

Appendix D

## Impact Air Quality Monitoring Results

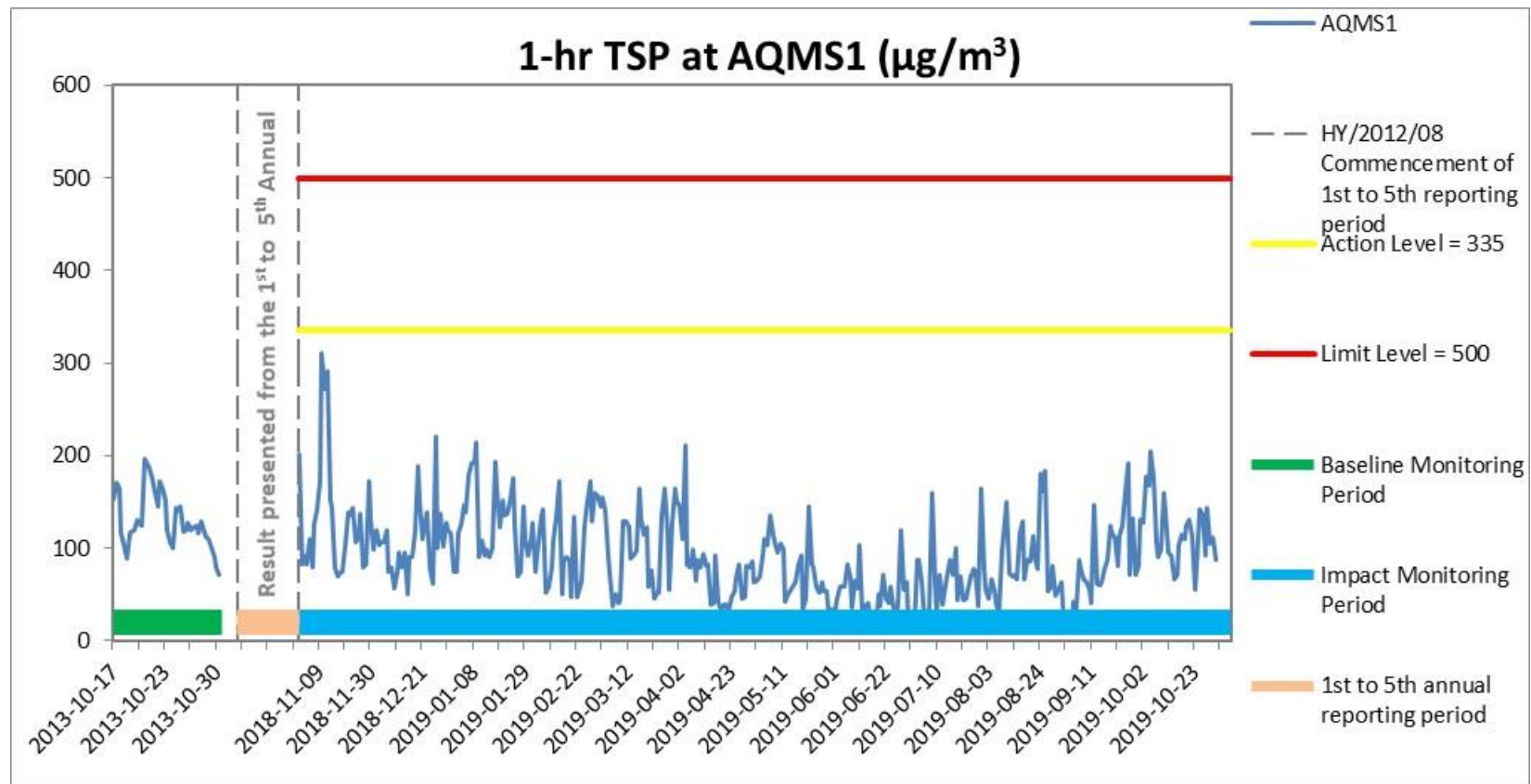


Figure D.1 Baseline & Impact Monitoring – 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at AQMS1 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: Construction of Cross Passage Tympanum – TBM tunnel; Cross Passage Lining Installation – TBM Tunnel; Cross Passage Construction by Pipe Jacking – TBM Tunnel; Corbel & OVHD Construction – TBM Tunnel; Parapet wall and Fireboard Installation – TBM tunnel. Bulk Excavation – Portion N-A; D-wall Construction – Portion N-A, S-A & S-C; RC Structure – Portion N-A & S-A; Construction of Overhead Ventilation Ducts – TBM Tunnel; Construction of Thermal Barrier – TBM Tunnel; Construction of Walkway Corbel & Cover – TBM Tunnel; Demolition of Amenities and Workshop – Portion N-A; ELS construction – Portion S-C; ELS Removal – Portion N-A & S-A; Seawall Inspection and Remedial Works – Portion N-B; Road & Drainage Works – Portion N-A; and Backfilling – Portion S-A & S-C.



