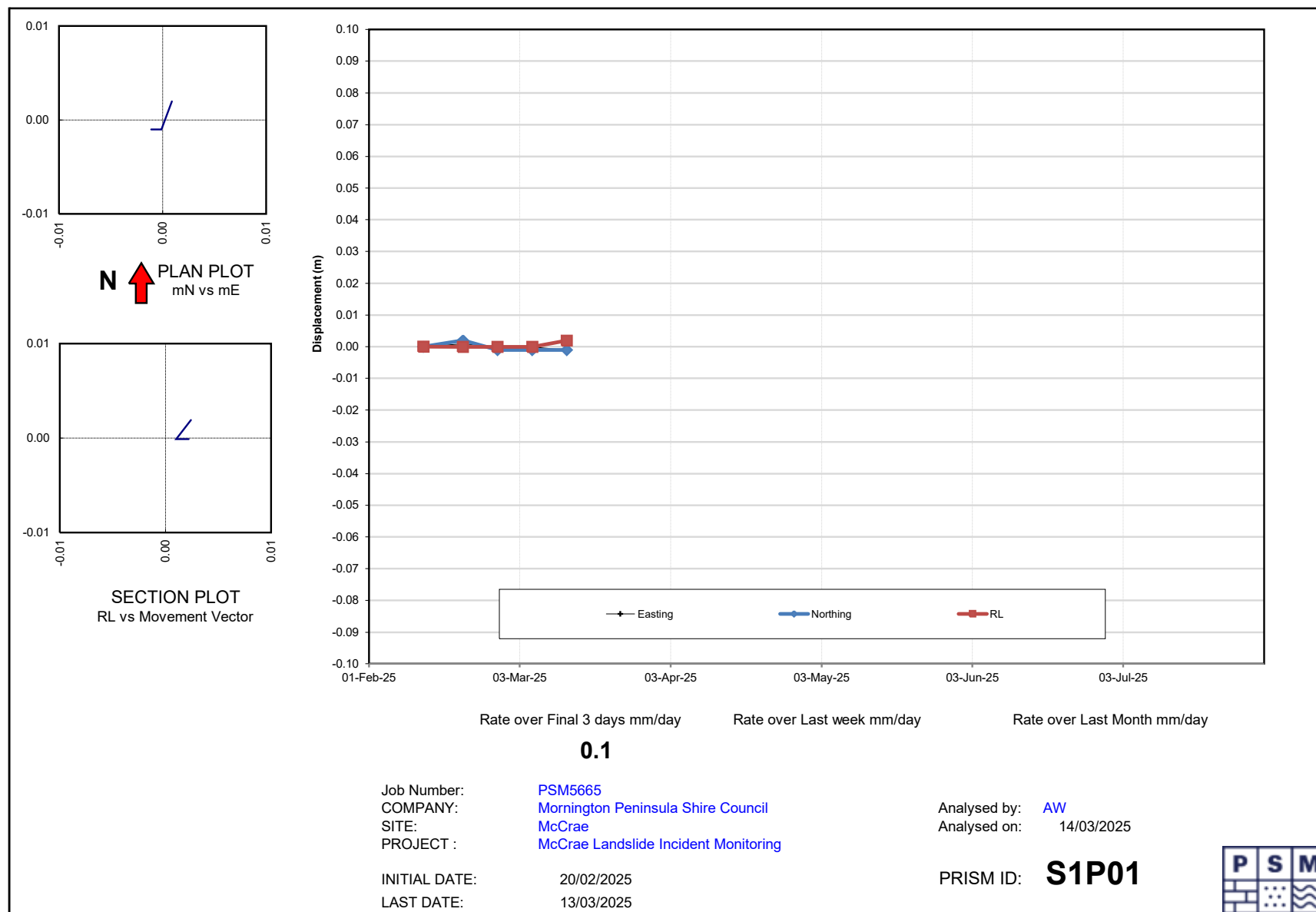
Table D1 – Survey monitoring summary

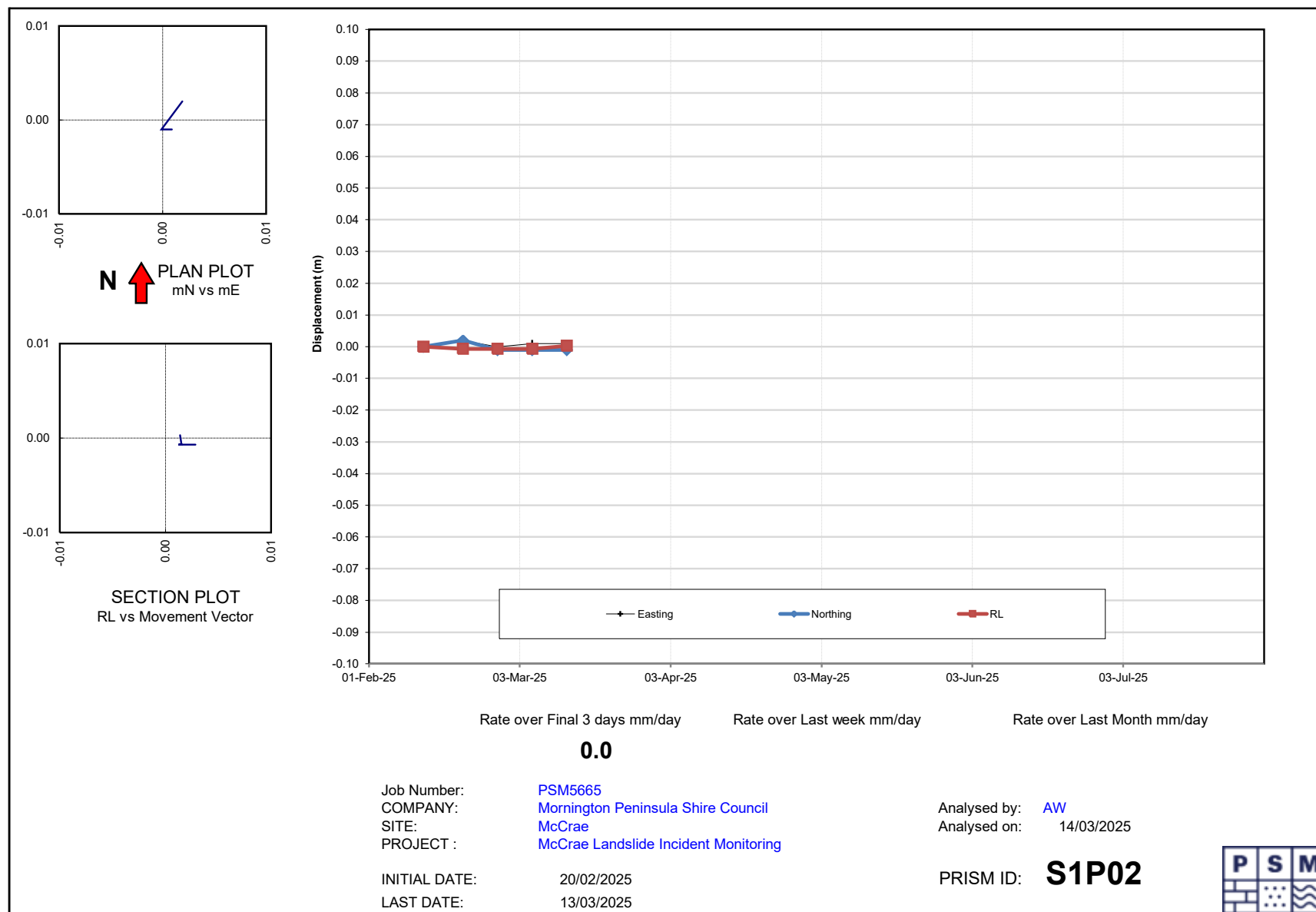
Prism ID	Start Date	Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
		Easting	Northing	RL	Last Date	Δ Easting	Δ Northing	Δ RL	Magnitude	Plunge (°) (up is +)	Azimuth (°)	last 3 readings	last 7 readings	last 30 readings
S1P01	12-Feb-25	319578.865	5753744.880	23.926	13-Mar-25	-0.001	-0.001	0.002	0.002	52.0	227.7	0.1		
S1P02	12-Feb-25	319573.541	5753749.185	22.991	13-Mar-25	0.001	-0.001	0.000	0.001	12.6	138.0	0.0		
S1P03	12-Feb-25	319573.873	5753743.899	26.409	13-Mar-25	-0.001	-0.001	0.001	0.002	23.1	232.4	0.0		
S3P05	12-Feb-25	319569.139	5753745.501	25.419	13-Mar-25	0.001	0.001	0.000	0.001	-4.3	42.0	0.0		
S3P06	12-Feb-25	319569.429	5753748.276	23.723	13-Mar-25	0.000	0.000	0.000	0.000	-14.0	90.0	0.0		
S3P07	12-Feb-25	319565.757	5753753.050	20.181	13-Mar-25	0.000	0.000	-0.001	0.001	-50.2	90.0	0.0		
S3P08	12-Feb-25	319558.404	5753748.044	20.321	13-Mar-25	0.001	-0.002	0.000	0.002	-9.3	145.0	0.1		
S3P09	12-Feb-25	319551.813	5753749.725	15.989	13-Mar-25	0.000	-0.001	0.000	0.001	-21.0	163.3	0.0		
S3P10	12-Feb-25	319554.096	5753743.851	20.636	13-Mar-25	0.002	-0.001	0.000	0.002	7.1	114.4	0.1		
S3P11	12-Feb-25	319550.572	5753743.992	17.689	13-Mar-25	0.002	0.000	0.000	0.002	14.7	90.0	0.1		
S3P12	12-Feb-25	319556.438	5753719.653	30.063	13-Mar-25	-0.001	0.000	0.000	0.001	21.8	270.0	-0.1		
S3P13	12-Feb-25	319553.897	5753718.704	30.233	13-Mar-25	0.000	0.001	0.001	0.001	35.0	0.0	0.0		
S3P14	12-Feb-25	319550.979	5753723.316	26.793	13-Mar-25	-0.001	-0.001	0.000	0.001	19.5	225.0	0.0		
S3P15	12-Feb-25	319553.059	5753713.284	34.077	13-Mar-25	0.000	-0.001	0.000	0.001	16.0	163.3	0.0		
S3P16	12-Feb-25	319545.480	5753722.252	28.079	13-Mar-25	0.001	0.001	0.000	0.001	0.0	45.0	0.0		
S3P17	12-Feb-25	319537.244	5753739.894	15.611	13-Mar-25	0.000	-0.001	0.000	0.001	19.7	206.6	0.0		
S3P18	12-Feb-25	319535.799	5753733.932	20.813	13-Mar-25	0.000	0.000	0.000	0.001	-78.7	90.0	-0.1		
S4P19	12-Feb-25	319511.865	5753727.513	13.595	13-Mar-25	0.000	0.000	0.000	0.000	71.6	270.0	0.0		
S4P20	12-Feb-25	319513.882	5753723.875	16.356	13-Mar-25	0.001	-0.001	0.002	0.002	52.7	145.0	0.1		
S4P21	12-Feb-25	319516.370	5753719.111	20.014	13-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	13-Mar-25	0.001	0.000	0.001	0.001	48.4	90.0	0.0		

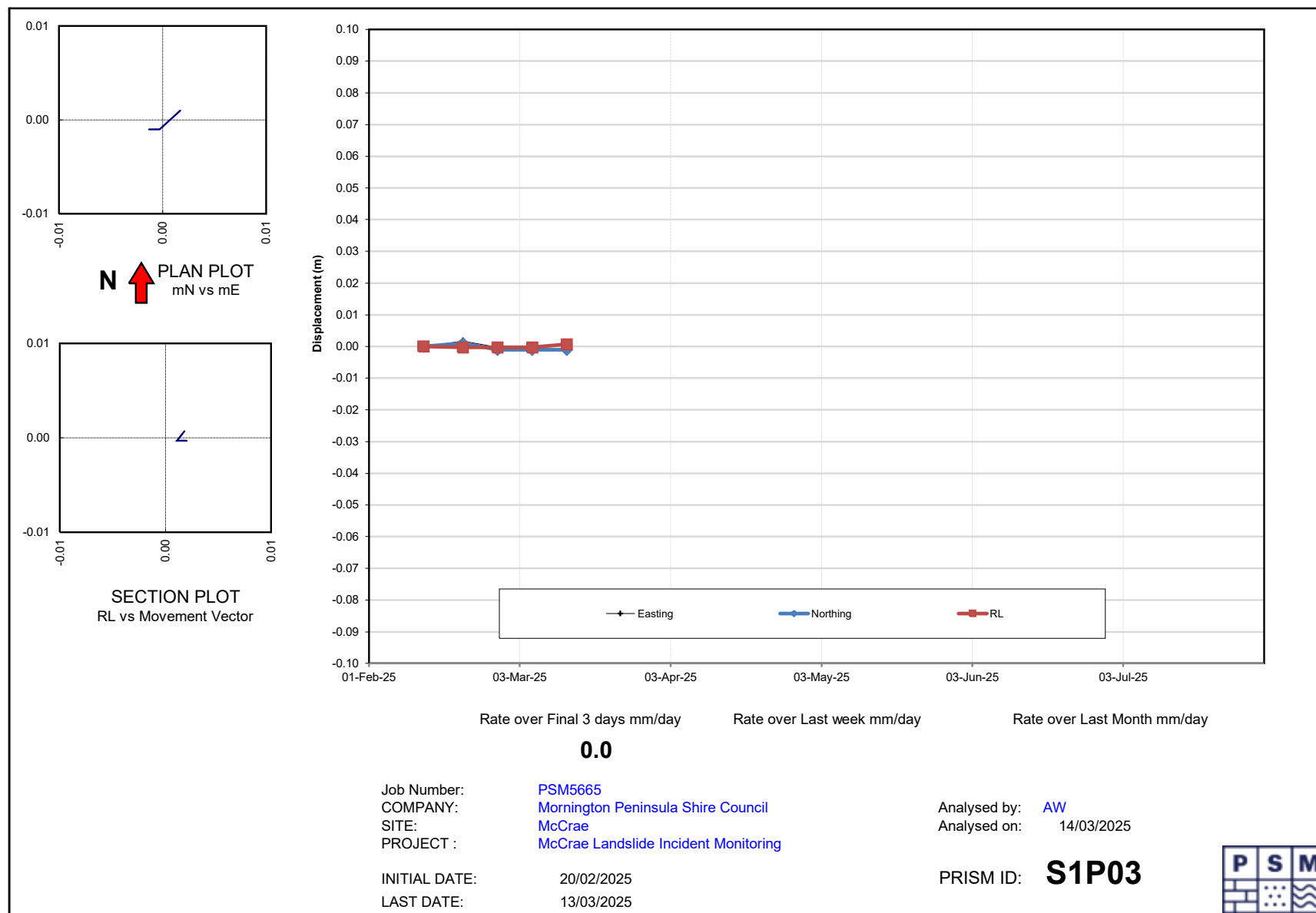
		Base (m)			Displacement (m)				Total Movement Vector			Average Rate (mm/day)		
S4P23	12-Feb-25	319519.446	5753711.080	28.188	13-Mar-25	0.000	0.000	0.001	0.001	90.0	0.0	0.0		
S4P24	12-Feb-25	319510.888	5753717.890	18.600	13-Mar-25	0.000	-0.001	0.001	0.001	42.0	180.0	0.0		
S5P25	12-Feb-25	319464.805	5753661.480	20.644	13-Mar-25	-0.001	0.000	-0.001	0.001	-50.2	270.0	-0.1		
S5P26	12-Feb-25	319501.487	5753683.243	27.691	13-Mar-25	0.003	0.002	0.000	0.003	-8.9	51.3	0.2		
S5P27	12-Feb-25	319500.816	5753699.365	22.092	13-Mar-25	0.001	0.000	0.000	0.001	20.6	90.0	0.0		
S5P28	12-Feb-25	319501.883	5753707.991	19.601	13-Mar-25	0.000	0.000	0.000	0.000	90.0	0.0	0.0		
S5P29	12-Feb-25	319510.670	5753705.418	26.674	13-Mar-25	-0.001	0.002	0.000	0.002	8.2	343.3	0.0		
S5P30	12-Feb-25	319537.264	5753727.604	26.880	13-Mar-25	0.000	0.000	0.000	0.000	63.4	270.0	0.0		
S6P34	20-Feb-25	319458.812	5753656.785	19.662	13-Mar-25	0.003	-0.002	-0.001	0.004	-15.6	120.5	0.2		
S6P35	20-Feb-25	319457.955	5753658.070	18.866	13-Mar-25	0.004	-0.002	0.000	0.004	-2.8	119.1	0.2		
S6P36	27-Feb-25	319460.138	5753656.446	25.933	13-Mar-25	0.003	-0.002	0.000	0.004	4.9	124.6	0.3		

