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Crowe Nest Rail Safety PPE.



| Deicorp Rail Safety Project Hazard Log for Sydney Metro<br>The Fiveways Triangle Crows Nest, NSW<br>391-423 Pacific Highway / 3-18 Falcon Street / 8 Alexander Street |   |  |  |  | TISER Safety Risk Rating |   |                                  |            |             |                 |          |            |               |            |   |            |  |                                     |         |              |
|---|---|--|--|--|--------------------------|---|----------------------------------|------------|-------------|-----------------|----------|------------|---------------|------------|---|------------|--|-------------------------------------|---------|--------------|
| Risk Identification   |   |  |  |  | Control Strategy         |   |                                  |            |             | Risk Assessment |          |            |               |            | Additional Risk Treatment and Response to Control Strategy  |            |  |                                     |         |              |
| Risk Ref  | Main Event  | Impact   | Cause  | Hazard   | Risk Owner               | Existing Controls   | Risk Control Owner               | Likelihood | Consequence | Risk Rating     | Priority | Mitigation | Residual Risk | Task Owner | Notes and Comments  | Action Ref | Action Statement   | Timeframe                           | Status  | Action Owner |
|   |   |  |  |  |                          |   |                                  |            |             |                 |          |            |               |            |   |            |  |                                     |         |              |
| 14  | Flooding of excavation  | Ingress of water into rail tunnels   | Exposed subterranean surfaces and fractured rock zones       | Water penetration through gaskets between mainline rail tunnel precast concrete panel joints | Deicorp                  | 1. Bulk excavation level above top of rail tunnels.<br>2. Tunnels encapsulated by waterproof layer.<br>3. Existing drainage system within rail tunnels.<br>4. Pumps maintained on site.   | Deicorp                          | LS         | CS          | D               | <        | <          | <             |            | A - Need remedial action<br>B - Need remediation<br>C - Only cost effective action<br>D - No further action<br>Note: Employee refers to Sydney Trains and RailCorp staff  |            |  |                                     |         |              |
| 15  | Dewatering of excavation  | Movement of rail tunnels exceeding allowable tolerance                                       | Overconsolidation and / or unequal settlements of foundation | Rail network operates in a degraded state  | Deicorp                  | 1. Monitoring of ground water ingress.<br>2. Rail tunnels in stable rock material.  | Deicorp                          | LS         | CA          | D               | <        | <          | <             |            | Section 6 of the Douglas Partners Report on Dewatering Management Plan Revision 0 dated 8 October 2023 (DMP) documents ground water monitoring. Section 6.6 states that based on the investigation results, groundwater drawdown will occur within the rock units around the perimeter of the site and that accordingly the drawdown is not expected to impact any surrounding sites.   |            |  |                                     |         |              |
| 16  | Access to rail tunnels  | Exposure to hazards in rail tunnels  | Installation of monitoring equipment and inspections         | Personnel struck by rail mounted vehicle (retrieval / slip trip fall)                        | Deicorp                  | 1. Out of operational hours access.<br>2. Rail Industry Safety Induction.<br>3. Access under the control of Systems Connect or Metro Trains Sydney (depending on stage of works)<br>4. Development and induction of personnel into Safe Work Method Statements.<br>5. Power On/Off if required.<br>6. Access managed by Protection Officer Level 4.<br>7. Pre-work trial conducted by Protection Officer from Sydney Metro panel.<br>8. Personal protective equipment worn.<br>9. No metal tapes or ladders used for installation of survey points. | Douglas Partners Geostatic Works | LS         | CA          | D               | <        | <          | <             |            | Consultant must complete and submit to Sydney Metro an application for intensive and non-intensive works (see the case note log) together with Certificate of Competency for public liability insurance. Consultant must submit Safe Work Method Statement and provide details of Protection Officer. Consultant must apply for power outages and permission to connect to Sydney Metro services. Consultant cannot commence without Sydney Metro approval. |            |  |                                     |         |              |
| 17  | Strike of Sydney Metro services located in adjacent streets         | Loss of power or back up power to rail infrastructure  | Location of services unknown                                 | Rail network operates in a degraded state  | Deicorp                  | 1. Conduct survey of all utility service providers and Council services within and adjacent to the site.<br>2. Undertake non-destructive testing and probe exploration where required.  | Deicorp                          | LS         | CS          | D               | <        | <          | <             |            | ScanSearch Underground Services Utility Locating - Report & Service Checklist - NSW 5022 dated 1 September 2023 documents known services.   | T7.1       | Confirm currency of services search.                                 | Prior to commencement of excavation | Pending | Deicorp      |
| 18  | Project cancelled during course of excavation works                 | Ingress of water into rail tunnels through exposed surfaces and through fractured rock zones | Developer or builder become insolvent                        | Rail network operates in a degraded state  | Deicorp                  | 1. Excavation face stabilised ground anchors prior to excavation continuing.<br>2. Ground anchors have minimum 3 year design life.<br>3. Contingency plan to seal exposed horizontal surface areas with bonding concrete layer and shotcrete exposed vertical surfaces.   | Deicorp                          | LS         | CE          | D               | <        | <          | <             |            | Section 6.2 of the Sydney Metro Technical Guidelines nominates a 3 year design life for ground anchors.   |            |  |                                     |         |              |
| 19  | Slimy electrical battery terminals emanating from the rail corridor | Services and building structure deteriorate  | Electrolysis   | Corrosion of underground metallic items around the site                                      | Deicorp                  | 1. Desktop study of slimy currents to be undertaken and recommendations made to preclude impact on building structure and in-ground services.<br>2. Include recommendations to preclude electrolysis in the design.   | Corrosion Control Engineering    | LS         | CA          | D               | <        | <          | <             |            | Section 6 of the Corrosion Control Engineering Electrolysis Risk Desktop Study dated 9 May 2022 documents recommendations for prevention of electrolysis.   |            |  |                                     |         |              |
| 20  | Building maintenance  | Impact on rail operations  | Proximity of building to rail tunnels                        | Rail network operates in a degraded state  | Owner's Corporation      | 1. Complete separation between building and rail corridor.<br>2. Maintenance activities undertaken from public areas on ground surface.<br>3. Anchor points installed to allow abutting or use of swinging stage for cleaning and maintenance.  | Deicorp                          | LS         | CA          | D               | <        | <          | <             |            |   | T8.1       | Incorporate electrolysis prevention recommendations into the design. | Prior to completion of design.      | Pending | Deicorp      |