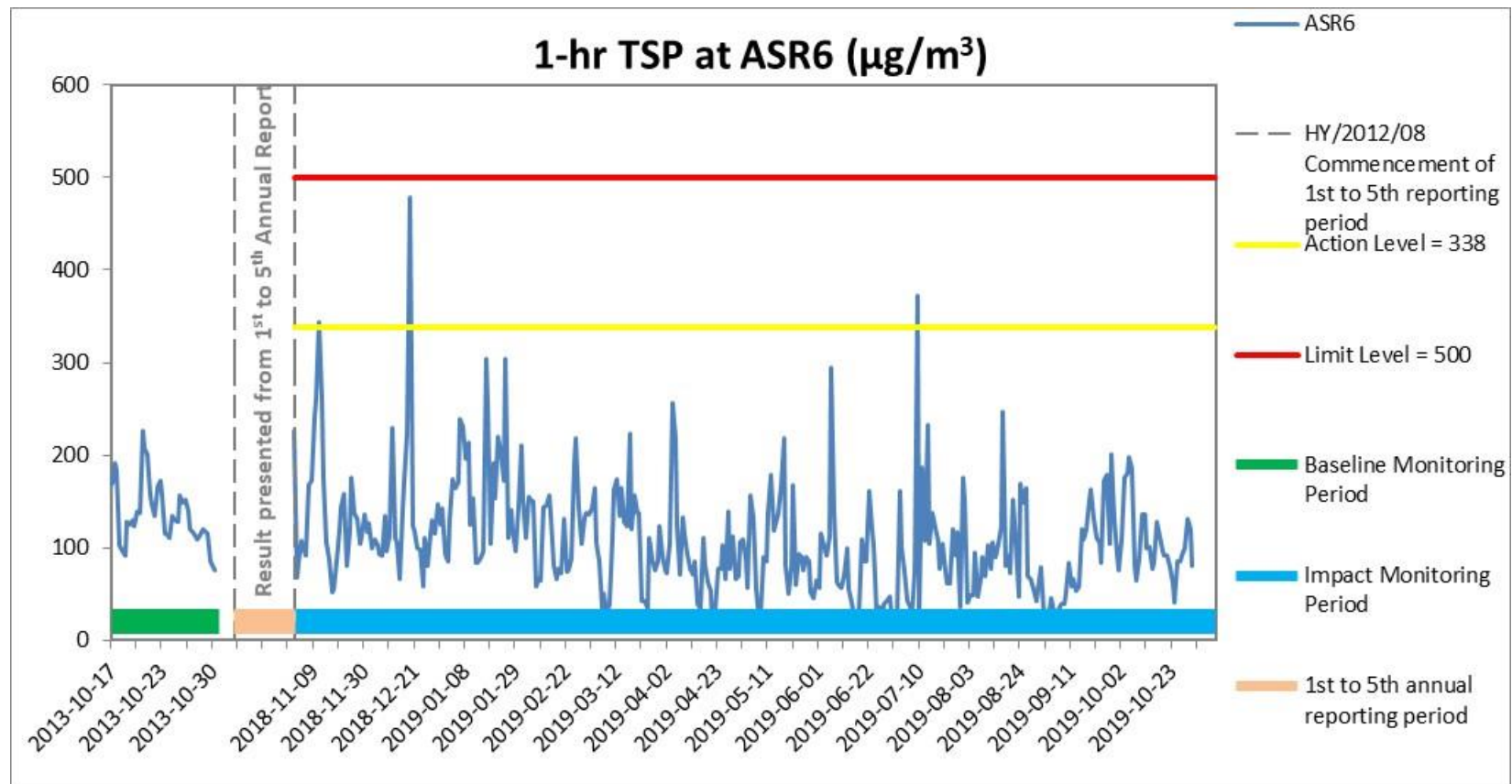


Figure D.2 Baseline & Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR6 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.