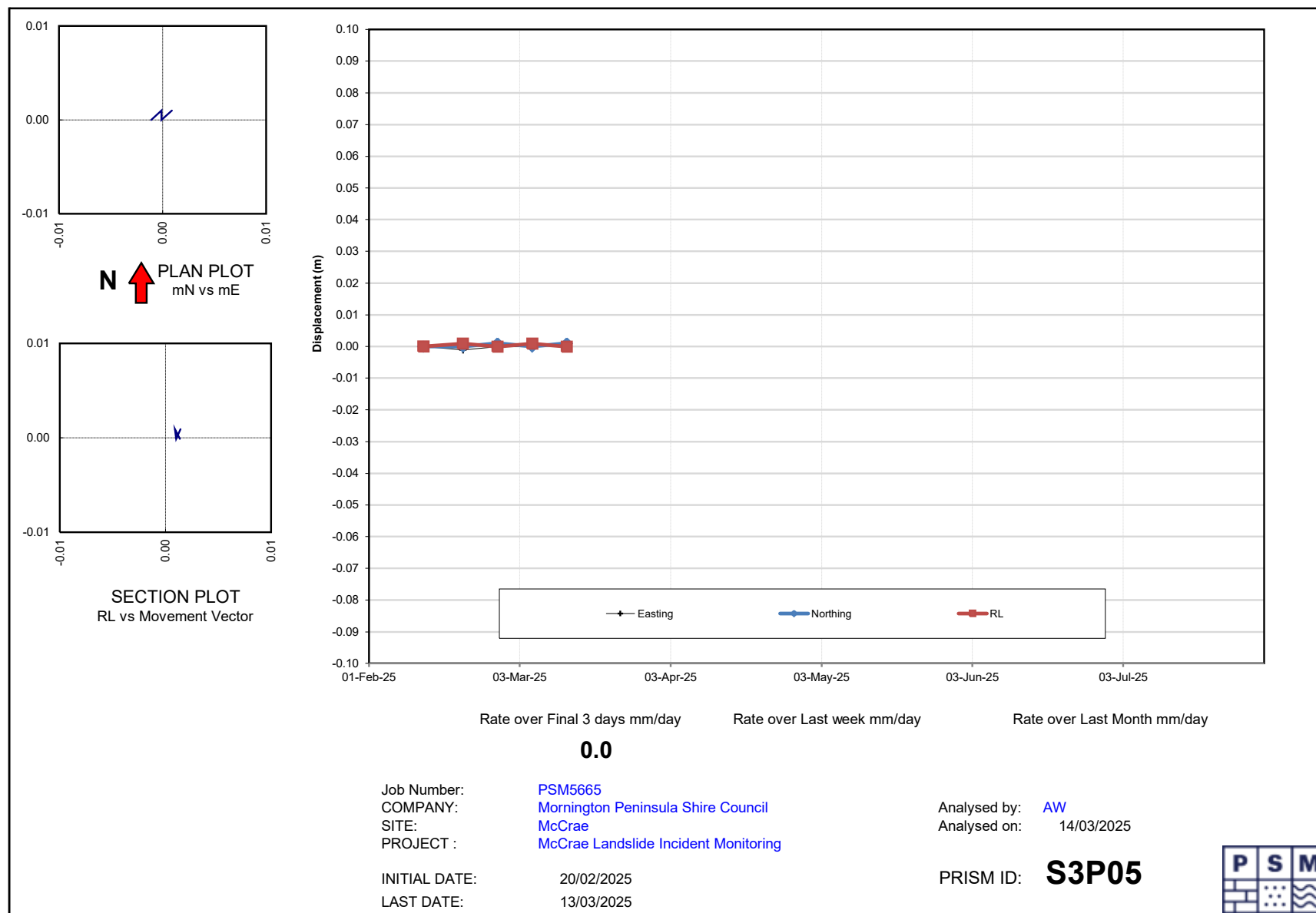
Appendix E

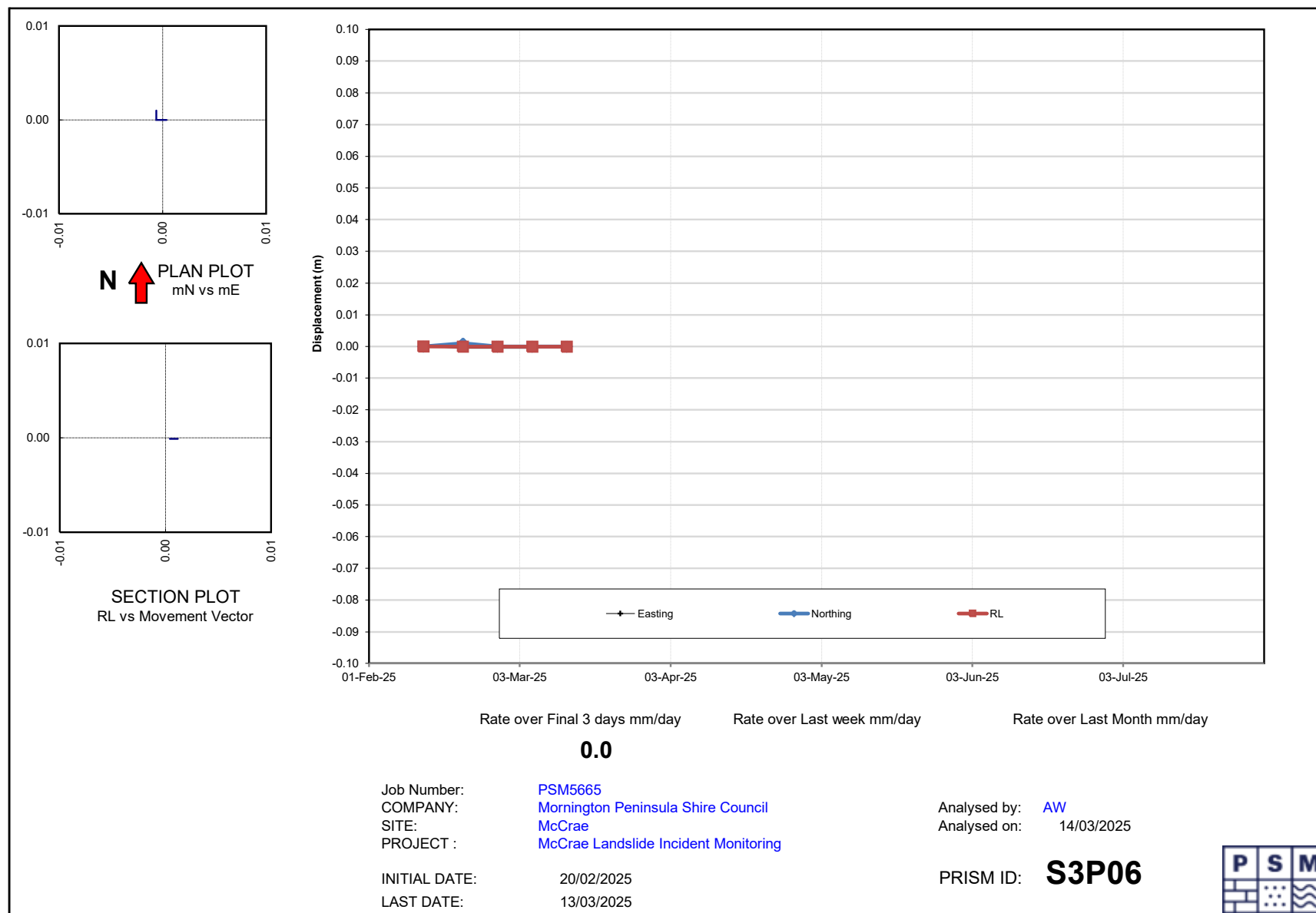
Survey prism monitoring plots

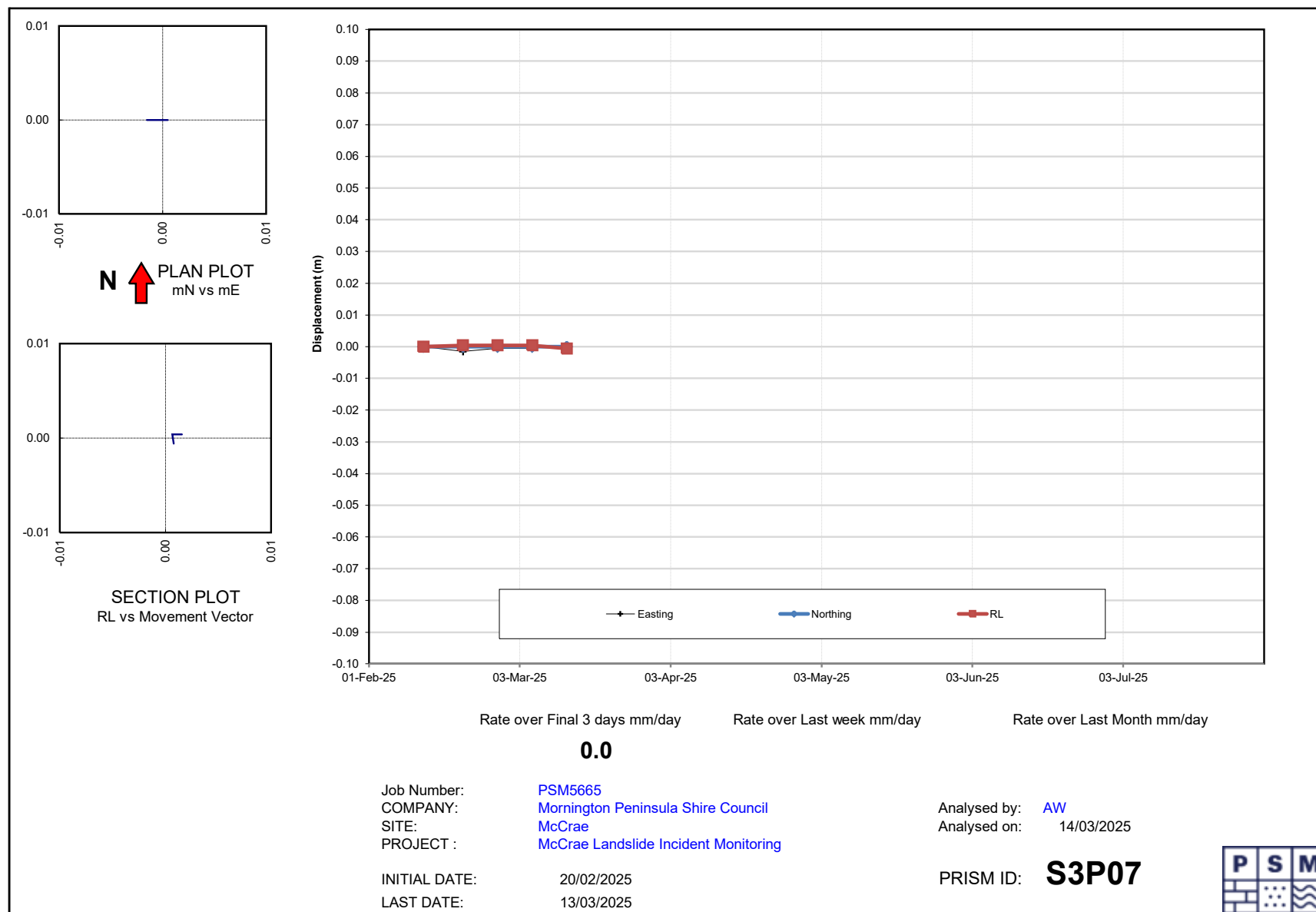


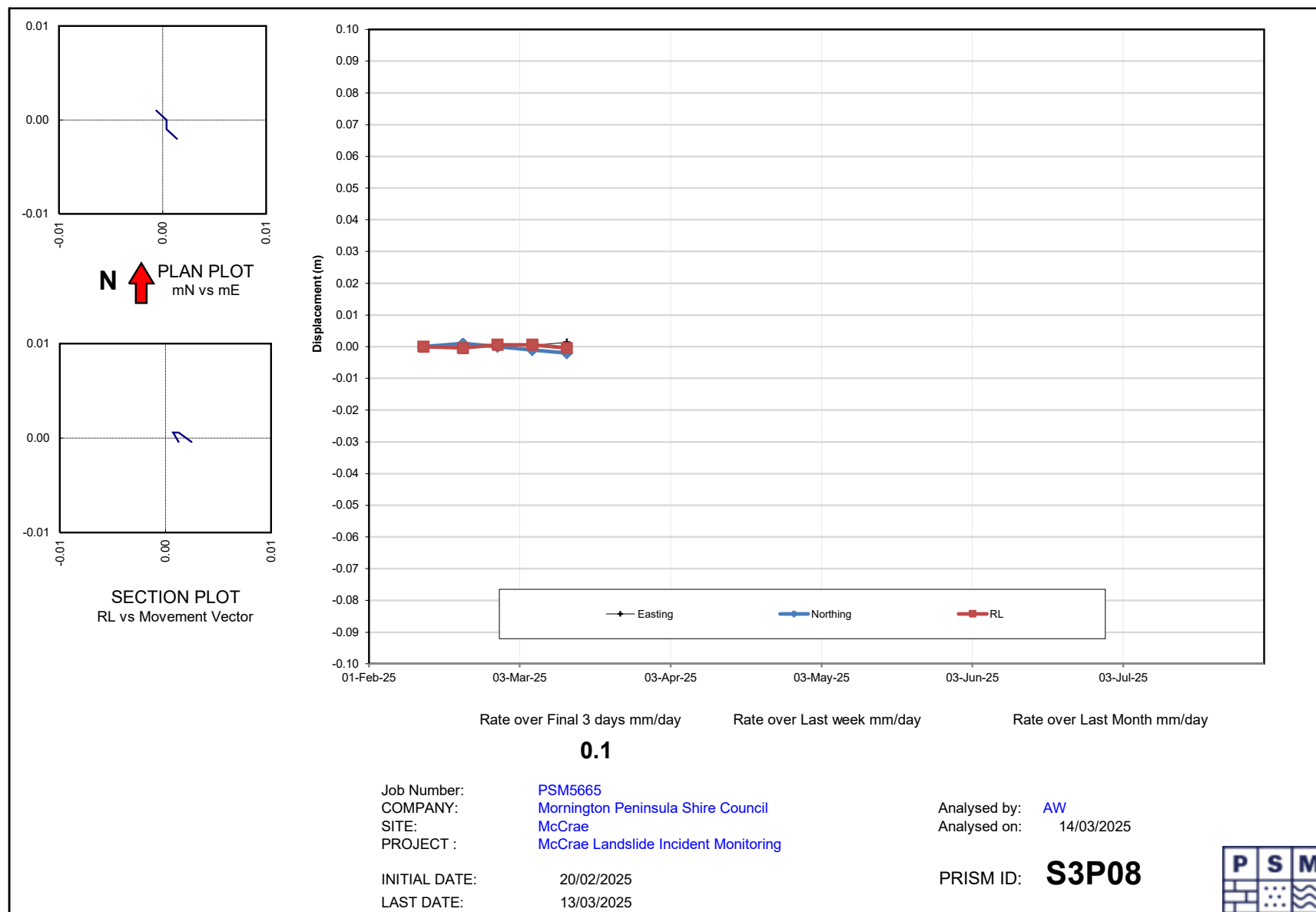


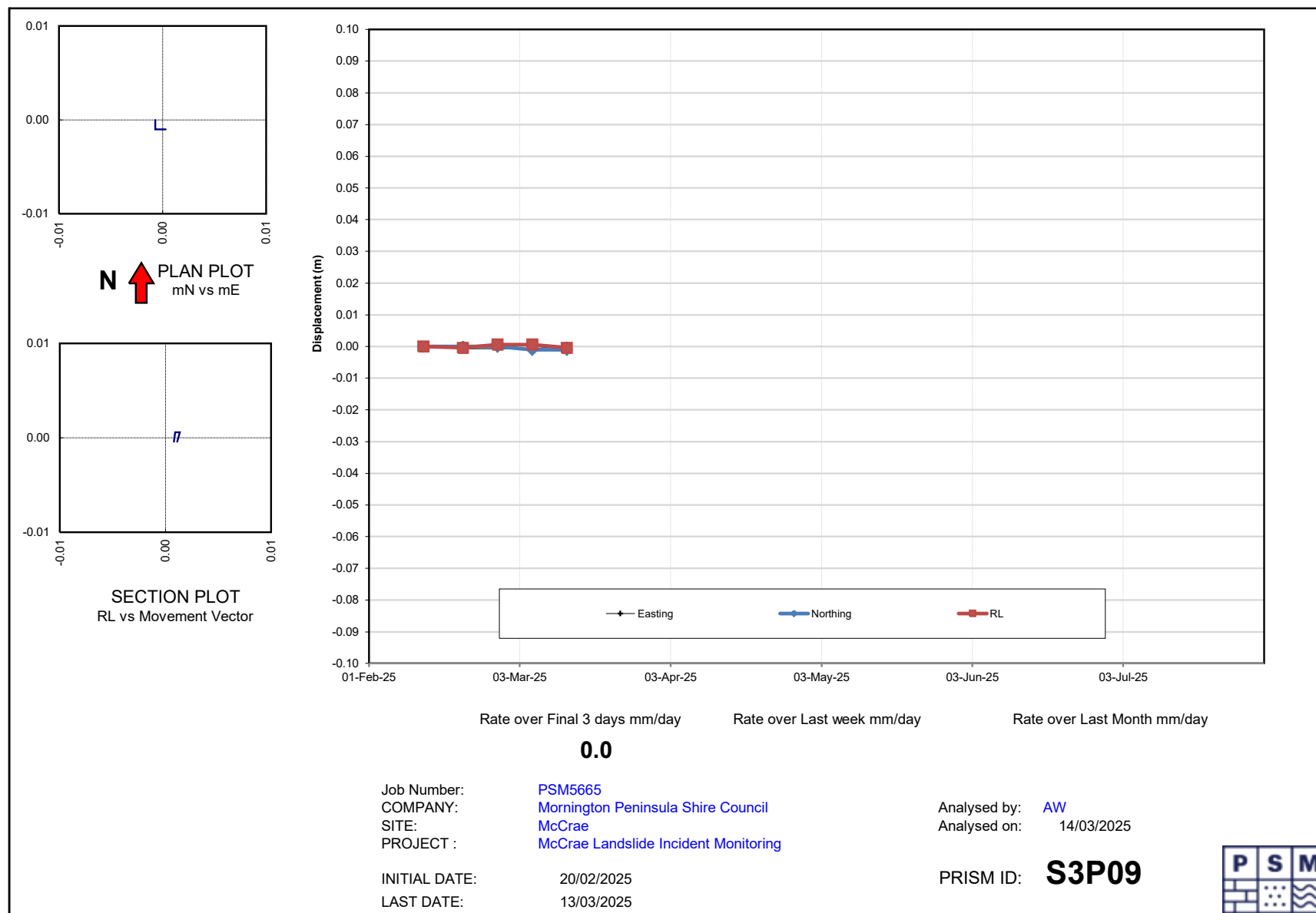


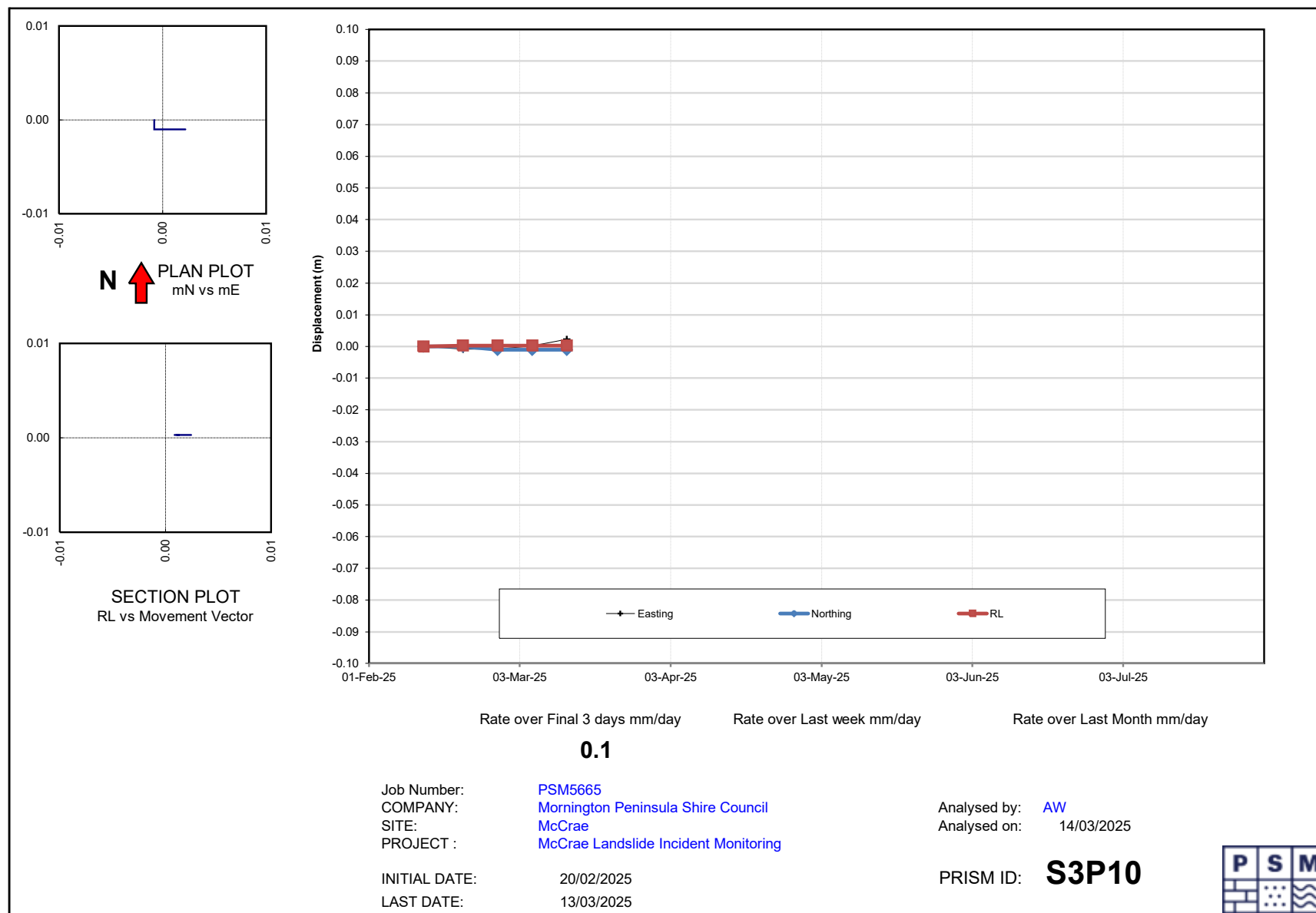


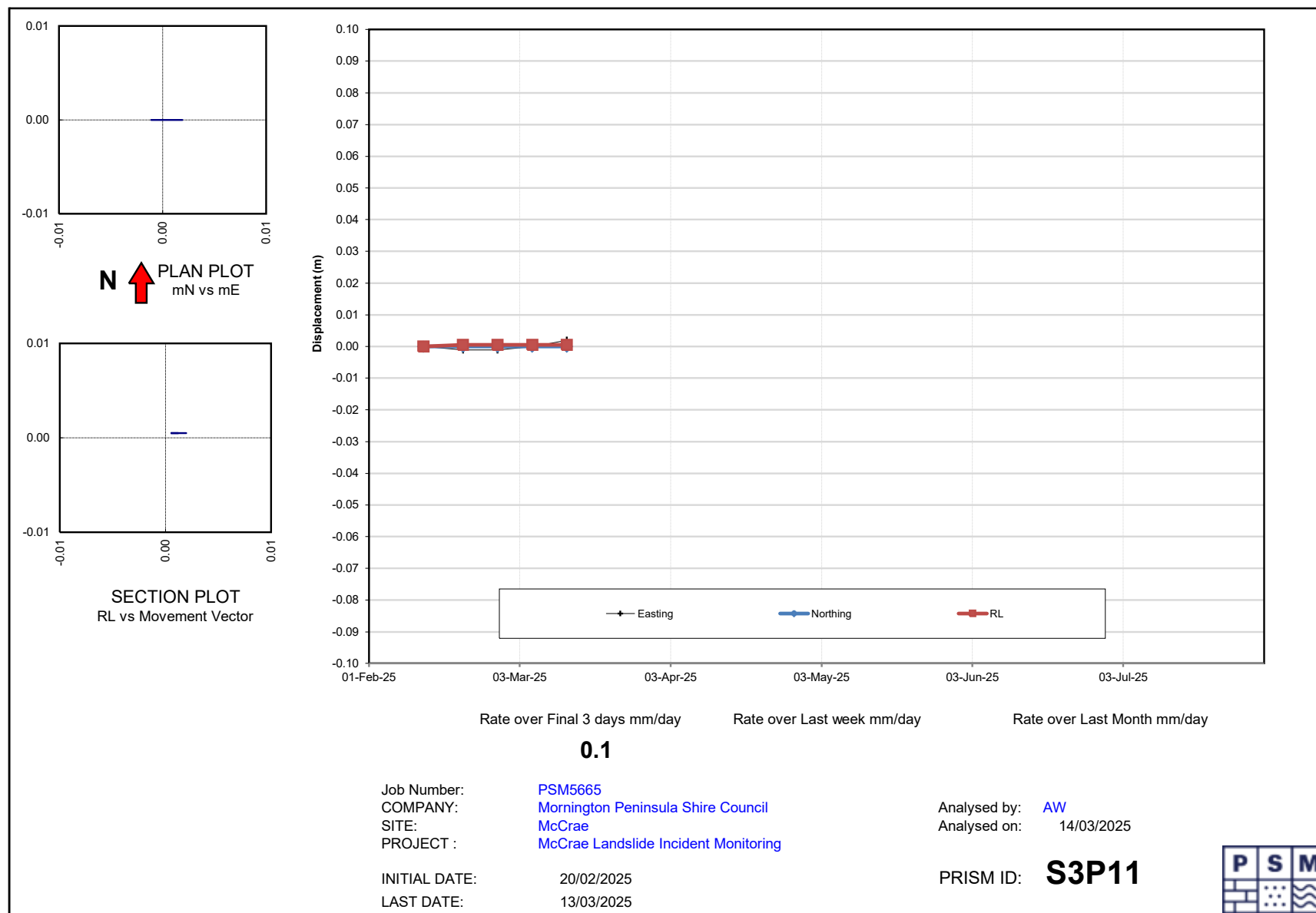


