#### Appendix 15.0 – Job/Workplace Hazard Analysis – Risk Evaluation & Control Measures

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| **Process / Activity** | | | | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Administration / Documentation | | | | Liability Exposures / Non-  Compliance with OHSA / Regulations | Appropriate Required Documentation | L | H | Trailer job board set-up | Y - | Project Superintendent | Job Start Up |
|  | | |  | | Joint Health & Safety Site Com. | L | L | Joint Health & Safety Site Com. | Y - | Project Superintendent/ Manager | Not required @ this time |
|  | | |  | | Worker Trade Committee | L | L | Worker Trade Committee | Y - | Project Superintendent/ Manager | Not required @ this time |
|  | | |  | | Subcontractor Safety Policy  Compliance Check list | L | M | Subcontractor Safety Policy Compliance  Check list | Y - | Project Manager | Prior To Sub Start Dates |
|  | | |  | | Record Keeping | L | H | Tailgates; confined space entry; Engineered  Dwgs.; locates; meeting minutes; WHMIS; etc. | Y - | Foreman | Continuous requirement |
| Company Office | | Generic Office | | | MSD’s | L | H | Awareness training and internal reaction(s) | N | Office Manager | Continuous requirement |
| **Process / Activity** | | **Hazardous Element** | | | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Company Office (cont’d) | |  | | | WHMIS | L | L | Awareness training and internal reaction(s) to mentioned concerns | N | Office Manager | Continuous requirement |
|  | |  | | | Ergonomical Concerns | L | H | Awareness training and internal reaction(s) to mentioned concerns | N | Office Manager | Continuous requirement |
| Emergency Plan | | Emergency on Project | | | People | L | L | Assess situation >1st aid + Emergency care & Transportation > secure scene | Y - | All | Original Plan at onset of Project and then follow-up or additional  requirements at time of "Event" |
|  | |  | | |  |  |  | Appropriate notifications |  | All | At time of Event |
|  | |  | | | Equipment | L | L | Eliminate source >containment > approved disposal |  | All | See above |
|  | |  | | | Materials | L | L | Eliminate source >containment > approved disposal |  | All | See above |
|  | |  | | | Environment | L | L | Eliminate source >containment > approved disposal |  | All | See above |
| **Process / Activity** | | **Hazardous Element** | | | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Environmental Protection | | Erosion | | | Grade works / Land stripping and Cut/Fill | H | H | Erosion Control Mechanisms | Y - Environmental Control Plan / policy | Project Superintendent/ Manager | Continuous requirement |
|  | | Siltation | | | Grade works / Land stripping and Cut/Fill | M | H | Siltation Control Mechanisms | Y - Environmental Control Plan / policy | Project Superintendent/ Manager | Continuous requirement |
| General Construction Issues | | Communication | | | Communication break-down | M | H | Communication Practices | Y - Communication Policy | All | Continuous requirement |
|  | |  | | | Cell Phones and additional distractions | L | H | Electronic equipment and Phone Restrictions | Y- Policy | All | Continuous requirement |
|  | | PPE | | | Contact with individual | L | H | Appropriate PPE | Y - PPE Policy | All | Continuous requirement |
|  | | | | | | | | | | | |
| MSDs |  | | | |  |  |  |  |  |  |  |
|  | Material Properties | | | | WHMIS | L | L | WHMIS Awareness | Y - WHMIS Policy | All / Safety Coordinator | Continuous requirement |
|  | Housekeeping | | | | Slip /Trip/ Falls | M | H | Site planning | Y - Housekeeping Policy | Project Supervisor | Continuous requirement |
|  |  | | | |  |  |  | Housekeeping |  | All | Continuous requirement |
|  |  | | | |  |  |  | Site Access / Maintenance |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | | | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| MSDs (cont’d) | Hazard Reporting | | | | Un-reported Hazards - leading to accidents | L | L | Open Communication Lines / action taken upon reports received / Worker Reps-JHSC / | Y- | All | Continuous requirement |
|  | Accident Reporting | | | | Liability Exposures / Non-  Compliance with OHSA / WSIB, Regulations | L | M | Awareness Training | Y- | All / Safety Coordinator | Continuous requirement |
|  | Refusal Of Work | | | | Immanent risk of injury | L | L | Operational Procedure to remedy the situation | Y- | All | Continuous requirement |
|  | Corrective Actions | | | | Inappropriate Actions in relations to health and Safety | L | L | Application of Internal Responsibility System escalating to application of the progressive corrective actions policy | Y | Project Supervisor/Project Superintendent/Safety Coorindator | Continuous requirement |

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| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | | **Frequency**  **Rating**  **(L-M-H,)** | | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Trucking /  Grade works and Granulars | | Material Delivery | Dumping of Materials / Granulars | | L | | | H | | | Soil Stability / Truck tip-over |  | Project Supervisor | Continuous requirement |
|  |  | |  | | |  | |  | | | Overhead wires |  | Project Supervisor | Continuous requirement |