Ref: 0212330\_Impact AQM graphs\_6thAnnual\_REV a.xlsx



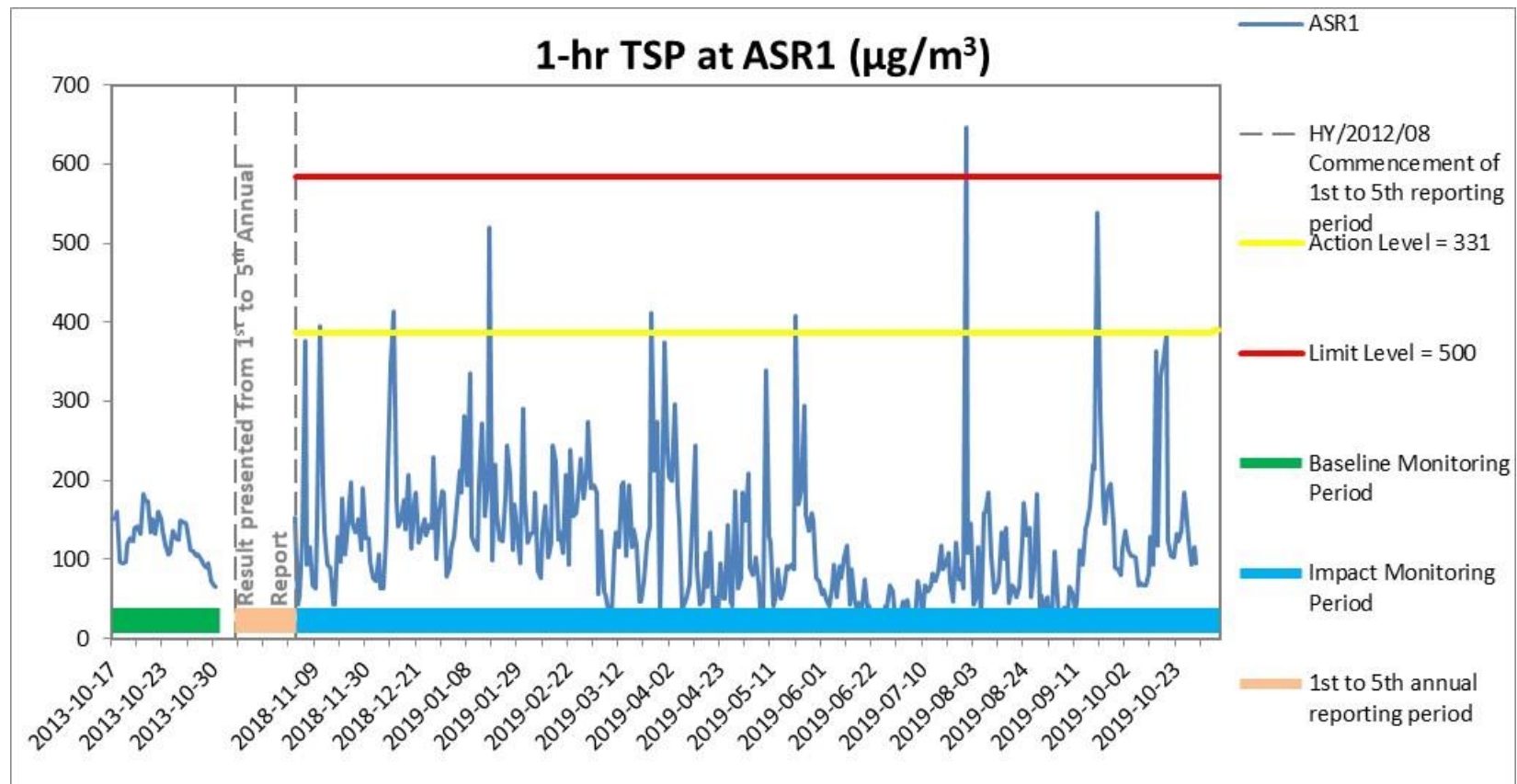


Figure D.3 Baseline & Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR1 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.

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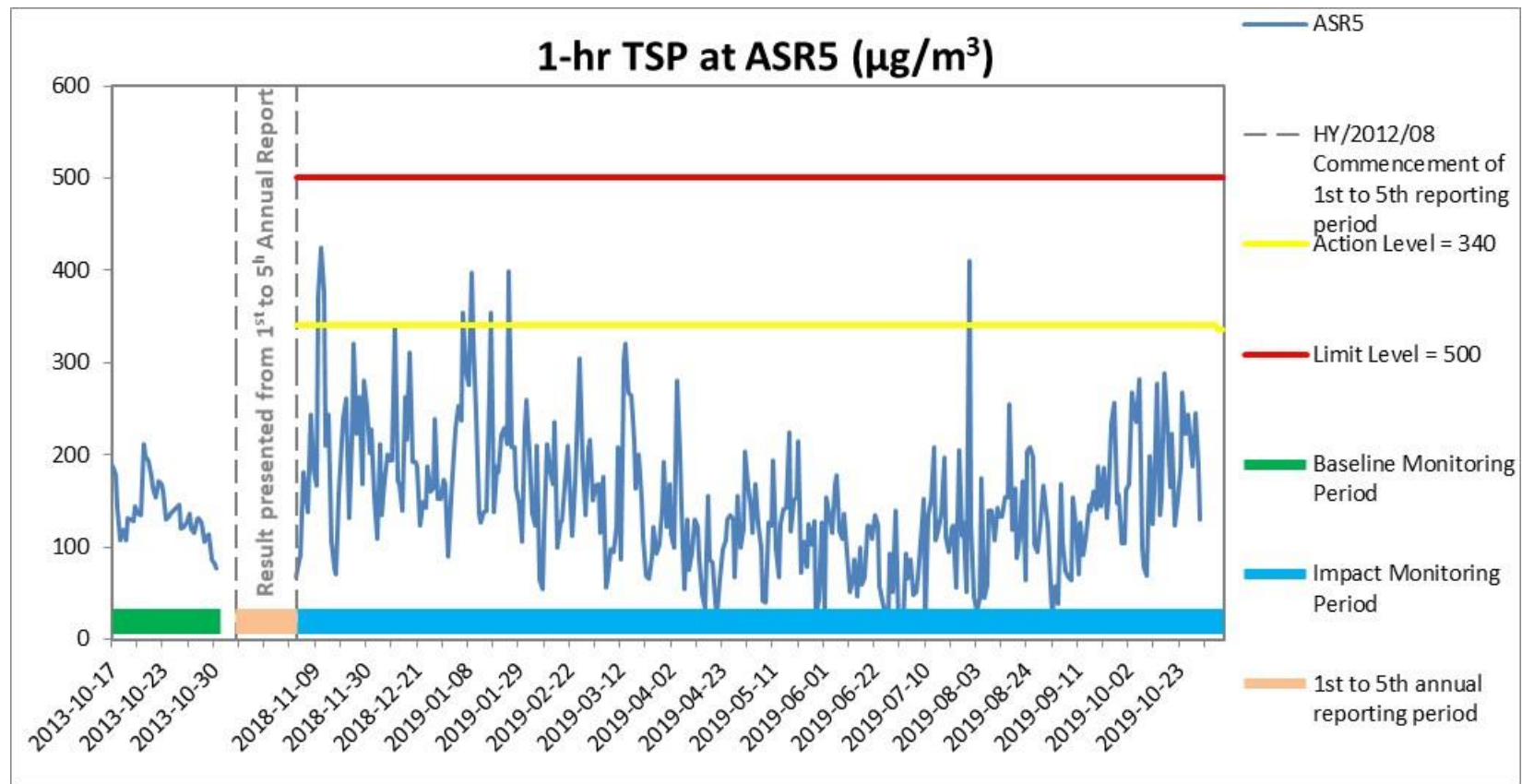