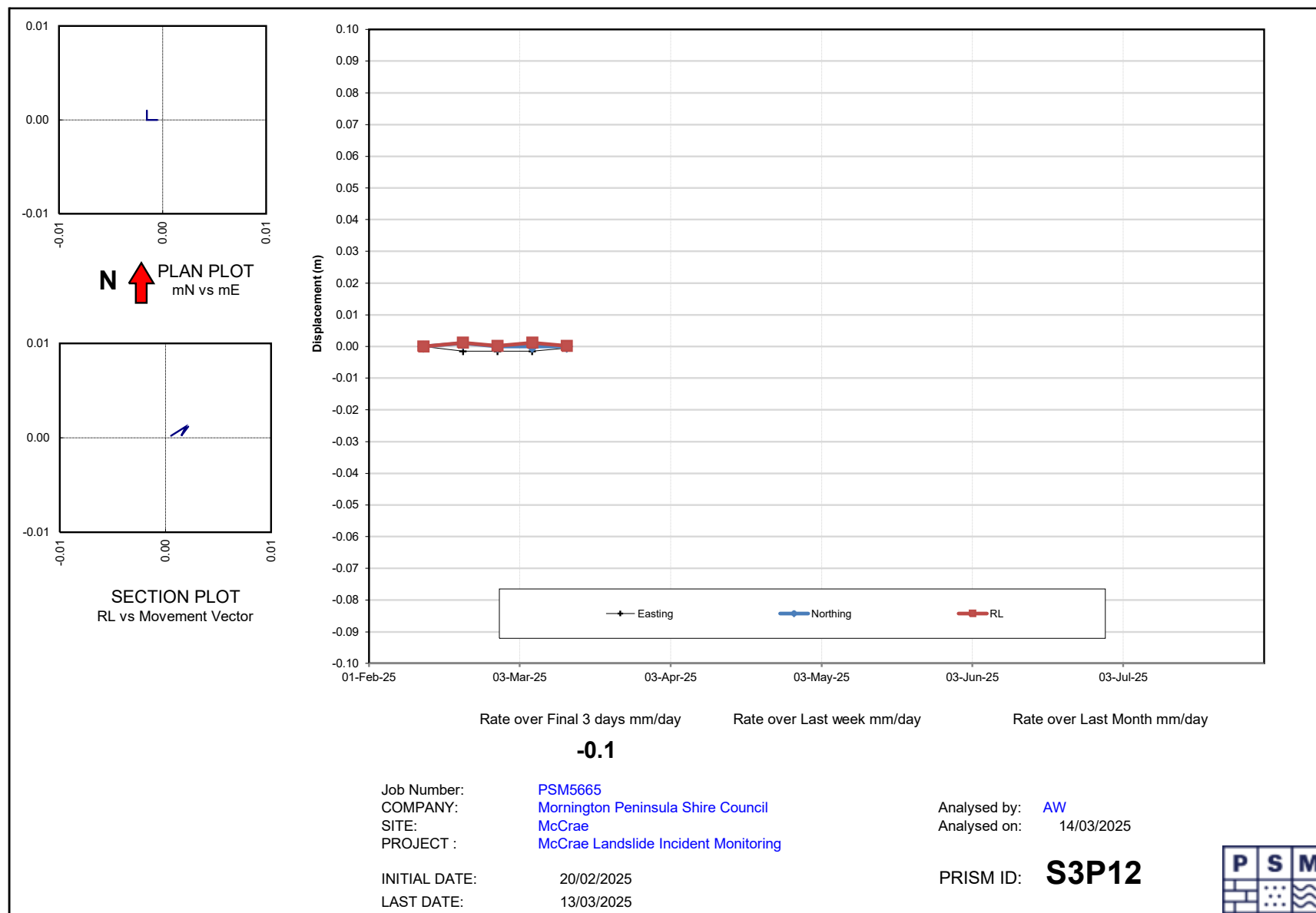


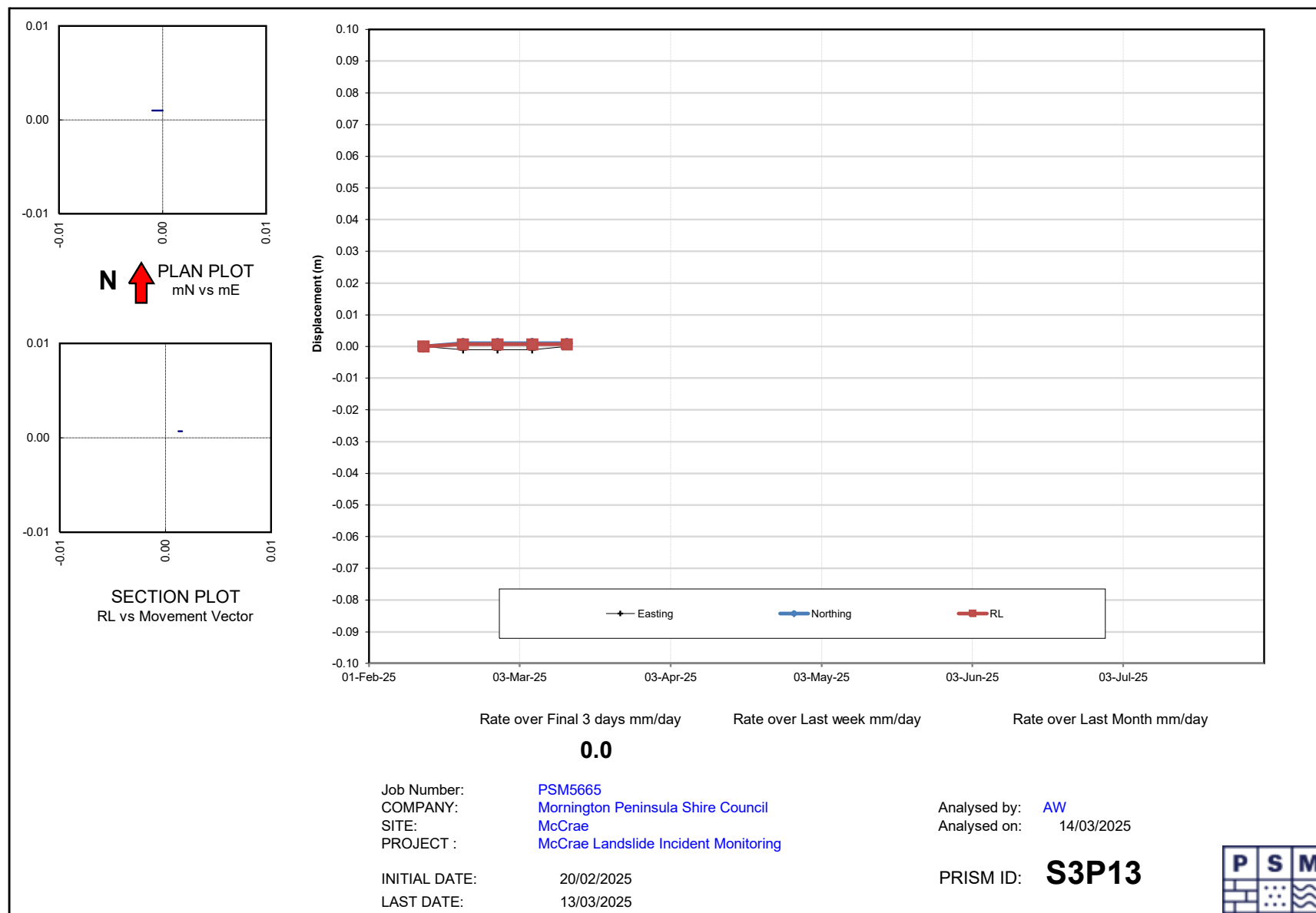


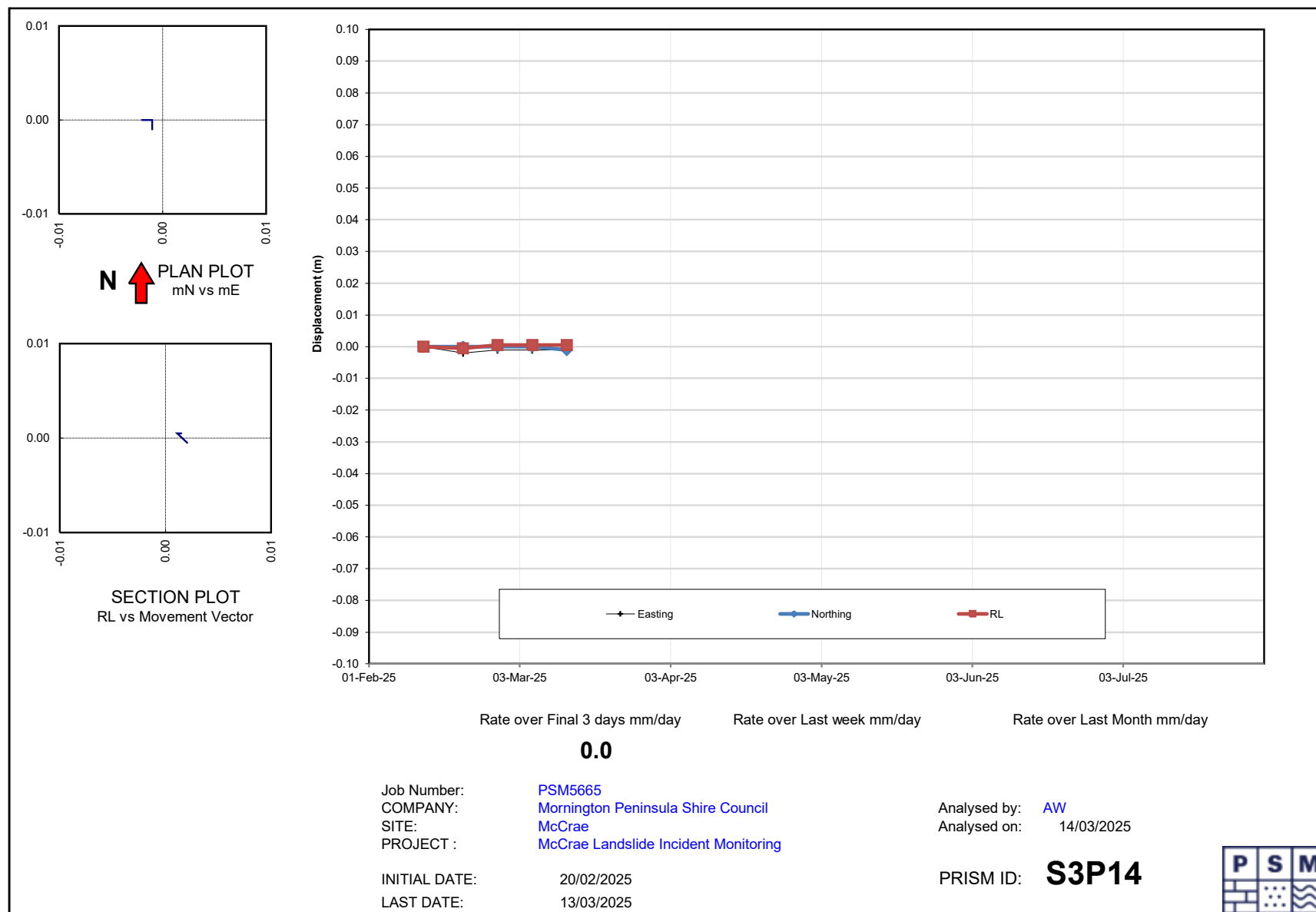


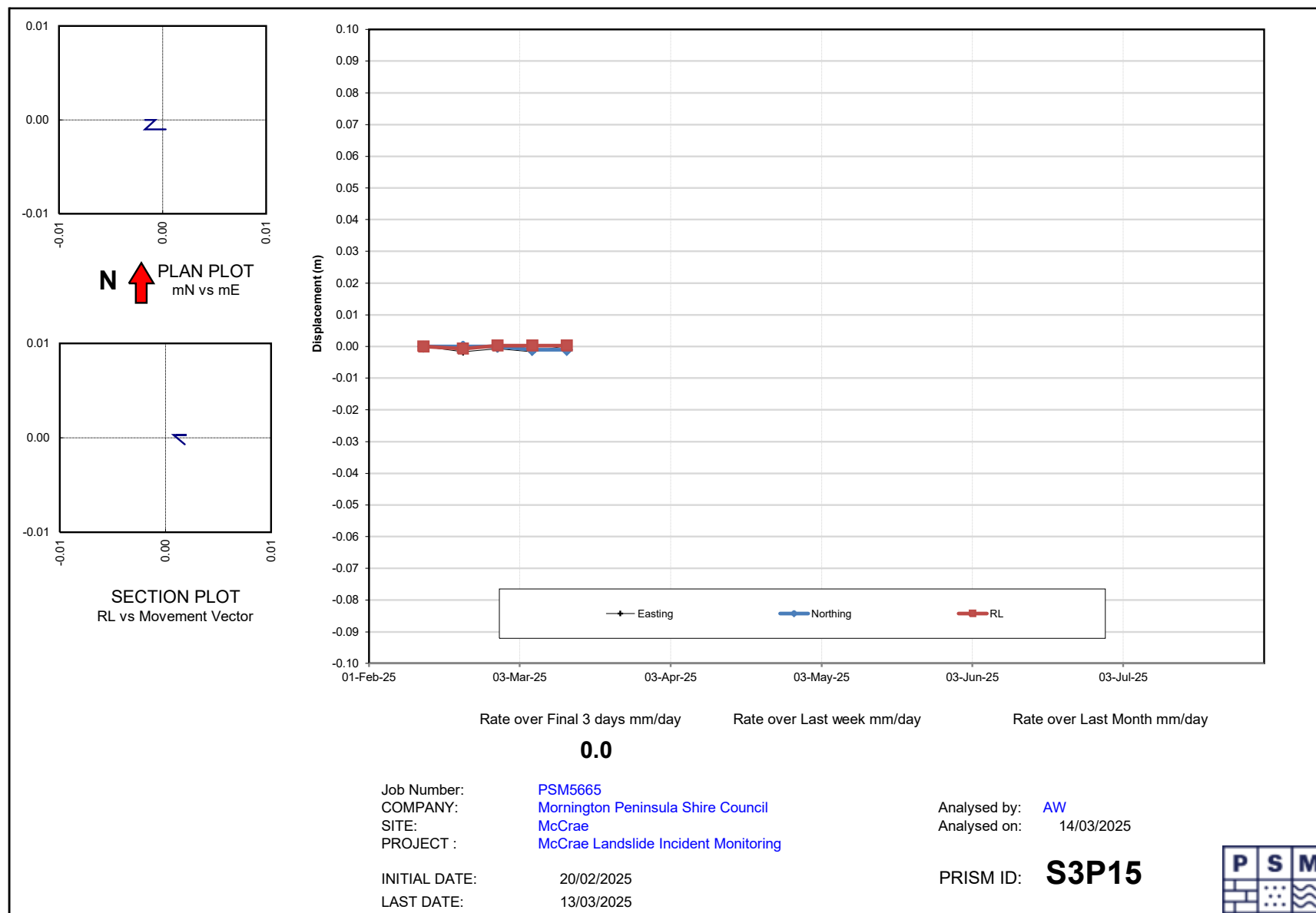


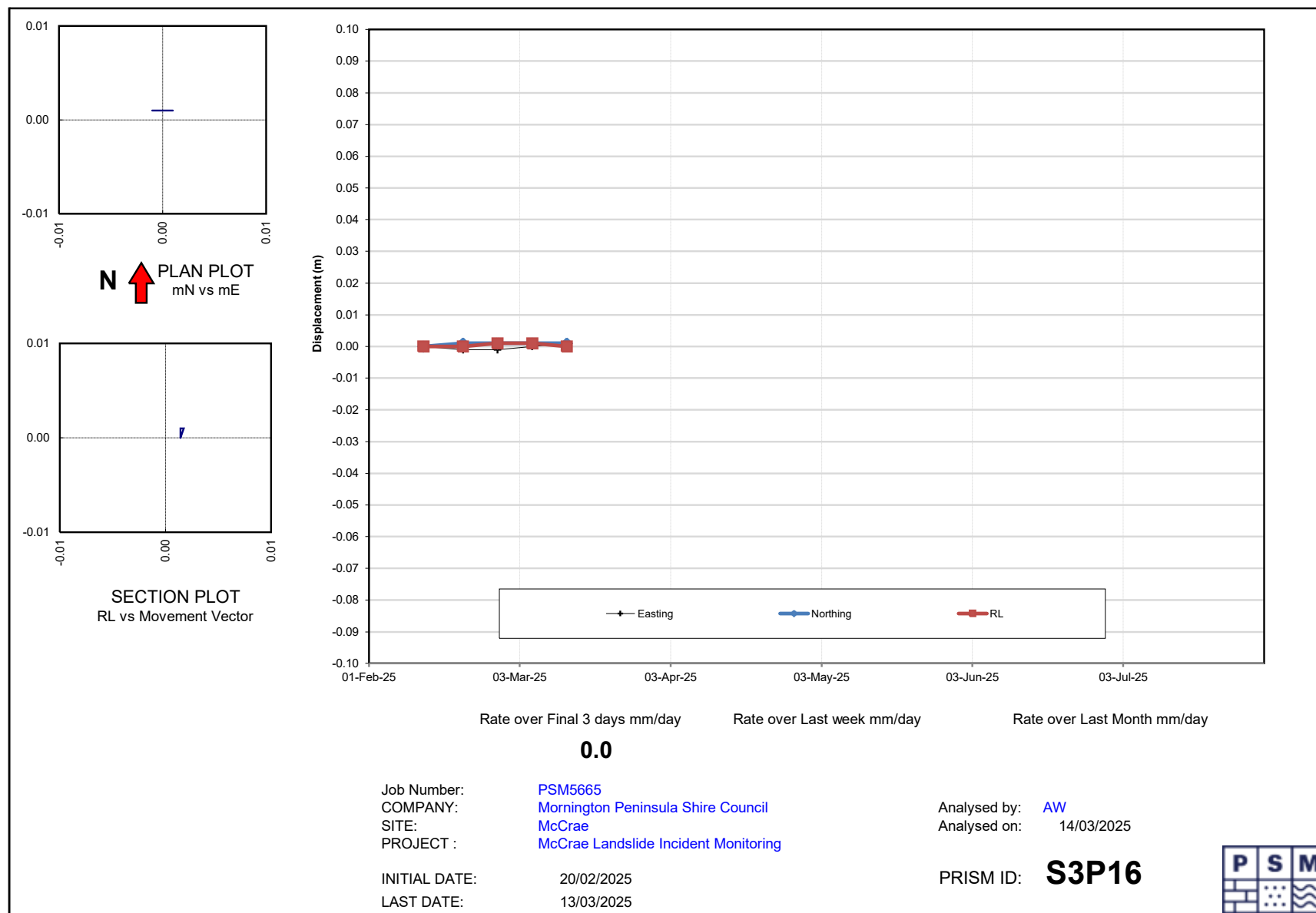


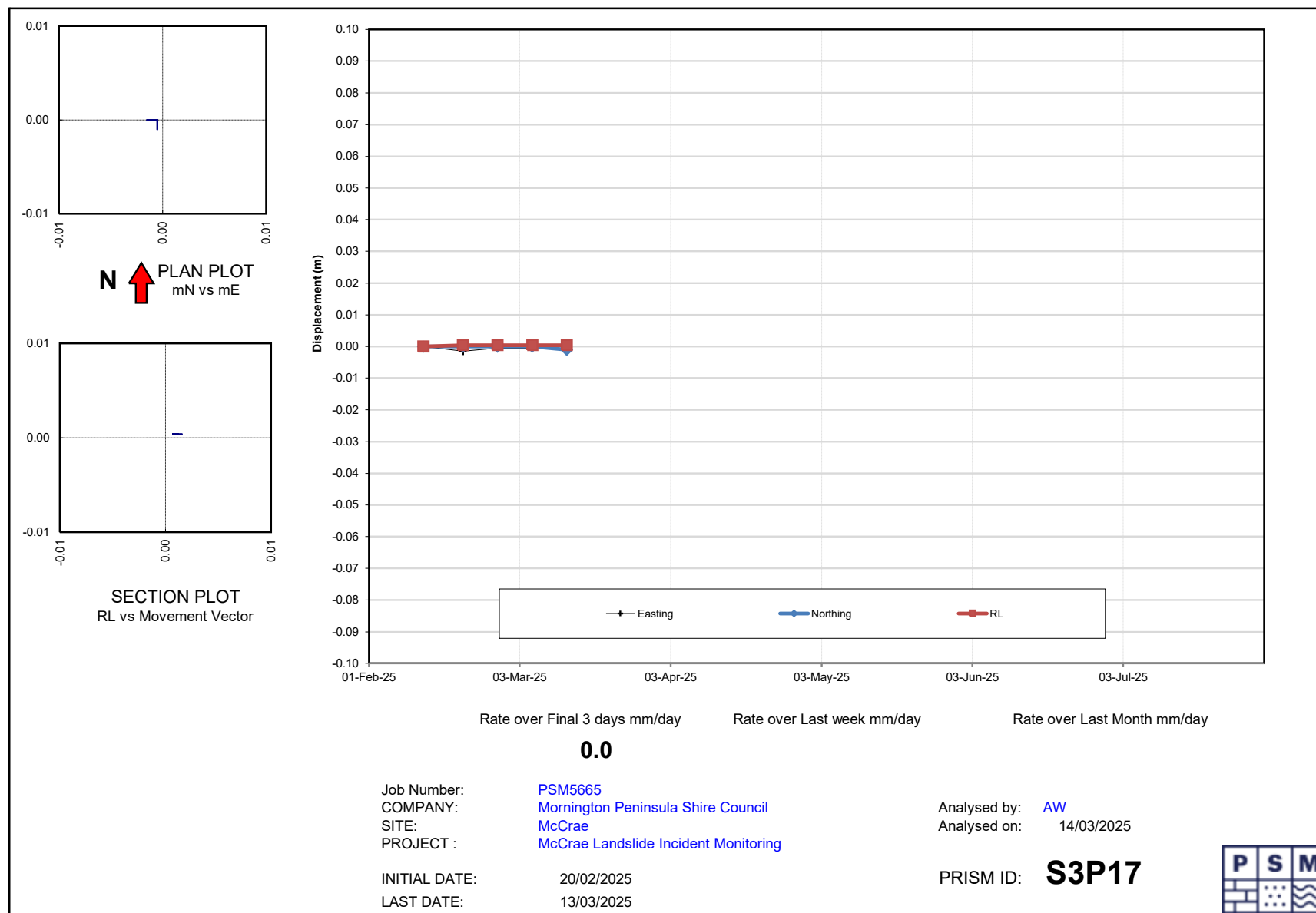


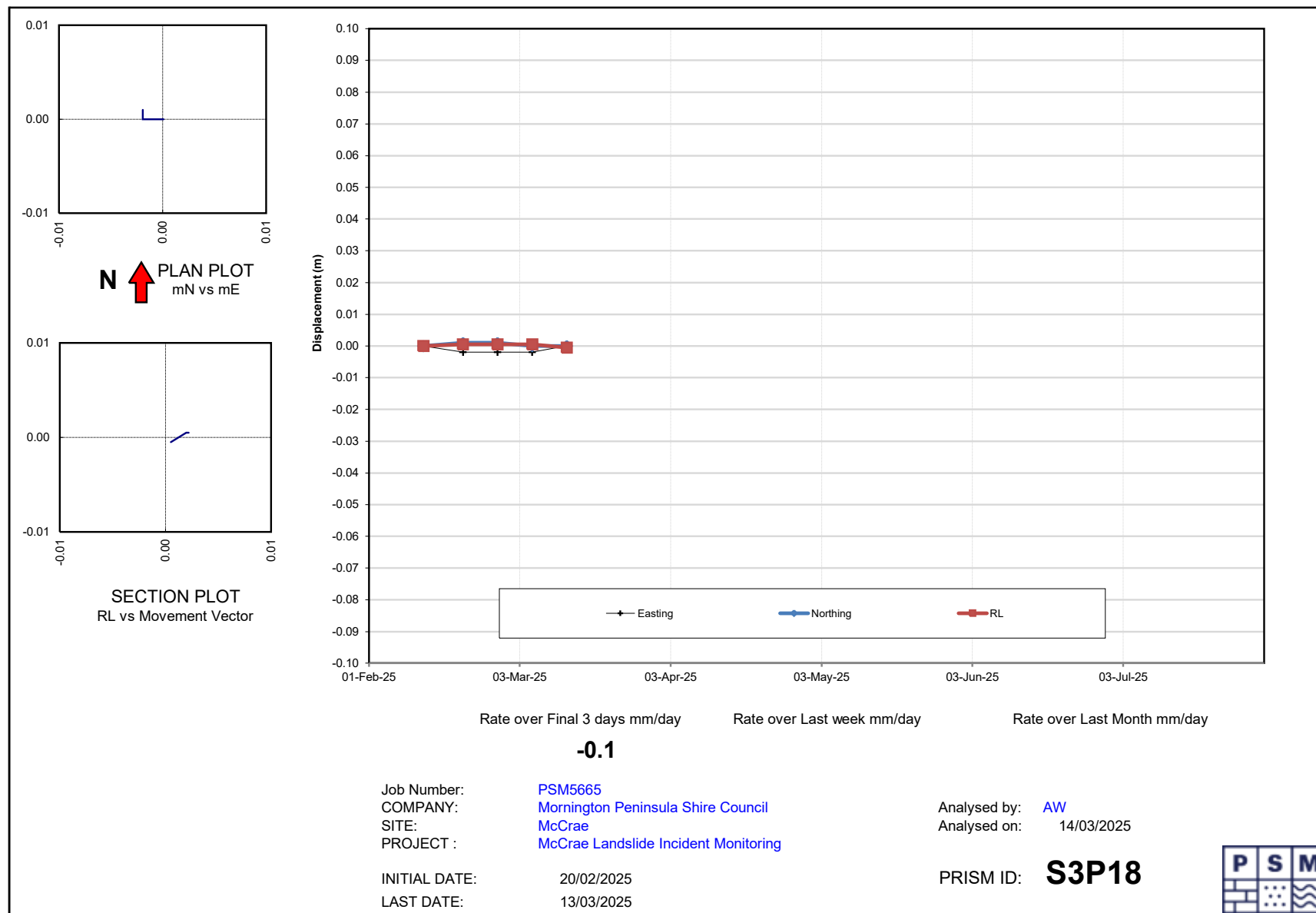