|  |  | | Delivery Coordination | | L | | | H | | | Arrival Procedures / communication between  all involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | | | | | | Designation of drop zones |  |  |  |
|  |  | | Moving equipment / Back-up  Hazards | | H | | | H | | | Competent signal person | Y - | Project Supervisor | Continuous requirement |
|  |  | |  | | | | | | | | Awareness training | Y - | All / Safety Coordinator | Continuous requirement |
|  |  | | Dust control | | L | | | | | M | Water Truck |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | | | | |  | Mud Mat | | Project Supervisor | Continuous requirement |
| Site Security | Theft | | Equipment | L | | | | | | L | Restricted Access, machinery immobilization |  | All | Continuous requirement |
|  |  | | Materials | L | | | | | | M | Storage locations |  | All | Continuous requirement |
|  |  | | Trailer | L | | | | | | L | Placement, visibility |  | Project Superintendent | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | | | | | | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Site Security (cont’d) | Vandalism | | Equipment, materials, trailer | L | | | | | | L | Placement, visibility |  | All | Continuous requirement |
| Structure Development | Material Delivery | | Delivery Coordination | L | | | | | | L | Arrival Procedures / communication between  all involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  |  | | Moving equipment / Back-up  hazards | H | | | | | | L | Designation of drop zones |  | Project Supervisor | Continuous requirement |
|  |  | |  |  | | | | | |  | Competent signal person | Y - | All | Continuous requirement |
|  |  | |  |  | | | | | |  | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  | Material Handling | | Rigging | M | | | | | | H | Inspection and maintenance of all components on a daily basis; (including safety latches) | Y- | Crane Operator / All | Continuous requirement |
|  |  | |  |  | | | | | |  | Load capacity and ratings |  | Crane Operator | Continuous requirement |
|  |  | |  |  | | | | | |  | Competent personnel to perform rigging tasks |  | Crane Operator / All | Continuous requirement |
|  |  | | Safe Crane Operation | H | | | | | | H | Competent operator | Y - | Project Supervisor | Continuous requirement |
|  |  | |  |  | | | | | |  | Competent signal person |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | **Hazard Risk**  **Rating**  **(L-M-H,)** | | | | | | **Frequency**  **Rating**  **(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Structure Development (cont’d) |  | |  |  | | | | | |  | Crane Inspection and maintenance, records  and documentation, log book |  | Crane Operator | Continuous requirement |
|  |  | | Pinch Points | | M | | | | | H | Hazard awareness through ongoing tailgate training | Y- | All / Safety Coordinator | Continuous requirement |
|  |  | |  | | | | | | | | Personnel Protective Equipment, (gloves,  etc.) |  | All | Continuous requirement |
|  |  | | Overhead Powerlines /  Obstructions | | M | | | L | | | Appropriate Signage | Y - Overhead Power Line Policy | Project Supervisor | Continuous requirement |
|  |  | |  | | | | | | | | Awareness training |  | All / Safety Coordinator | Continuous requirement |
|  | Scaffolding | | Assembly and Removal | | | | M | | M | | Awareness Training | Y – Scaffolding | Project Supervisor | Continuous requirement |
|  | |  | | | |  | |  | | Inspection |  | Competent Worker/ Project Supervisor | Continuous requirement |
|  | Working @ heights | | Fall Protection | | | | H | | L | | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  |  | |  | | | |  | |  | | Guards and Barriers |  | All | Continuous requirement |
|  |  | |  | | | |  | |  | | Travel Restraint |  | All | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Structure Development (cont’d) |  | |  | | | |  | |  | | PPE, fall protection equipment |  | All | Continuous requirement |
|  | Concrete placement | |  | | | | L | | L | |  |  | All | Continuous requirement |
| Traffic Control | Vehicular and Equipment Traffic | | Moving equipment / Back-up hazards | | | | H | | H | | Designation of drop zones |  | Project Supervisor | Continuous requirement |
|  | |  |  | | | |  | |  | | Competent signal person | Y - | Project Supervisor | Continuous requirement |
|  | |  |  | | | |  | |  | | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  | |  | 3rd Party / Motoring Public | | | | M | | L | | Traffic Control Plan | Y- | Project Supervisor | Continuous requirement |
| Tunnels/Shafts Cofferdams | | Tunnels/Shafts/ Cofferdams | Risk of Structural failure | | | | H | | L | | OHSA Construction Regulations |  | Project Superintendent/Safety Coordinator | Continuous requirement |
| Underground Services (Sewer/water) | | Material Delivery | Offloading materials | | | | M | | H | | Material Handling practices – Loader with forks/hoisting rigging |  | Project Supervisor | Continuous requirement |
|  | |  |  | | | |  | |  | | Overhead wires | Y | Project Supervisor | Continuous requirement |
|  | |  | Delivery Coordination | | | | L | | H | | Arrival Procedures/ communication between al involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  | |  |  | | | |  | |  | | Designation of drop zones |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) | |  | Moving Equipment /Back up hazards | | | | H | | H | | Competent signal personal | Y | All | Continuous requirement |