Figure D.4 Baseline & Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR5 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.

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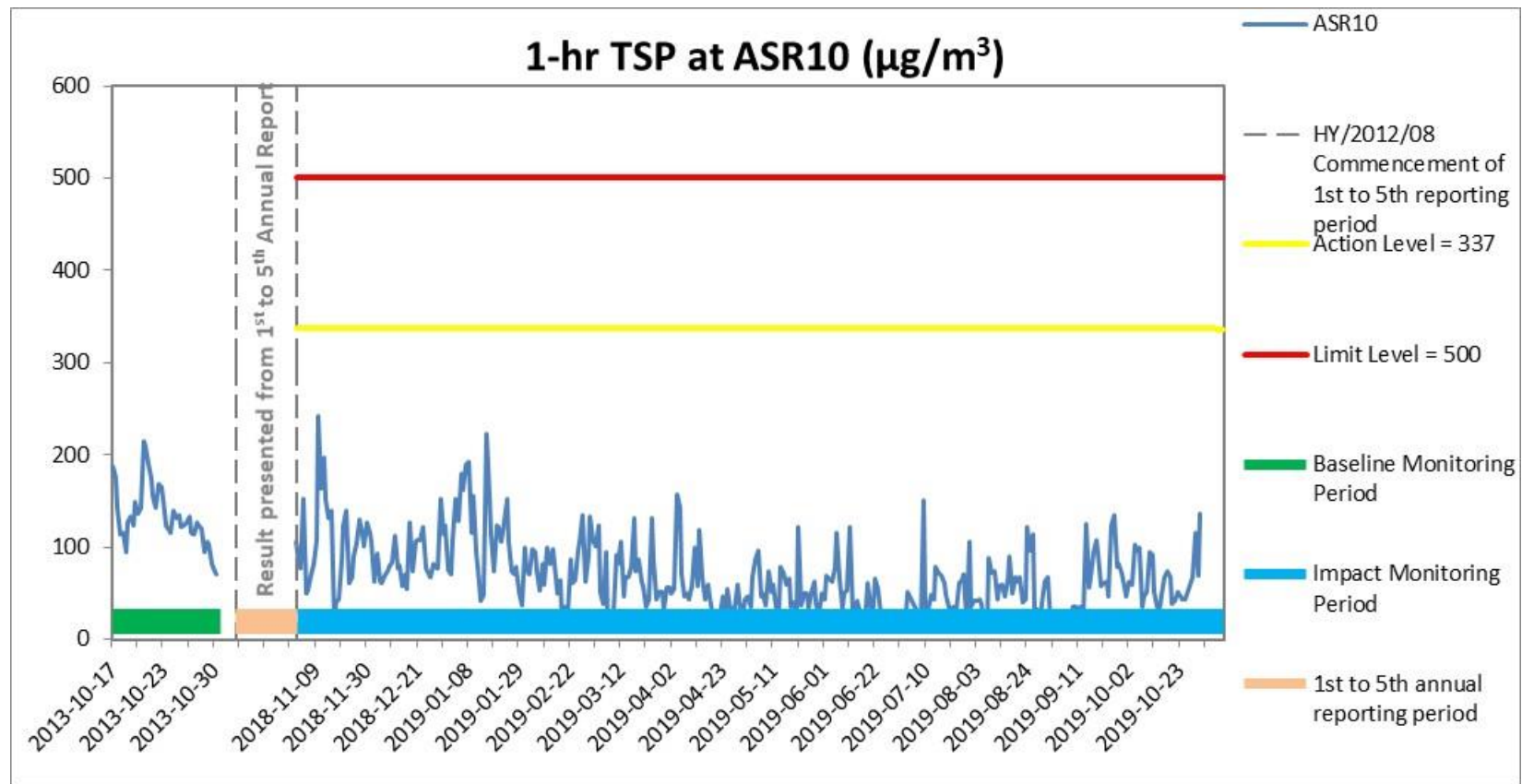


Figure D.5 Baseline & Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR10 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.