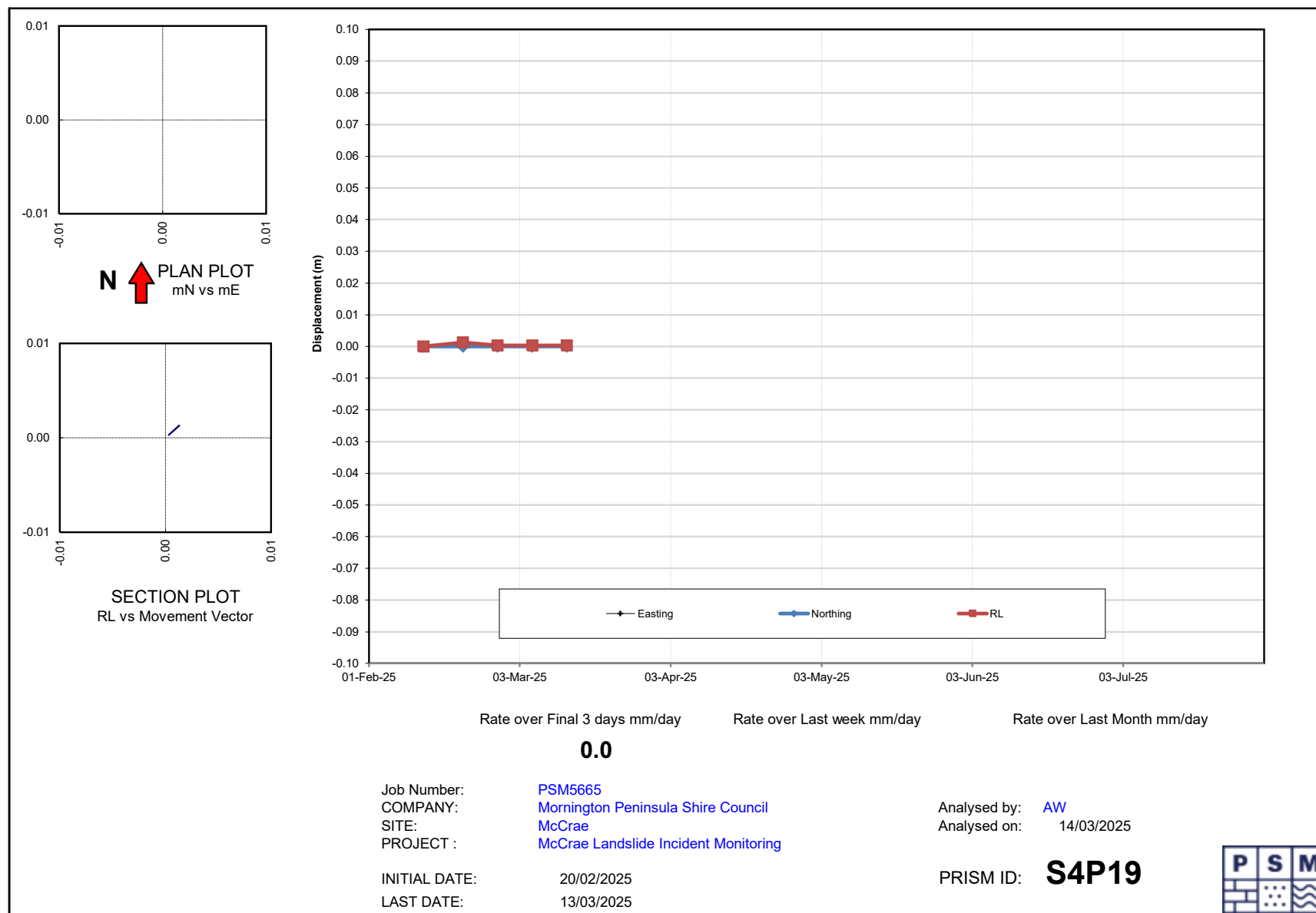


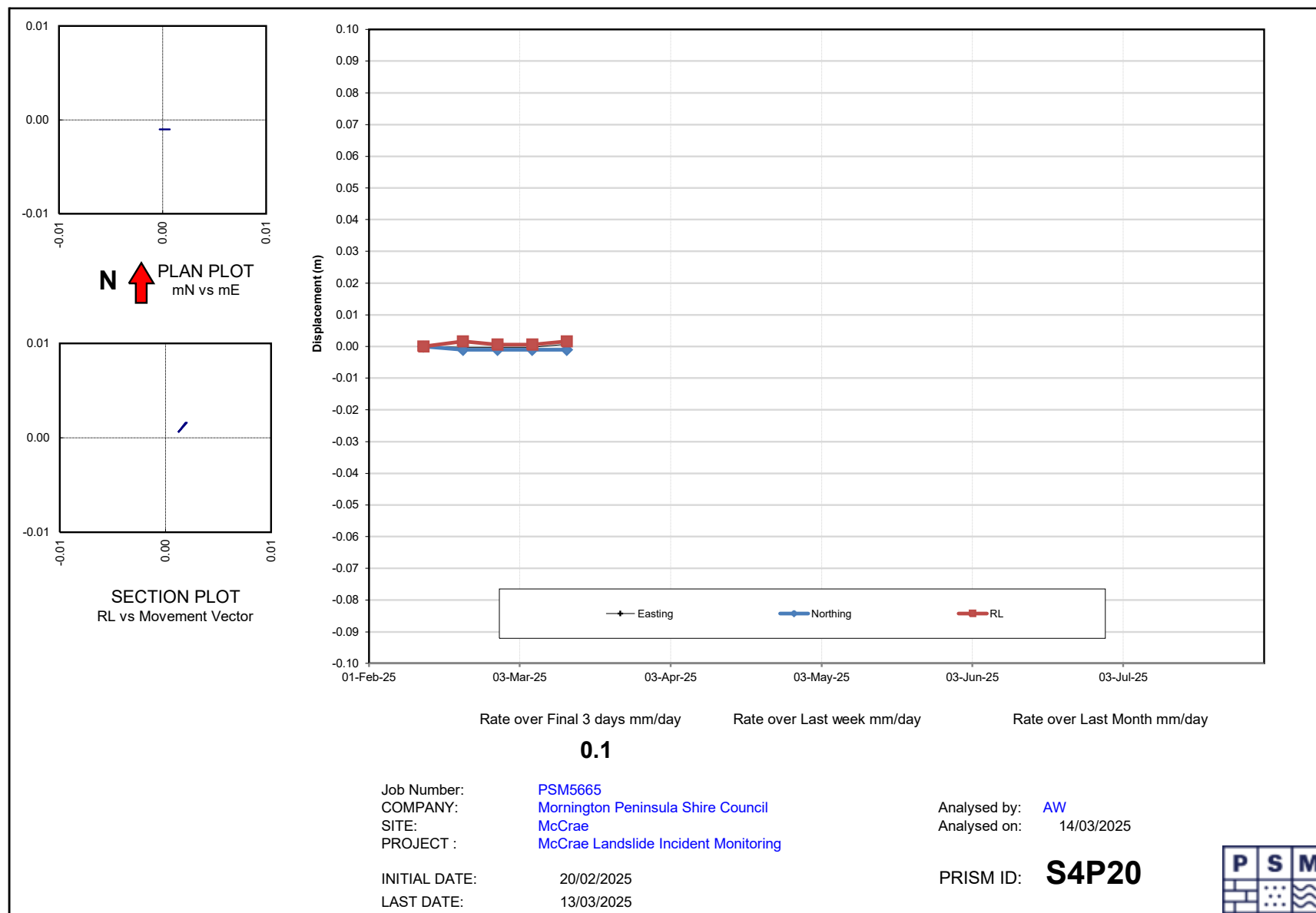


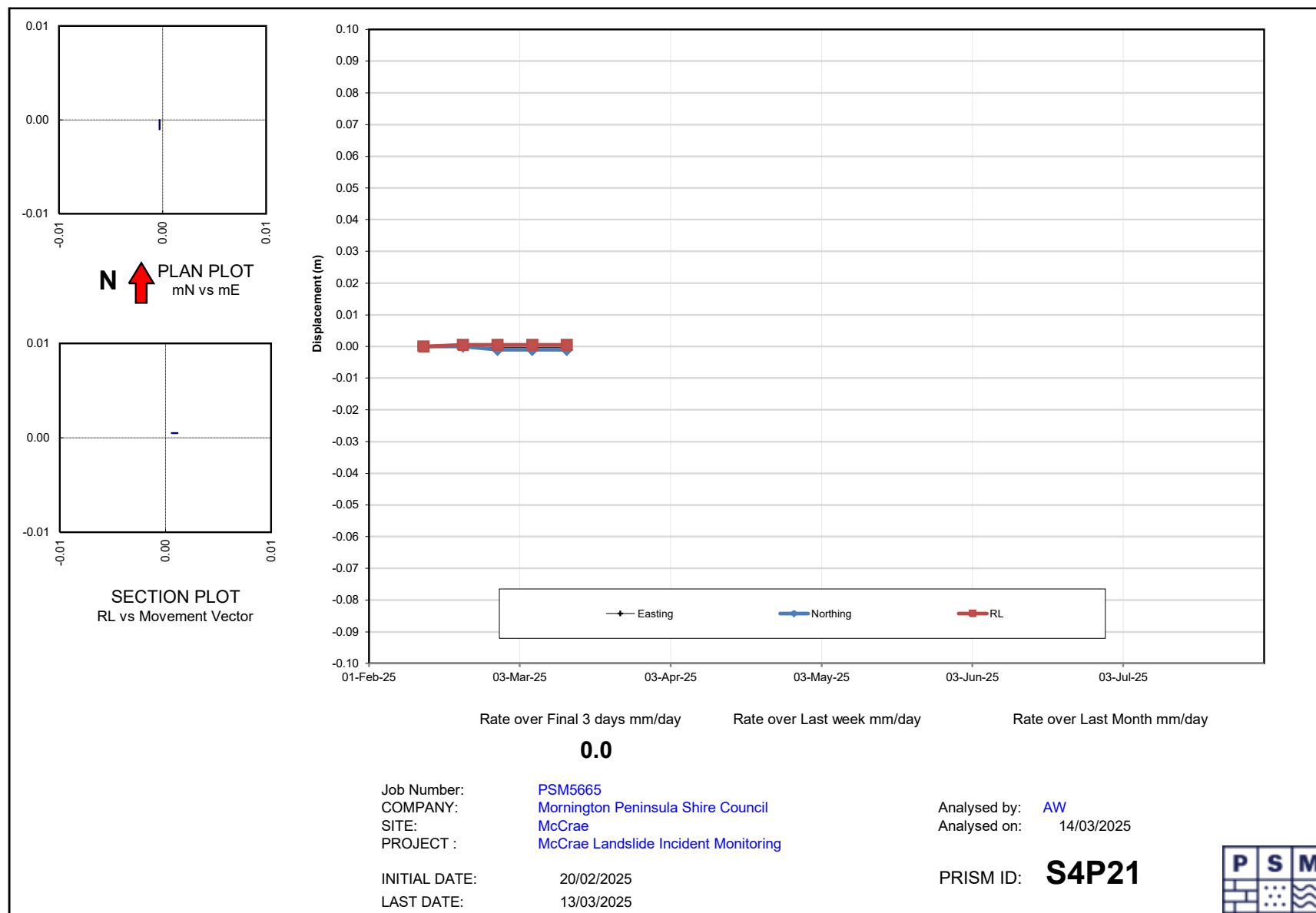


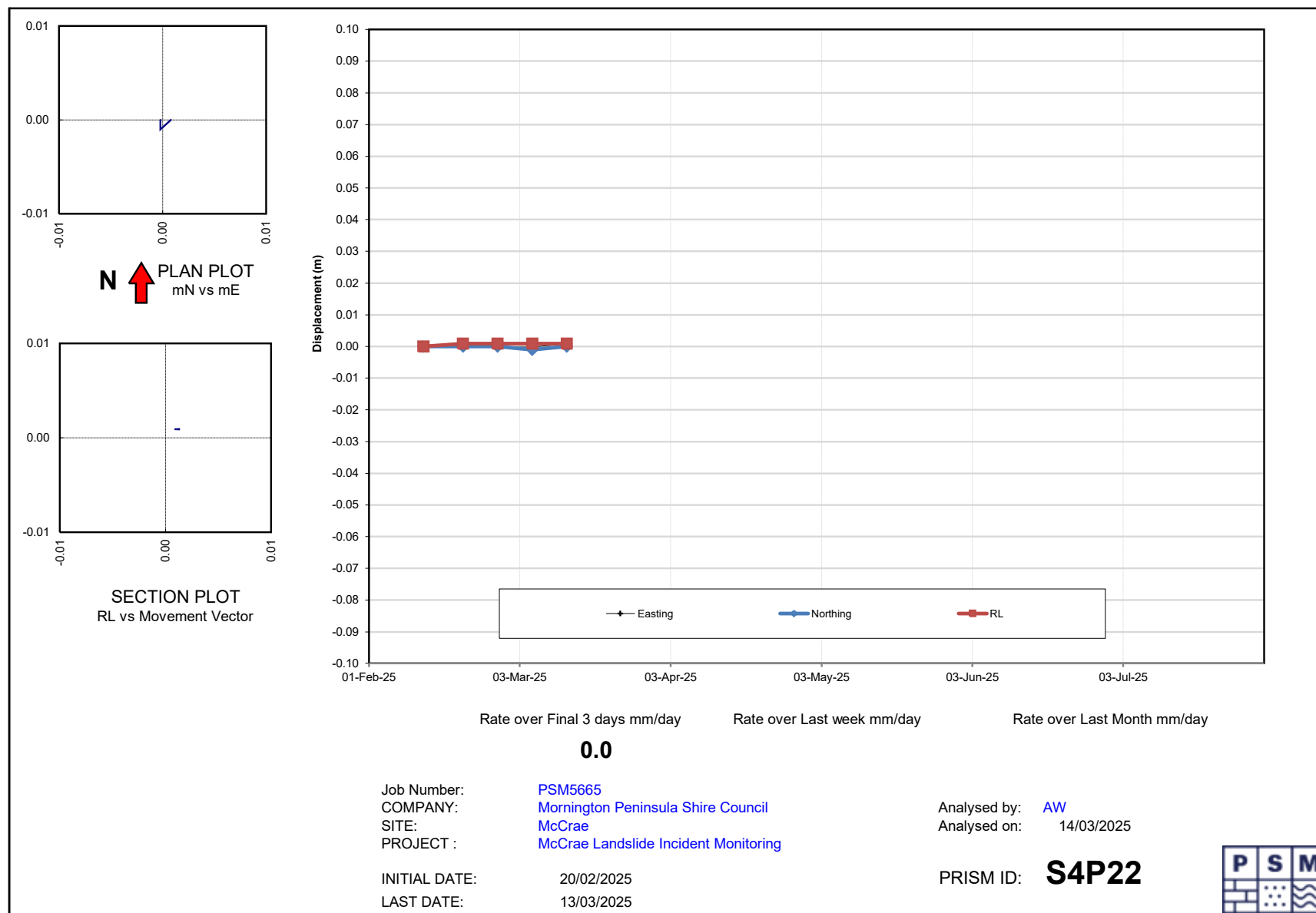


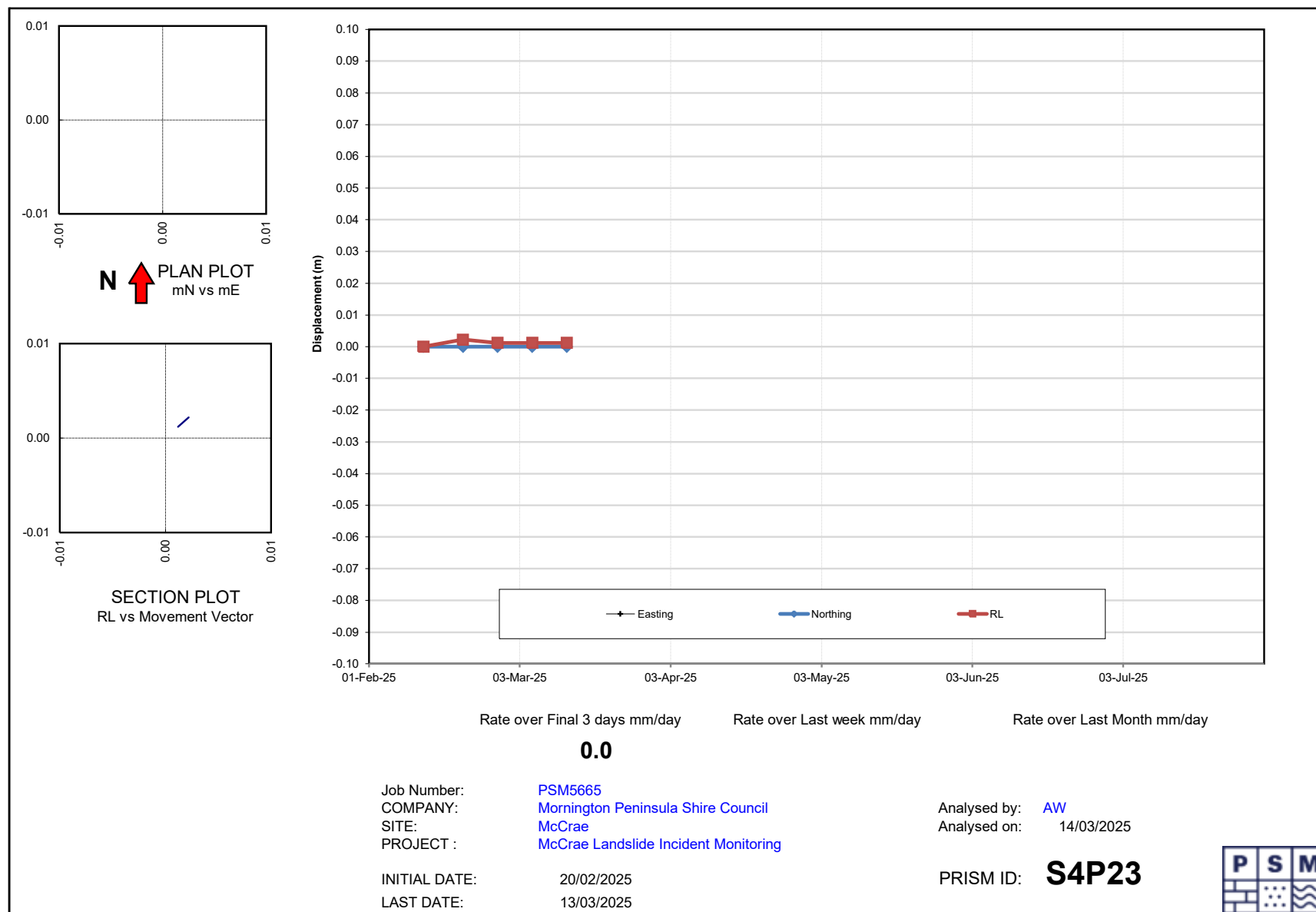


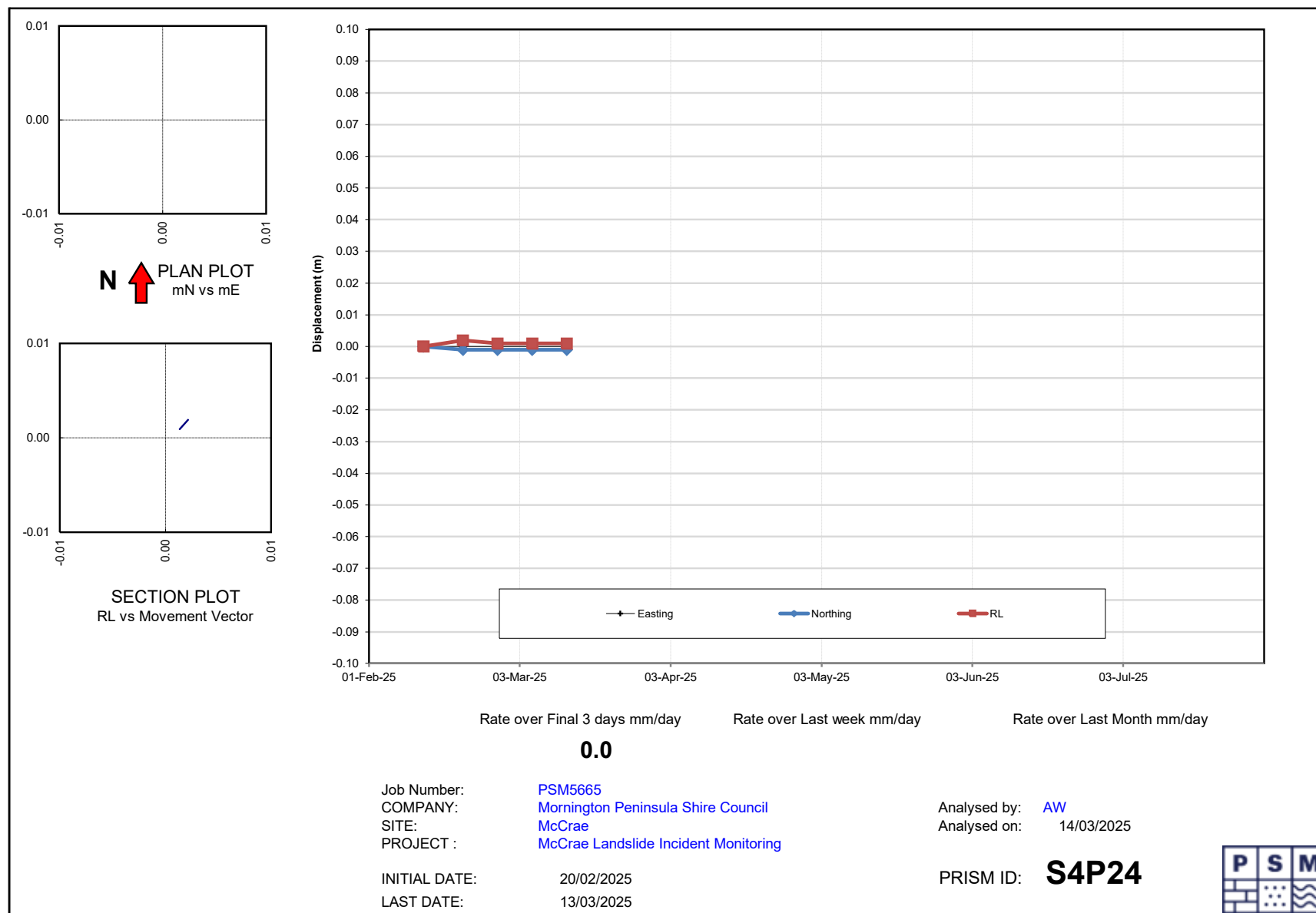


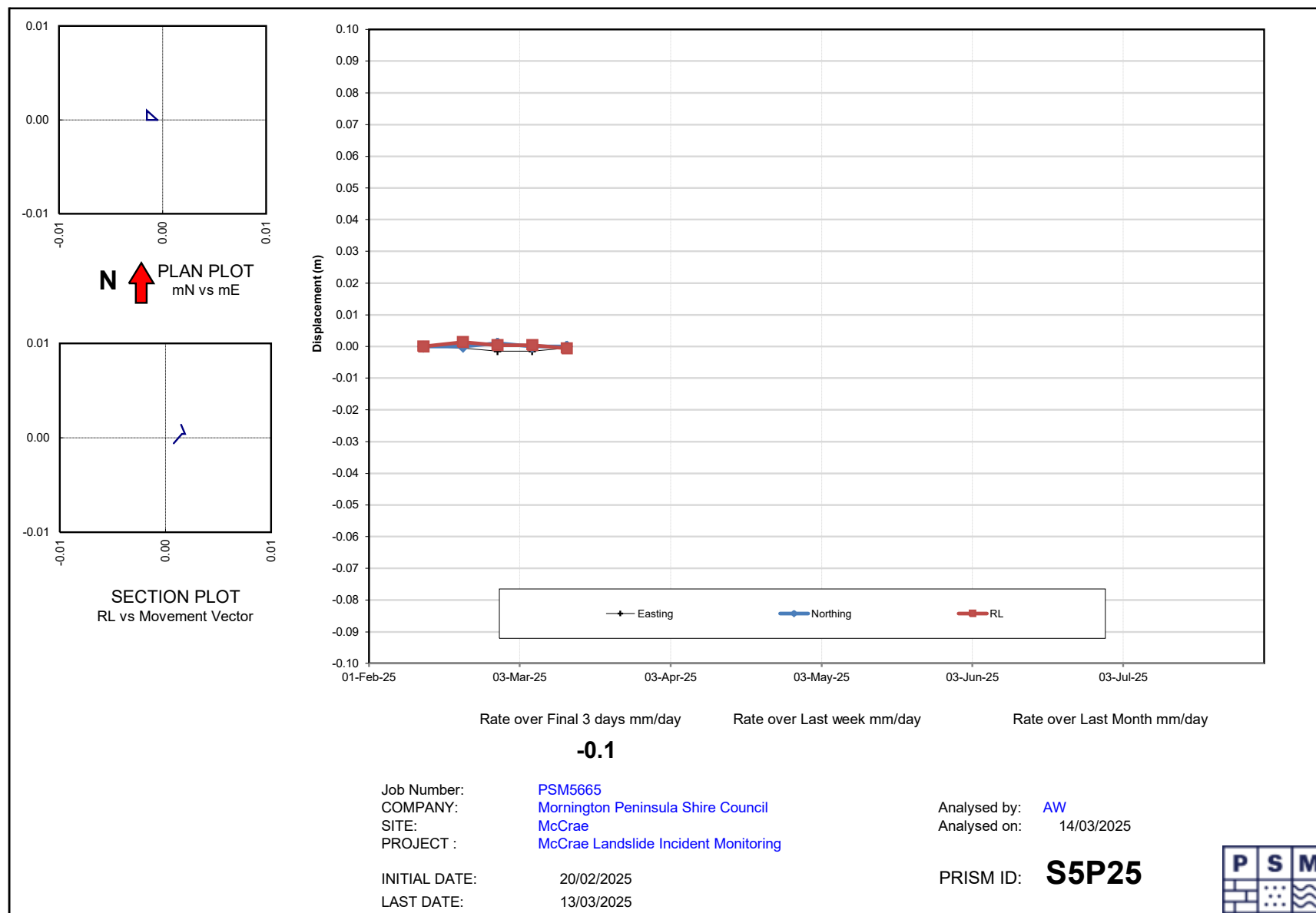


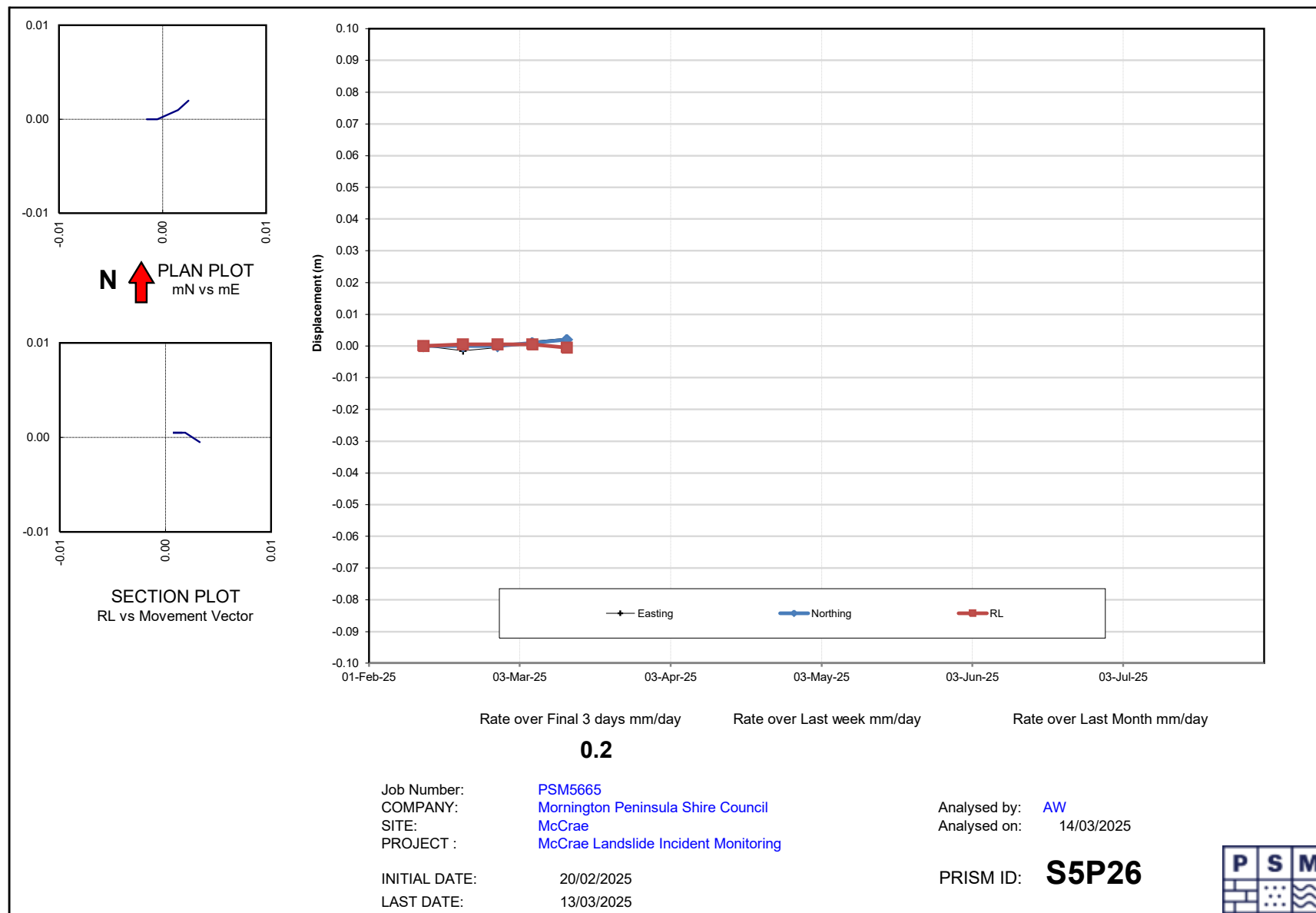