|  | |  |  | | | |  | |  | | Awareness training | Y | All/Safety Coordinator | Continuous requirement |
|  | | Trenching & Excavating | Soil Classification & slope requirements | | | | M | | H | | Competent person to classify soil type as per OHSA | Y | Project Supervisor | Continuous requirement |
|  |  | | Worker protection Scheme; (sloping, trench box, shoring, engineered support system) | | | | H | | H | | Operational determination by superintendent/open cut with appropriate sloping or worker protection system – Trench box or trench wall supports | Y | Operational determination by project supervisor/ superintendent | Continuous requirement |
|  |  | | Access Egress | | | | M | | H | | Sloped and/or stepped embankment or ladders, etc |  | All | Continuous requirement  (sloped, ladders, etc) |
|  |  | | Material Spoil Location | | | | M | | H | | Minimum one meter clear to edge of excavation |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Appropriate Sloping and Spoil Material |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | | Overhead Powerlines/ Obstructions | | | | M | | L | | Appropriate Signage | Y – Overhead Power Line Policy | Project Supervisor / Superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Awareness Training |  | All / Safety Coordinator | Continuous requirement |
|  |  | | Underground Obstructions | | | | M | | M | | Obtaining Utility Locates as Appropriate |  | Project Superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Locating Utilities |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Blanking &/or removal and replacement of Utility Crossings |  | Operational determination by project supervisor/ superintendent | Continuous requirement |
|  | Confined Space | | Existing line break-ins/ Manholes/ valve chamber entry/ repair and emergency works | | | | H | | L | | Competent personnel onsite | Y | Project superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Hazard Assessment, Coordination and Plan development |  | Project Superintendent | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | |  | | | |  | |  | | Appropriate Training for all personnel |  | All/ Safety Coordinator | Continuous requirement |
|  |  | |  | | | |  | |  | | Gas monitor allocation and competent usage |  | Project superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Entry permit and documentation |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Emergency rescue plan and equipment |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Continuous monitoring |  | Project Supervisor | Continuous requirement |
|  | Material Handling | | Rigging | | | | M | | H | | Inspection and maintenance of all components on a daily basis; including safety latches | Y | Crane Operator/All | Continuous requirement |
|  |  | |  | | | |  | |  | | Load capacity and ratings |  | Crane Operator | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/ water) (cont’d) |  | |  | | | |  | |  | | Competent personnel to preform rigging tasks |  | Crane Operator/All | Continuous requirement |
|  |  | | Safe Crane Operation | | | | H | | H | | Competent Operator | Y | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Competent Signal Person |  | Project Supervisor | Continuous requirement |
|  |  | |  | | | |  | |  | | Crane inspection and maintenance records and documentation log book |  | Crane Operator | Continuous requirement |
|  |  | | Pinch Points | | | | M | | H | | Hazard awareness through ongoing tailgate training | Y | All/ Safety Coordinator | Continuous requirement |
|  |  | |  | | | |  | |  | | Personnel Protective Equipment (gloves, etc) |  | All | Continuous requirement |
|  | Pipe and structure Installation | | Material Handling | | | | M | | H | | Awareness Training | Y – Installation Procedures | All/Safety Coordinator | Continuous requirement |
|  | Contaminated Materials | | Methane or other gas releases | | | | L | | L | | Gas detection and monitoring |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | | **Job / Task - Hazard Sub-Category** | | | | **Hazard Risk**  **Rating**  **(L-M-H,)** | | **Frequency**  **Rating**  **(L-M-H,)** | | **Control Factor** | **Safe Operating Procedure or Safe**  **Work Procedure**  **(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | | Contaminated materials – handling, disposal, residuals | | | | L | | L | | PPE or per HAZMAT, tailgate training |  | Project Supervisor | Continuous requirement |
|  | Dewatering | | Environmental Concerns | | | | M | | L | | Siltation Ponds |  | Project Superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Surrounding water table levels |  | Project Superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Temperature variance @ outlet |  | Project Superintendent | Continuous requirement |
|  |  | |  | | | |  | |  | | Soil Stability |  | Project Superintendent | Continuous requirement |
|  | Structure benching and Misc internal works | | Material properties installation requirements | | | | M | | H | | WHMIS and PPE policies | Y | Project Supervisor | Continuous requirement |
|  |  | | Confined Space | | | | H | | L | | See Confined Space Section | Y | Project Supervisor | Continuous requirement |
|  | Water main testing and Misc Works | | Failure due to pressures/chlorination | | | | L | | H | | Awareness Training/ Subcontractor procurement |  | Project Superintendent | Continuous requirement |