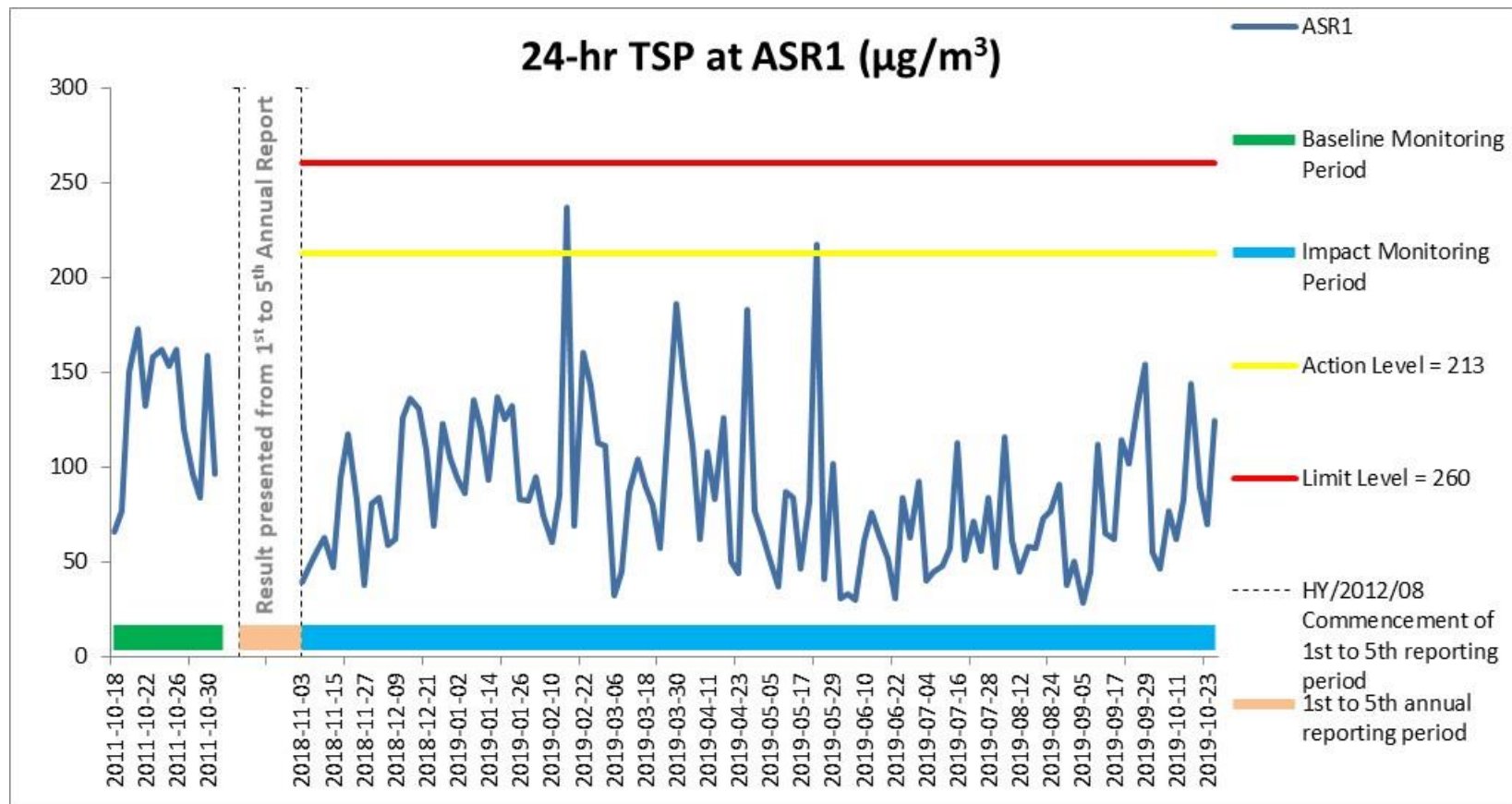


Figure D.6 Baseline & Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR1 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.