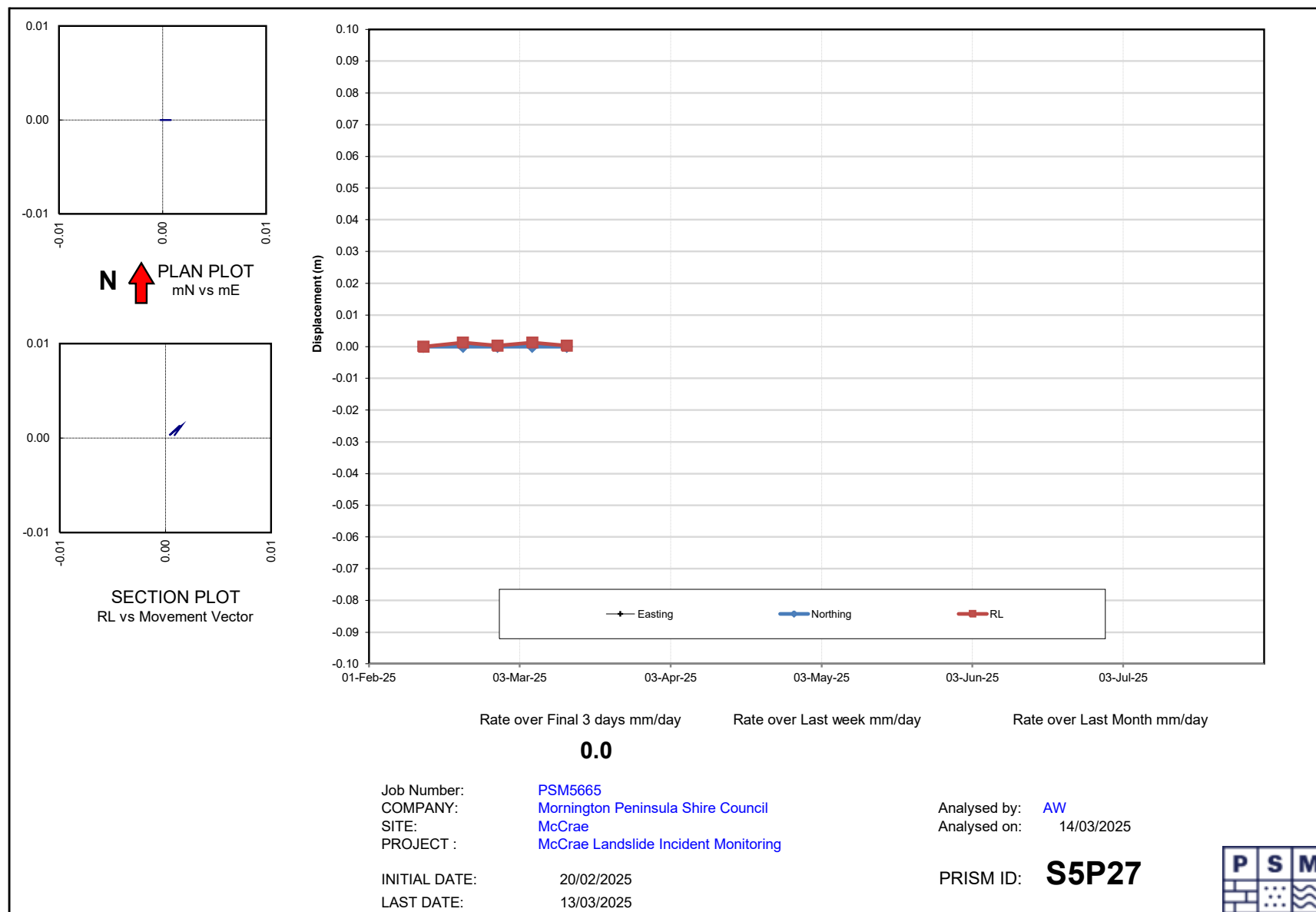


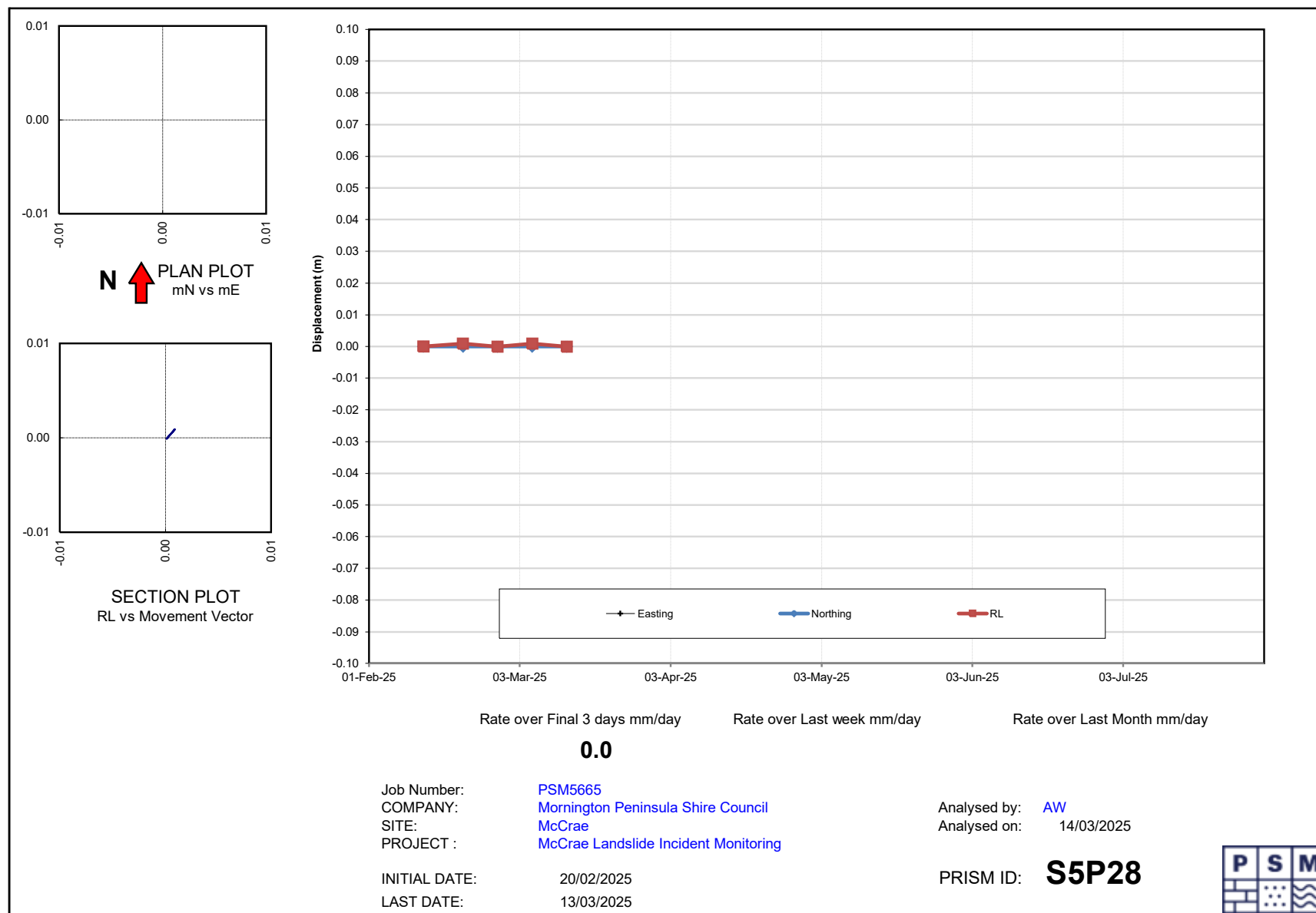


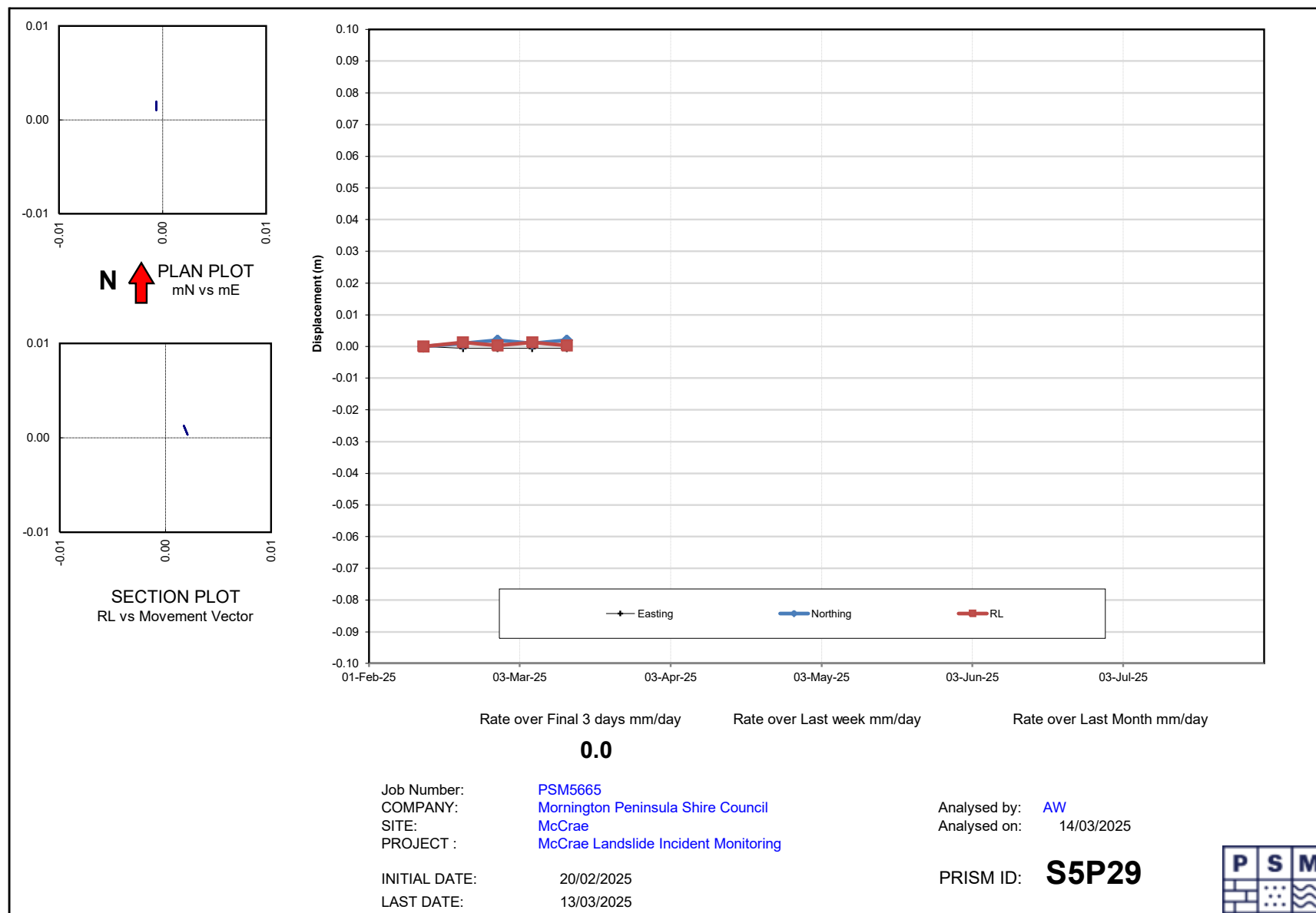


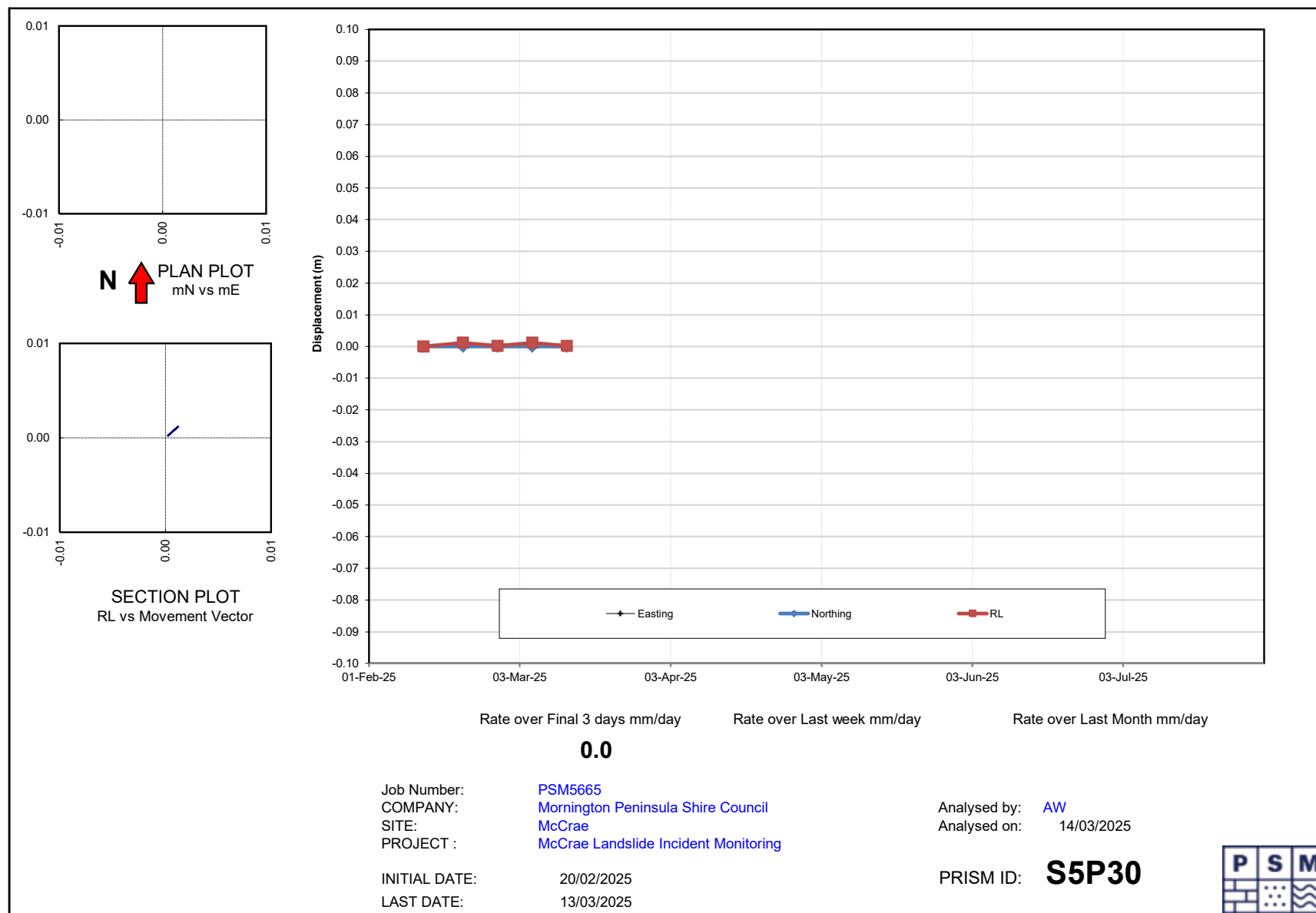


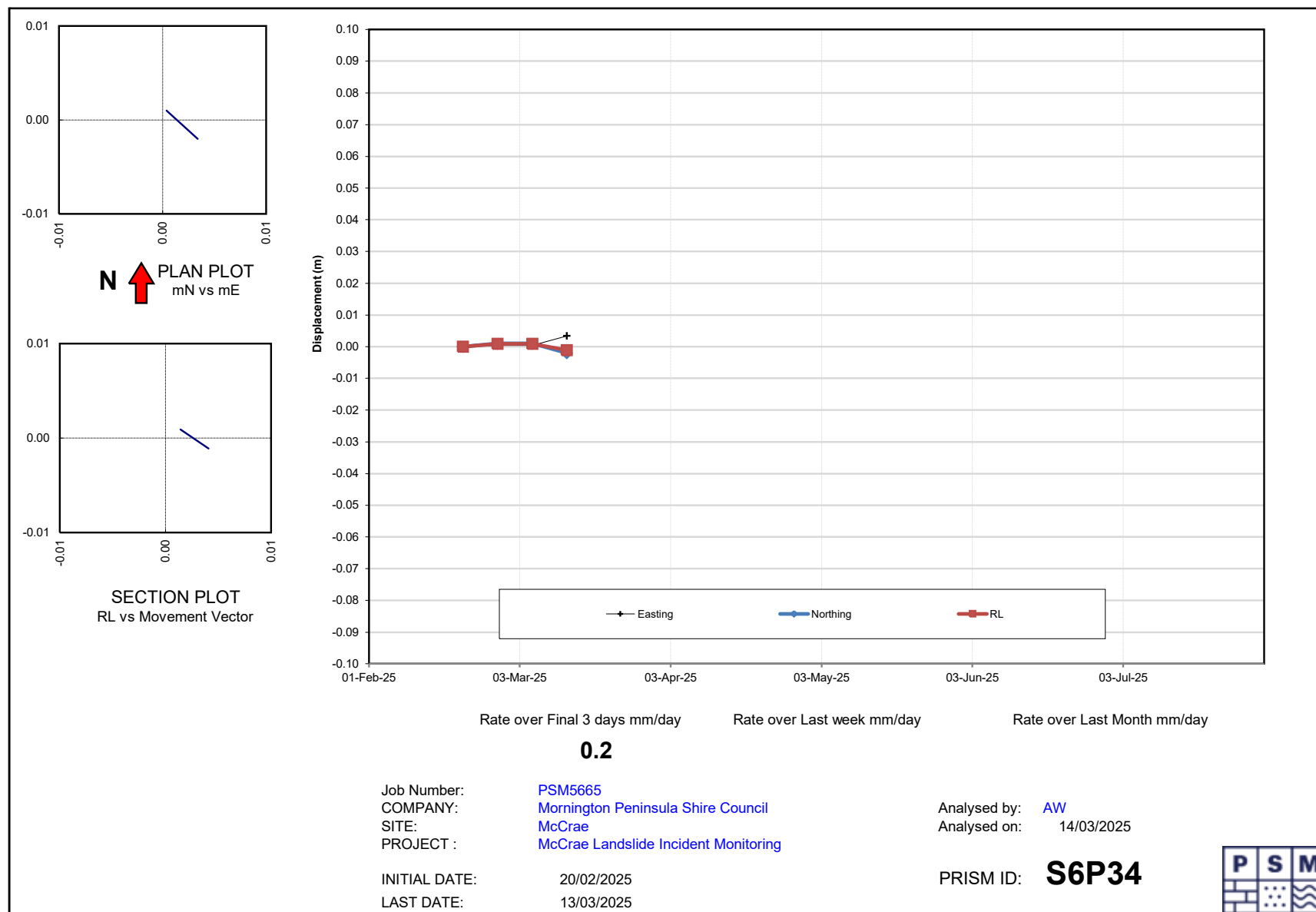


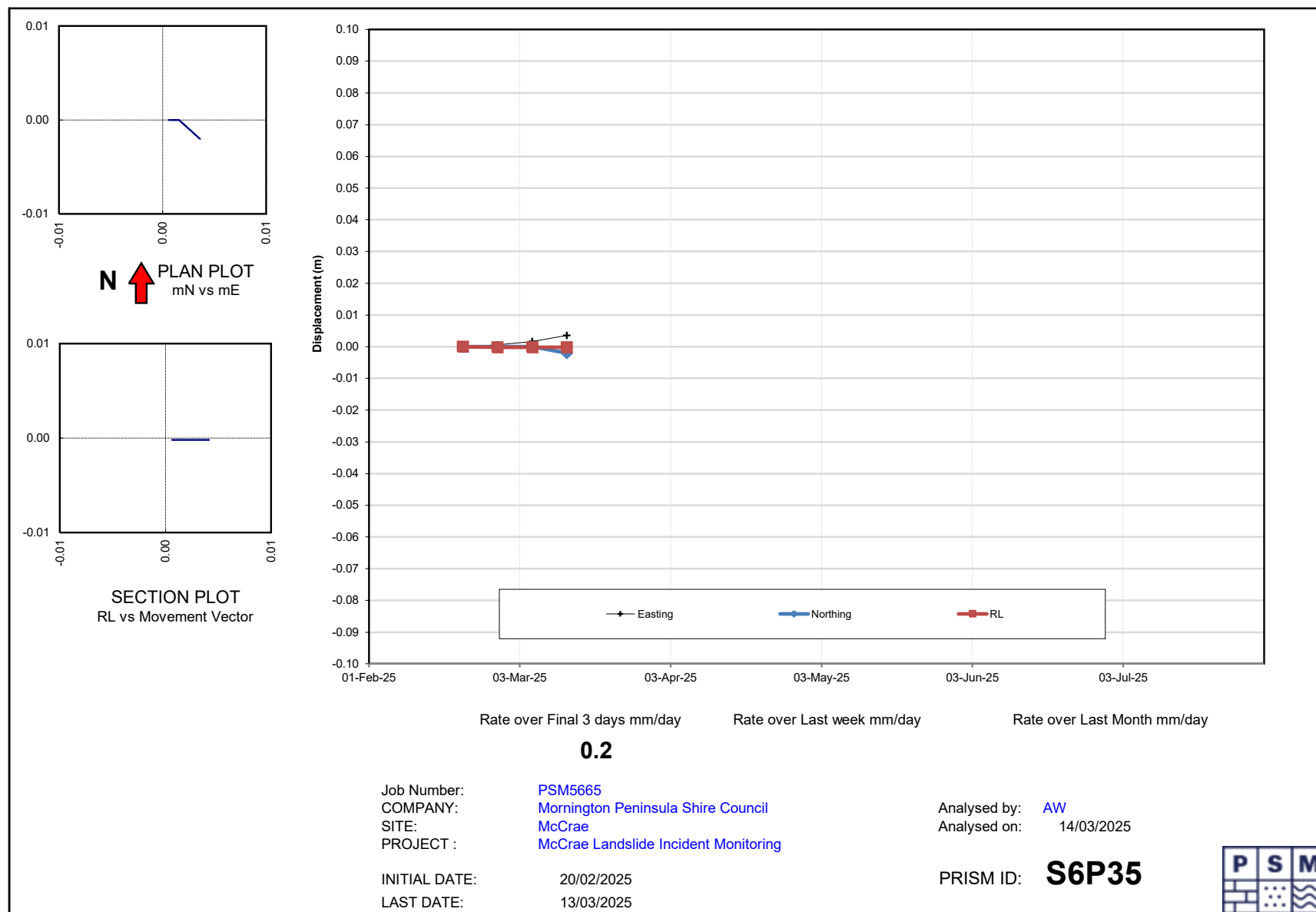


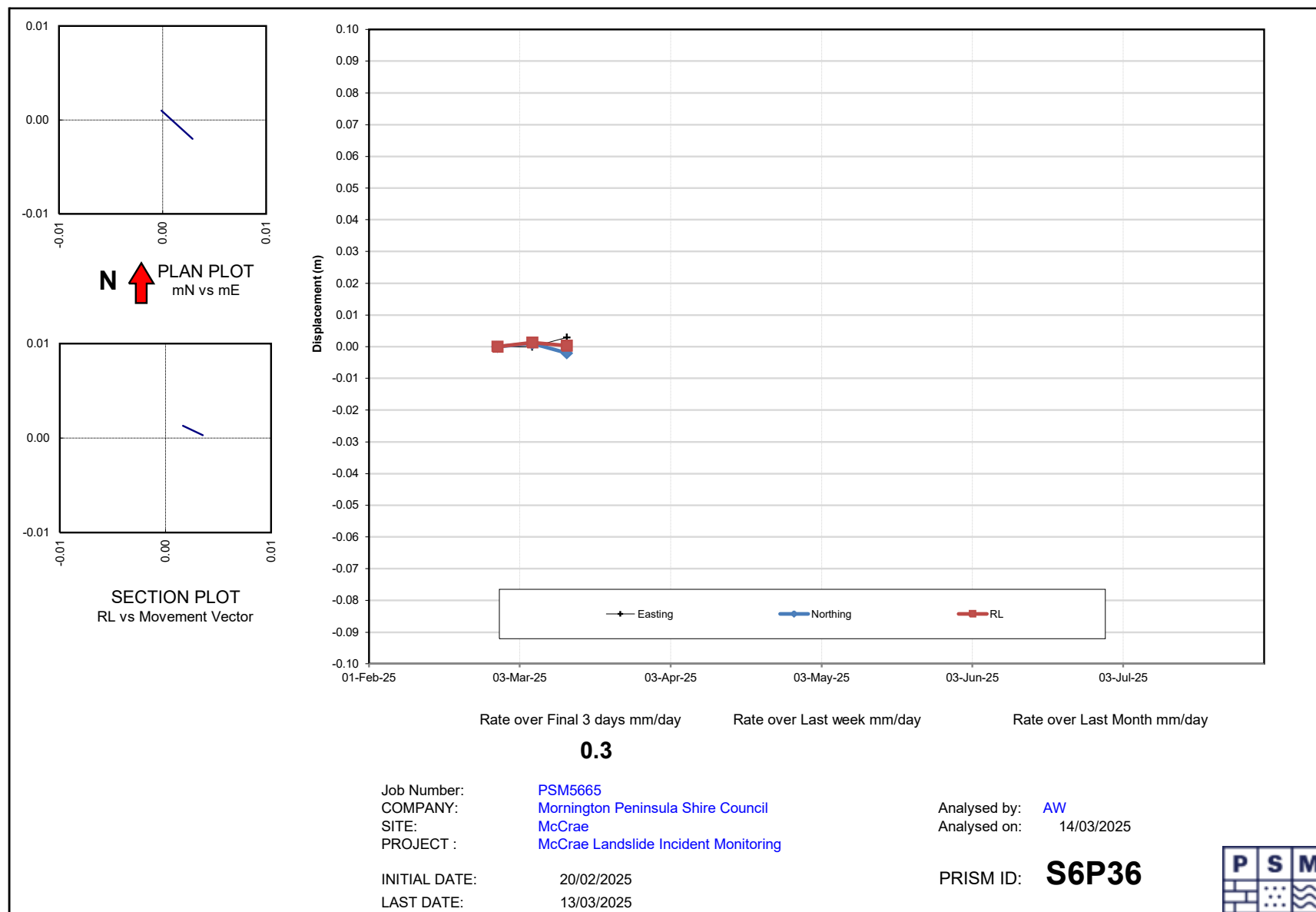