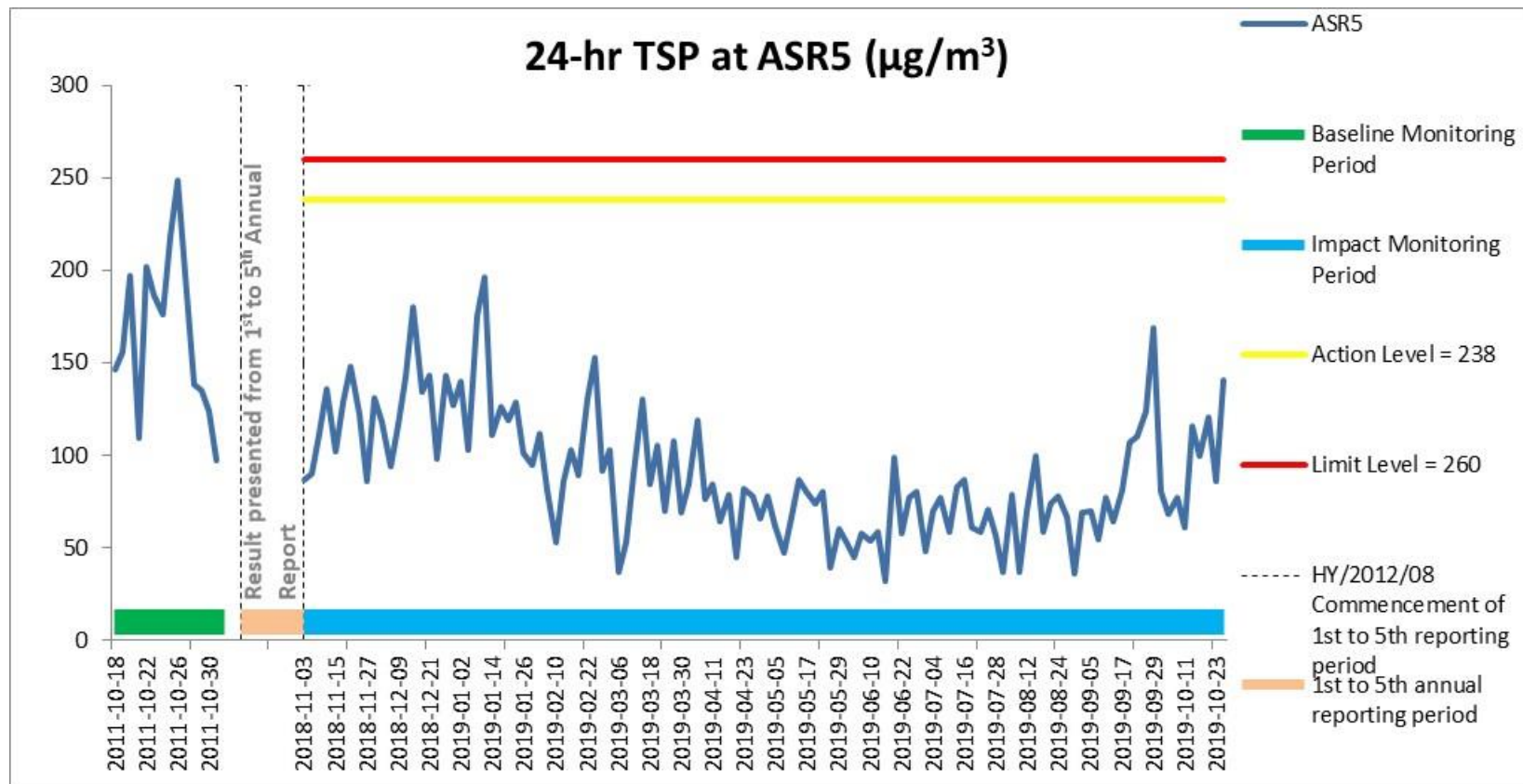


Figure D.7 Baseline & Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR5 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.





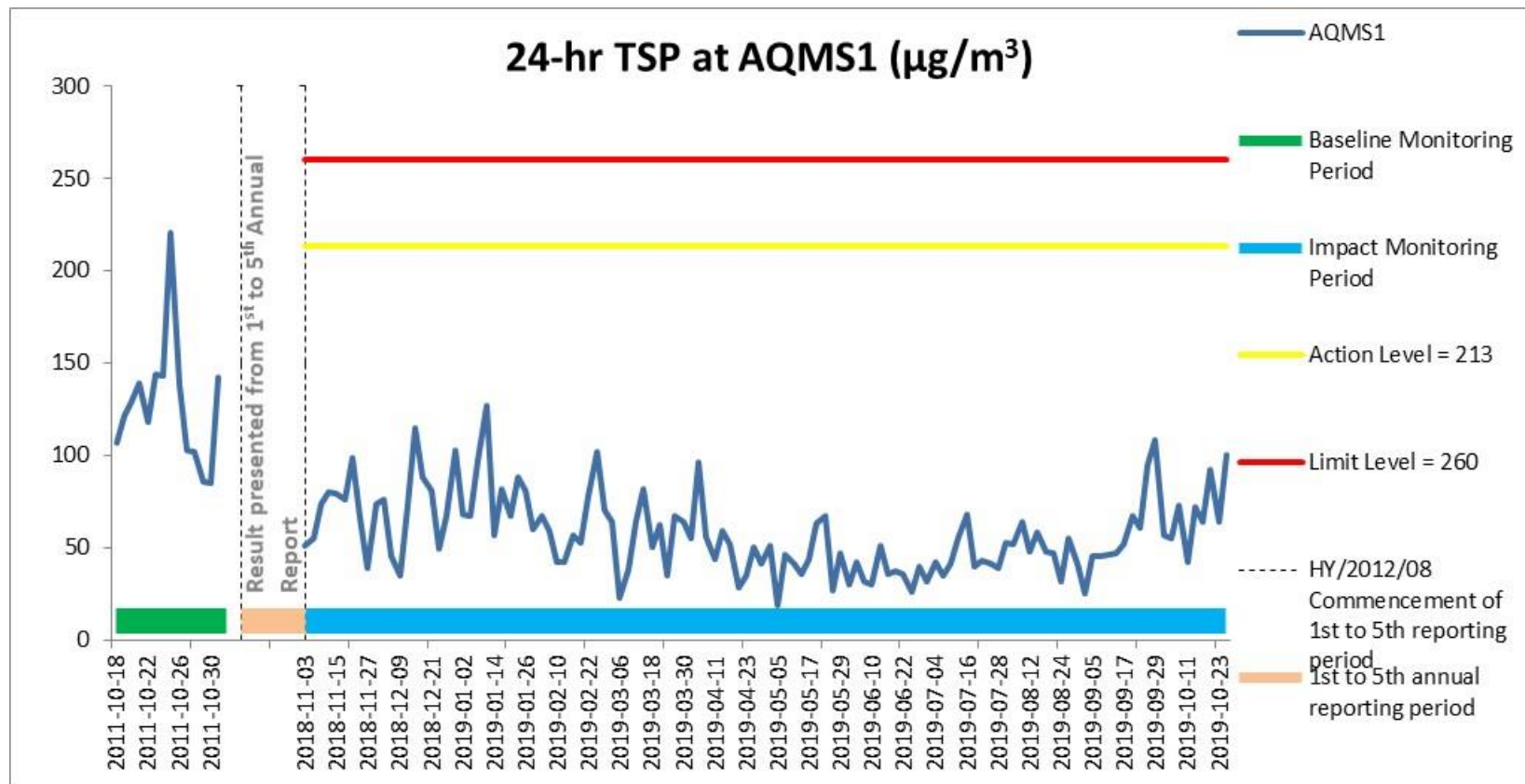


Figure D.8 Baseline & Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at AQMS1 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.



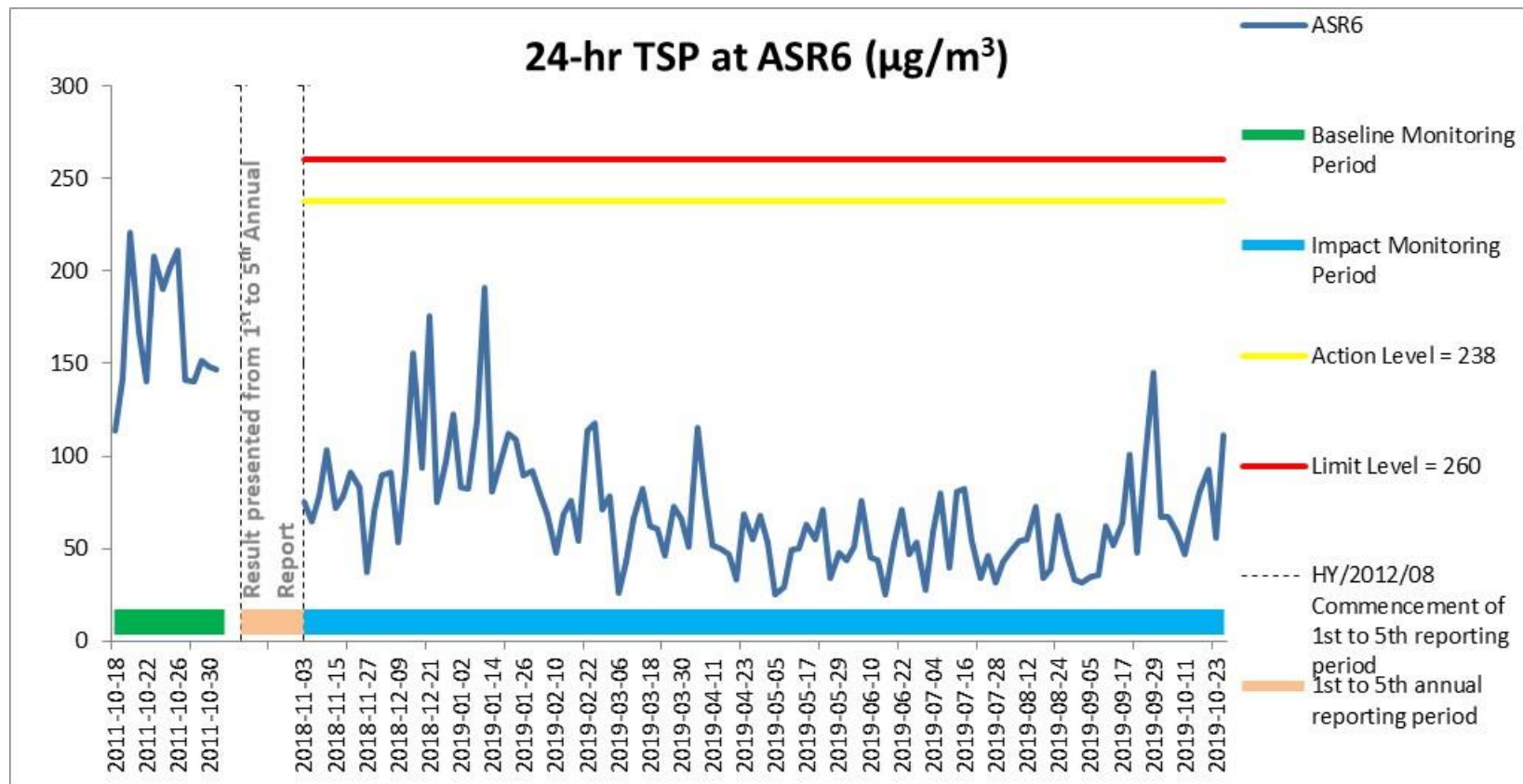


Figure D.9 Baseline & Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR6 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.