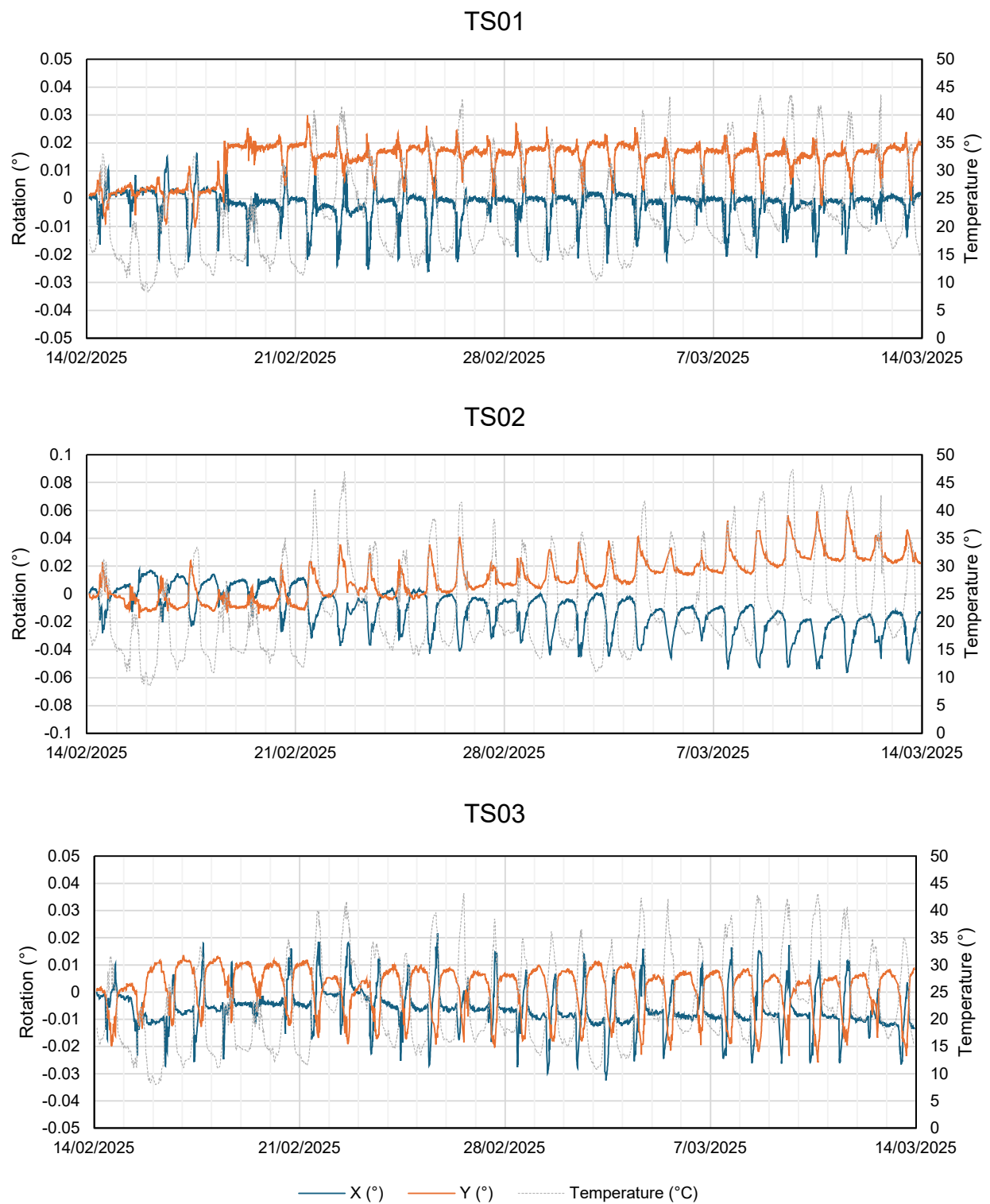






Appendix F

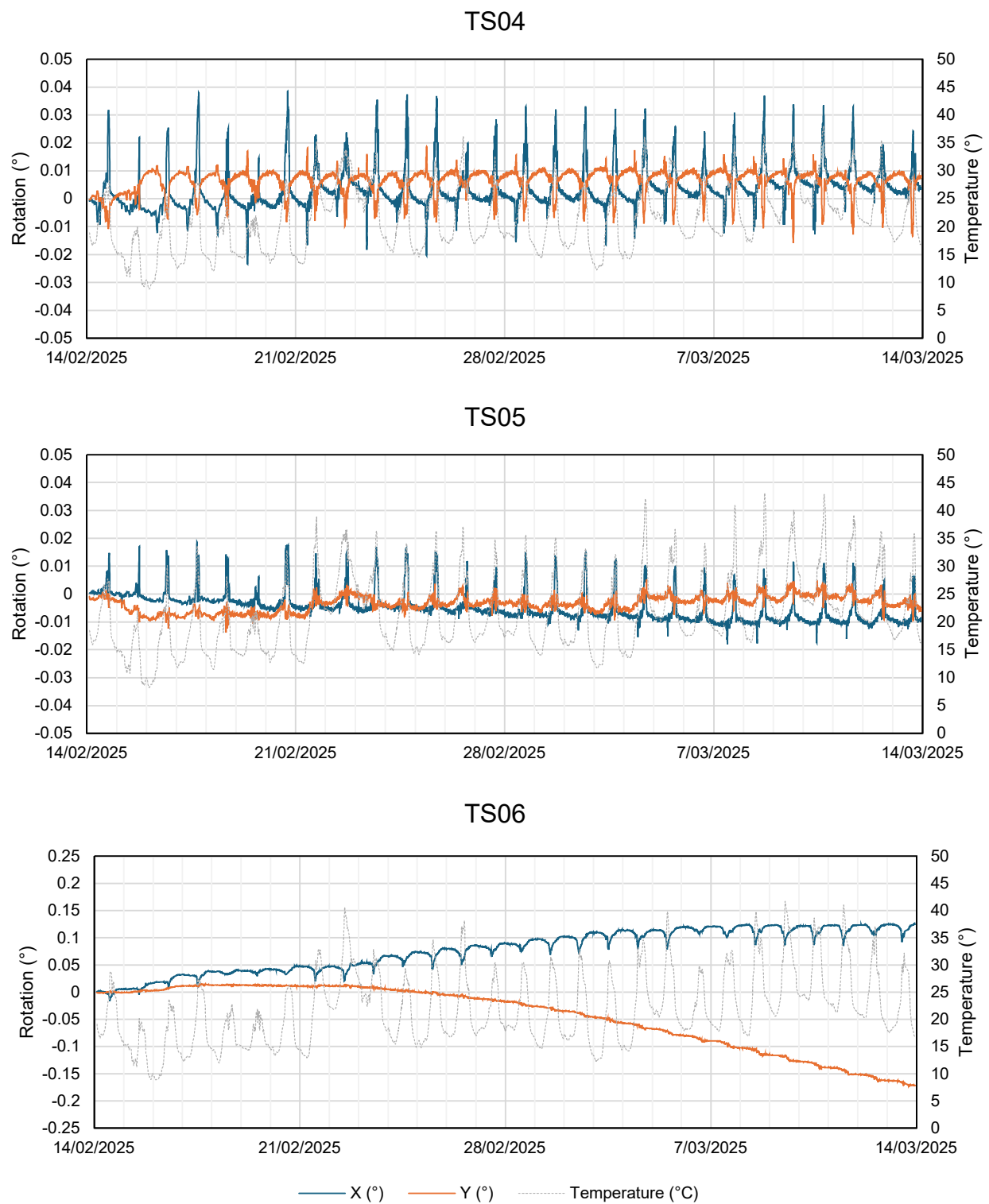
Tilt sensor monitoring plots



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McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 14 Mar 2025

PSM5665-054M

Figure F1

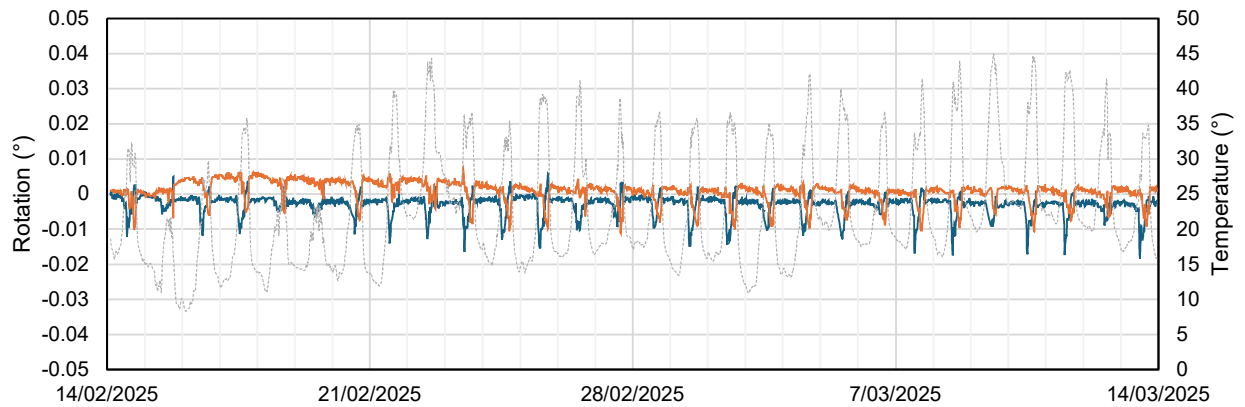