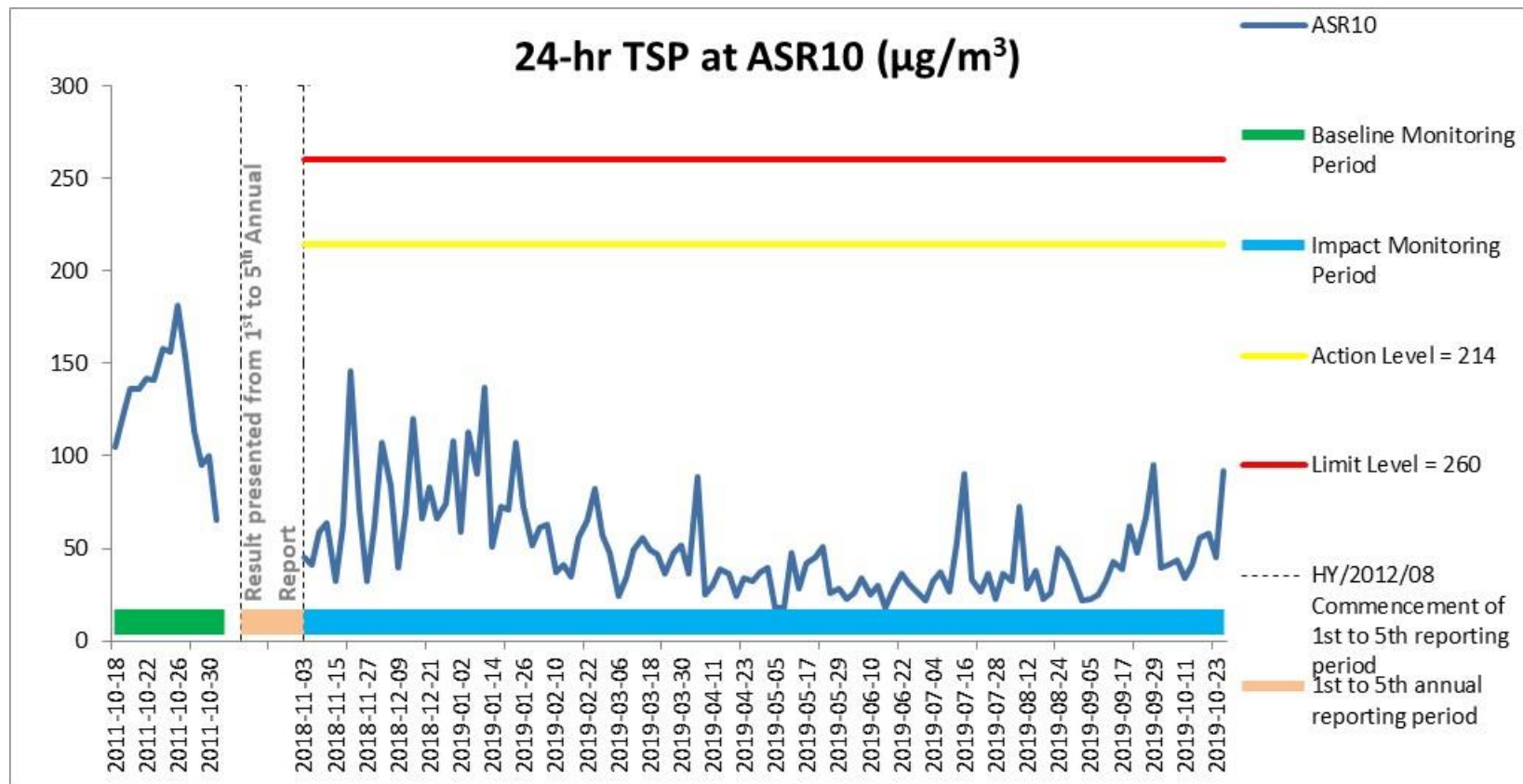


Figure D.10 Baseline & Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR10 between 17 October 2013 and 31 October 2019 during Baseline & Impact Monitoring period. Weather condition within the reporting period varied between sunny to rainy. The overall monitoring results were not affected by weather conditions. Major land-based construction activities included: • Construction of Cross Passage Tympanum - TBM tunnel; Cross Passage Lining Installation - TBM Tunnel; Cross Passage Construction by Pipe Jacking - TBM Tunnel; Corbel & OVHD Construction - TBM Tunnel; Parapet wall and Fireboard Installation - TBM tunnel. Bulk Excavation - Portion N-A; D-wall Construction - Portion N-A, S-A & S-C; RC Structure - Portion N-A & S-A; Construction of Overhead Ventilation Ducts - TBM Tunnel; Construction of Thermal Barrier - TBM Tunnel; Construction of Walkway Corbel & Cover - TBM Tunnel; Demolition of Amenities and Workshop - Portion N-A; ELS construction - Portion S-C; ELS Removal - Portion N-A & S-A; Seawall Inspection and Remedial Works - Portion N-B; Road & Drainage Works - Portion N-A; and Backfilling - Portion S-A & S-C.

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