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Tilt Sensors - Monitoring Data
14 Feb 2025 to 14 Mar 2025

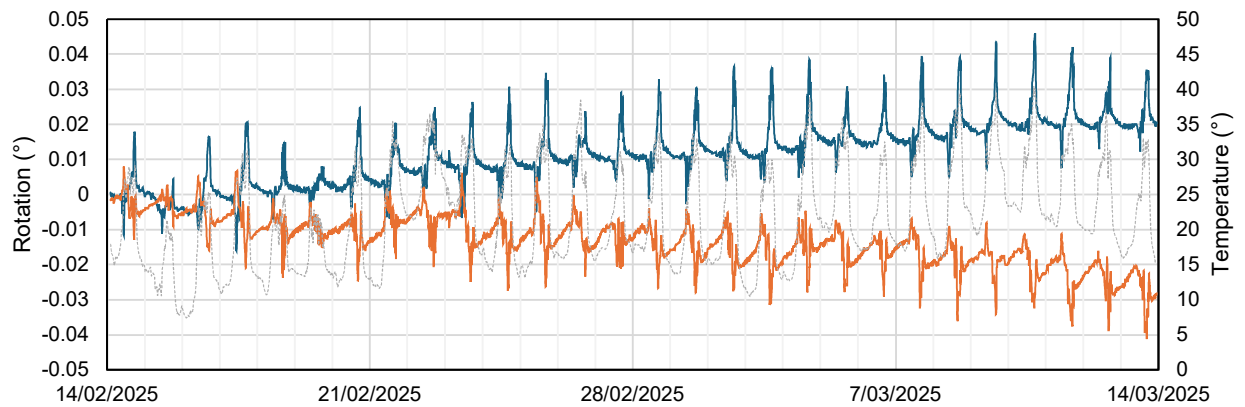
PSM5665-054M

Figure F2

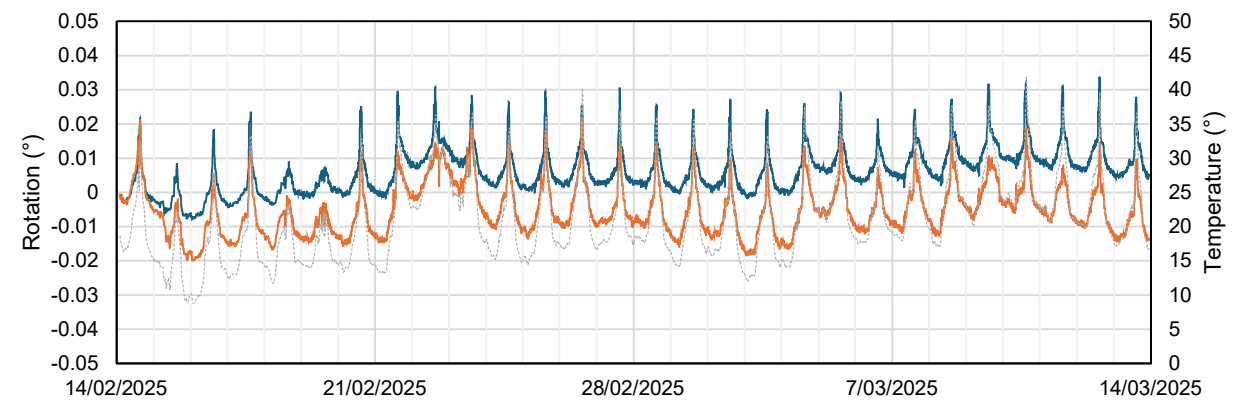
TS07



TS08



TS09



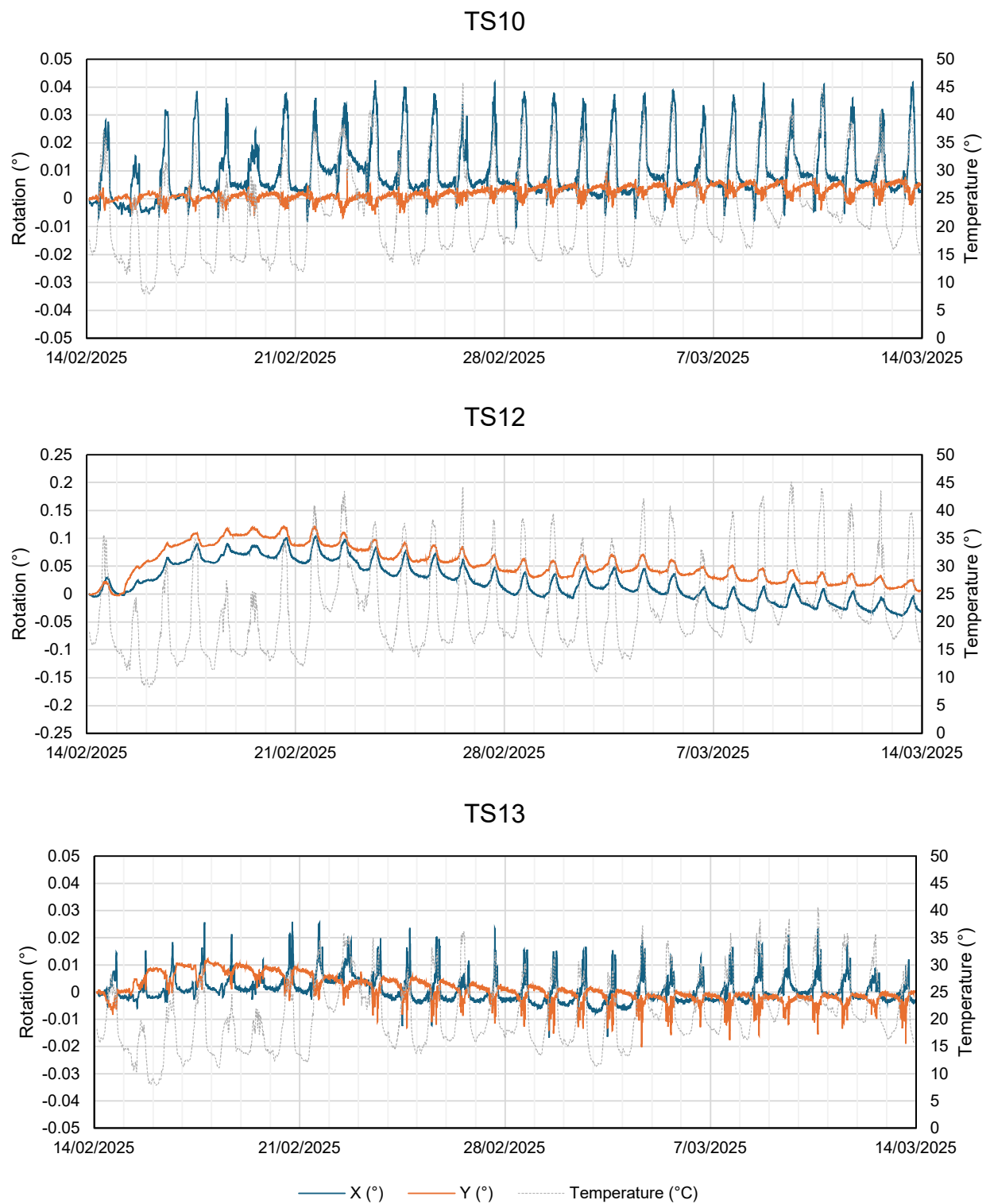
— X (°) — Y (°) Temperature (°C)



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Figure F3



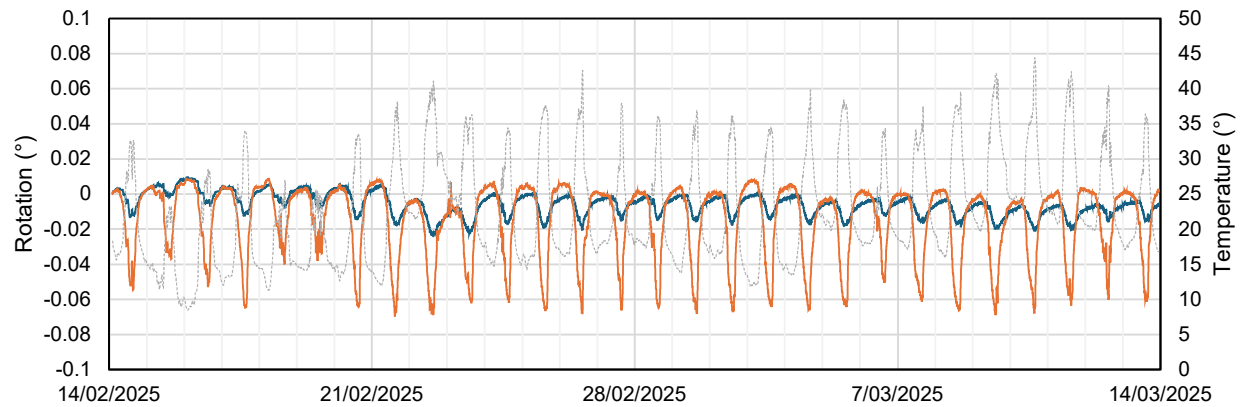
Mornington Peninsula Shire Council
 McCrae Landslide Incident
 Instrumentation and Monitoring
 Tilt Sensors - Monitoring Data
 14 Feb 2025 to 14 Mar 2025



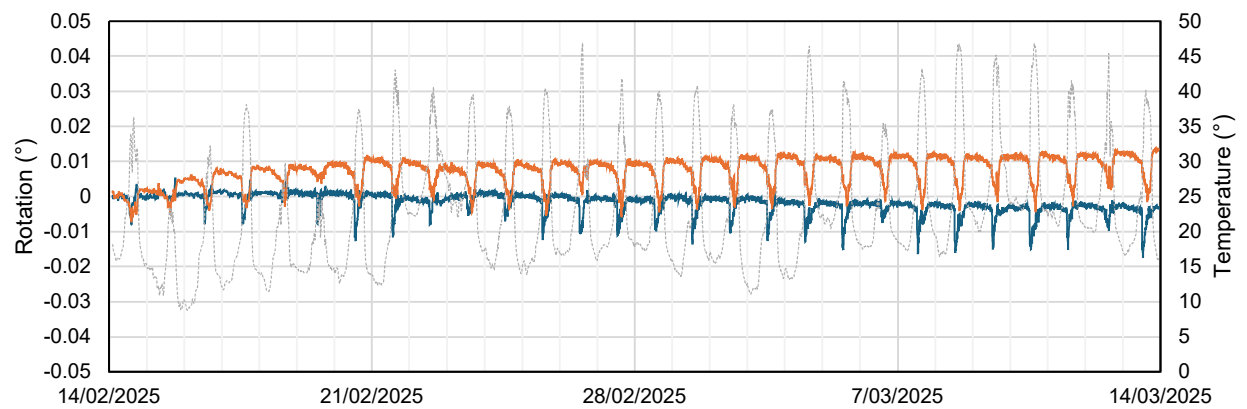
PSM5665-054M

Figure F4

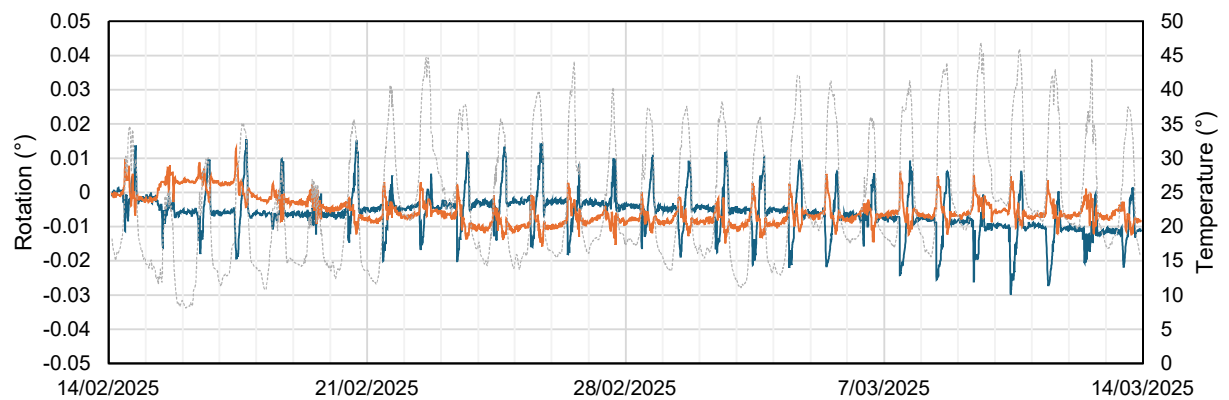
TS14



TS15



TS16



— X (°) — Y (°) Temperature (°C)

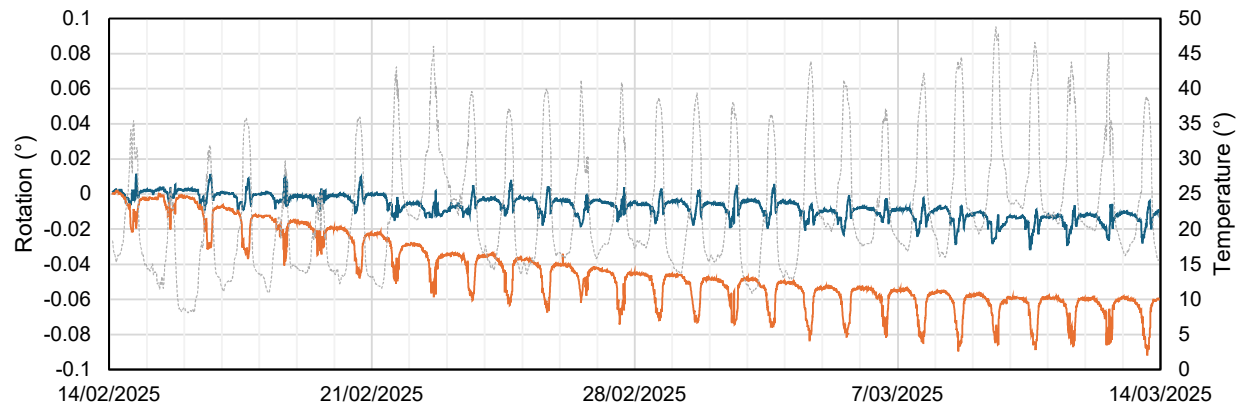


Mornington Peninsula Shire Council
McCrae Landslide Incident
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14 Feb 2025 to 14 Mar 2025

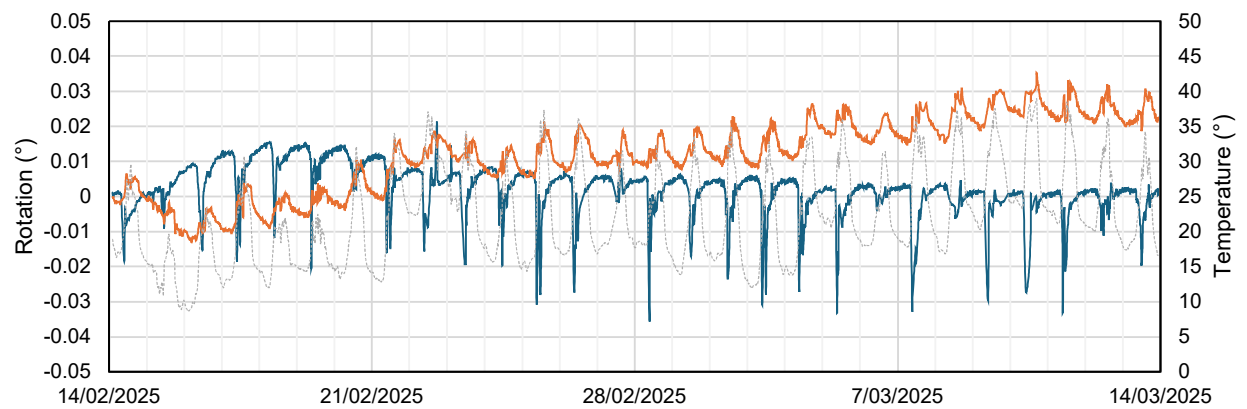
PSM5665-054M

Figure F5

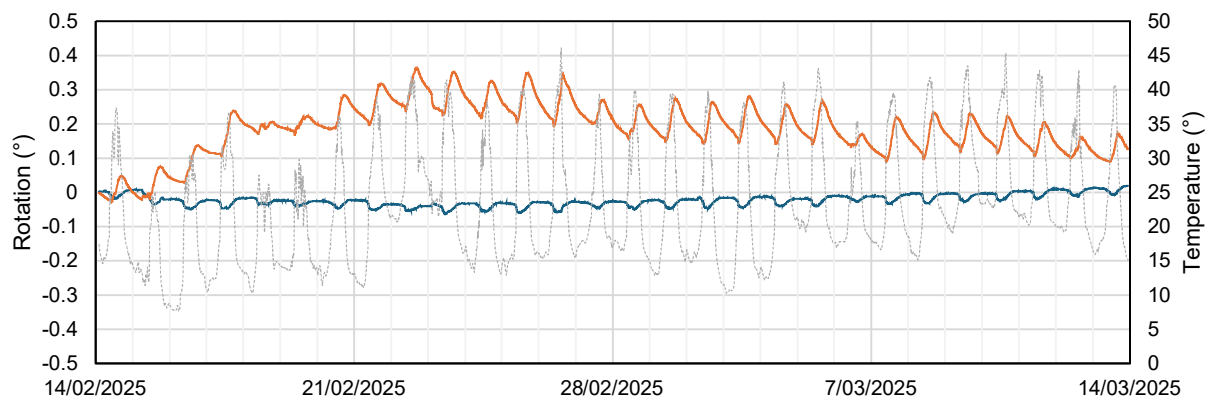
TS17



TS19



TS20



— X (°) — Y (°) Temperature (°C)



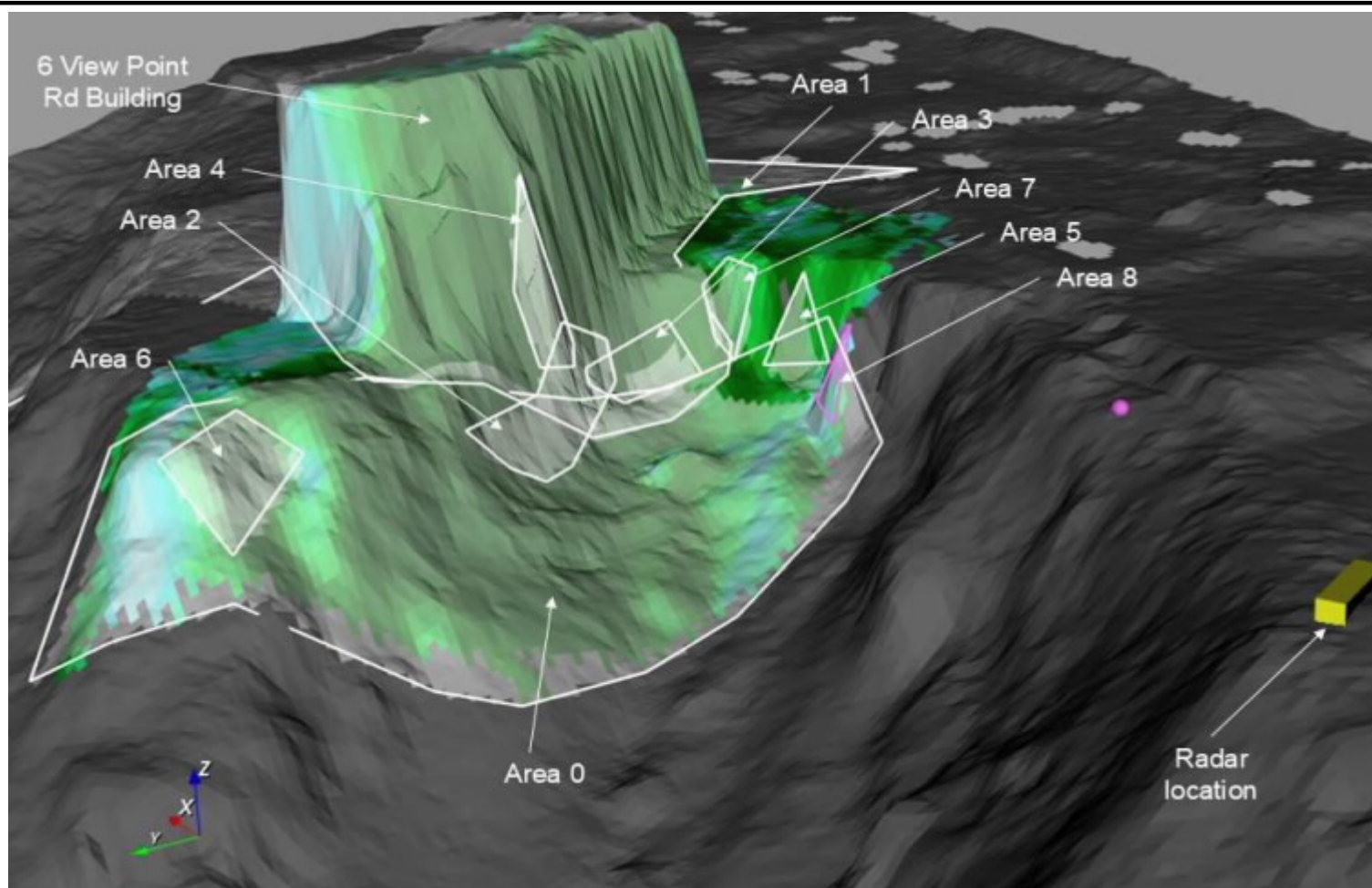
Mornington Peninsula Shire Council
McCrae Landslide Incident
Instrumentation and Monitoring
Tilt Sensors - Monitoring Data
14 Feb 2025 to 14 Mar 2025

PSM5665-054M

Figure F6

Appendix G

Radar monitoring plots

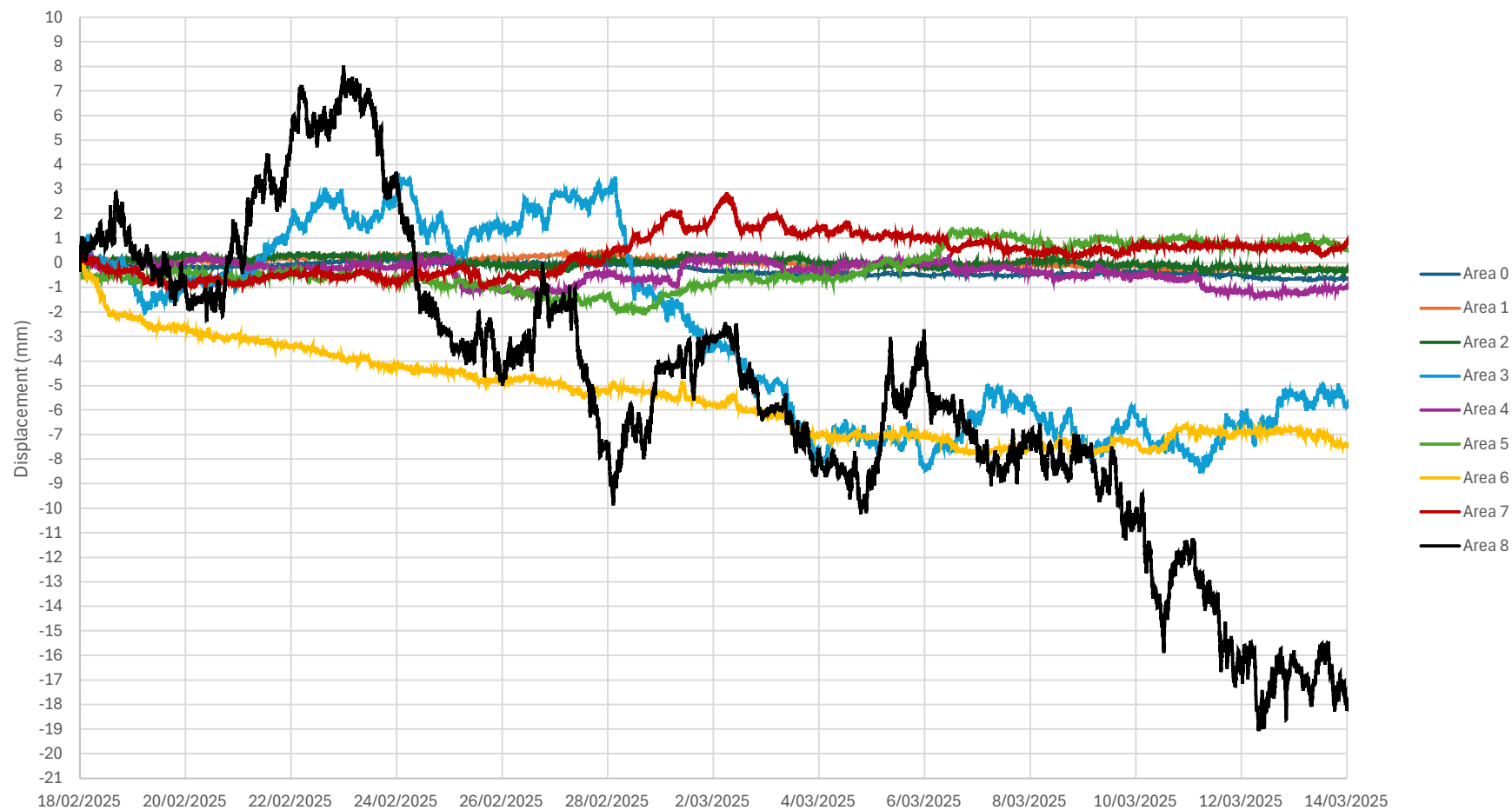


Mornington Peninsula Shire Council
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Radar - Monitoring Areas



PSM5665-054M

Figure G1



Mornington Peninsula Shire Council
 McCrae Landslide Incident
 Instrumentation and Monitoring
 Radar - Monitoring Data
 18 Feb 2025 to 13 Mar 2025

PSM5665-054M

Figure G2