Installation of Pipes into Pits

Issue date: 08/04/08
Review date: 20/02/11

SWMS number:
SMS-06-SW-1023

SWMS Name:
Installation of Pipes into Pits

SWMS Team:
Signal Review Team

Custodian (Position):
Signal Services & External Resources Manager

Assumptions:
Site specific risks are addressed and assessed in pre- work briefing

Approving Authority (Position):
Safety and Quality Manager Commercial / Renewals

Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)
Signal Services & External Resources Manager & SEQ Coordinator Asset Management Group Commercial / Renewals

Applicable Standards, Codes of Practice and guidance:
- OH&S Act 2000
- OH&S Regulation 2001
- Rail Safety Regulation 2003
- RailCorp Network Rules & Procedures
- RailCorp Safety Management System.
- MSDS for all chemicals and hazardous Substances used on site
- Workplace communication protocol.
- National Code of Practice for Manual Handling [NOHSC:2005 (1990)]
- WorkCover Code of Practice Excavation 2000
- AS/NZS 1891 Industrial fall arrest systems

Equipment/Plant/Tools:
- Excavator, Backhoe, Chains, Slings
- Hand tools. Trowel
- Electric Power Tools, Leads, Generators
- Approved Cable Locator ,Gas monitor / detector & confined space equipment
- Timber Ladder, Portable step ladder
- Clipsal Jointing Cement Type N, Cement
- Spill Kit
- PVC pipes and concrete pits
- Kronenflex Waffer cutting wheel

Records/Reporting:
- Worksite Protection Plan
- Pre-work Brief
- Site Specific Management Plan
- Electrical Test Tags
- Excavation Work Permit
- Environmental Protection Plan
- Daily Plant Checklist
- Services searches
- Traffic Control Plan
- Hazardous Substance Register, MSDS

Permits/licences required:
- Confined Spaces Certificate
- Traffic Controller Certificate
- Safety Standards Work Permit A10-07-N036

Personal Protective Equipment required:
- Safety Boots
- High Visibility Vests
- Hardhats
- Protective Clothing
- Safety Glasses, full face high impact shield

And as specified below.

- P2 Dust Masks
- Fall Arrest Devices
- Gloves, Kevlar Gloves
- Ear Muffs, Ear Plugs
- During all Site Works a FIRST AIDER MUST be Present

Inspection requirements
Nil

Service schedule:
Nil

MIMS or METRE Ref:
Nil

Training/Qualification required:
- Construction Industry Induction
- Track Safety Awareness

or
RISI (Rail Industry Safety Induction)

And as specified below.
- Confined Spaces Entry

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1	Supervisor undertakes site pre-work briefing and gives local induction.	Staff not Listening to Pre-Work Brief	B -	Identify all hazards, Staff to ensure they are properly Briefed as to risks involving Worksite.	D	Team Leader / Work Group Leader / All Staff	Pre-Work Briefing SMS-06-FM-0163
2	Supervisor verifies competence of personnel doing the task and currency of permits for work.	Expired Competency Cards & Permits, Unqualified type of Personnel for the Task.	B -	Visual Inspection of Personnel Competency Cards & Currency of Permits	D	Team Leader / Work Group Leader	Safety Training & Competence SMS-11-SR-0128
3	Review SWMS and confirm it is current.	Use of a SWMS that is out of date	C -	Ensure SWMS is current and up to date.	D	Team Leader / Work Group Leader	SWMS & SWI's SMS-06-PR-0023
4	Verify that plant and equipment for the task is fit-for-purpose.	Plant & Equipment kept in poor working condition	C +	Conduct a Daily Plant Checklist	D	All Staff	Plant SMS-06-GD-0225
5	Locate other services	1. Injury due to contact with hazardous services	B+	Refer to valid cable search for internal and external (DBYD). Inspect for any overhead wires / hazards.	C-	Team Leader / Work Group Leader	Excavation & Earthworks SMS-06-GD-0378
		2. Ultra Violet injuries	B	Use P.P.E i.e. Cover/Protect exposed skin – clothing, sunscreen, hat, tinted safety eyewear, take breaks.	D	All Staff	Workplace Risk Management SMS-06-PR-0104
6	Excavate Hole	Entrapment due to trench collapse.	A	Shore or batter unstable trench. No persons allowed in unstable trench. Minimise plant movement around trench area.	C-	Team Leader / Work Group Leader / All Staff, Plant Operators	Excavation & Earthworks SMS-06-GD-0378
		Slip, trip, fall when moving in and out of trench.	B+	Provide good trench – earth ramp / steps. Portable step ladder (extend ladder 1m above trench).	D	All Staff	
		Contact by machine	A	Establish eye contact with operator and have him/her stop the machine if you have to work inside the operating reach of the machine and wear hard hat. Secure work site to prevent unauthorised access.	D	Team Leader / Work Group Leader / All Staff, Plant Operators	Excavation & Earthworks SMS-06-GD-0378 Pre work briefing SMS-06-FM-0163 Safety Communication. SMS-10-SR-0040

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6	Excavate Hole (Cont…….)	Fuel Spillage	B+	1. Turn off plant being fuelled. 2. Spill kit on site 3. Turn off mobile phone's 4. No smoking First aid kit with burns kit.	D	Team Leader / Work Group Leader, Plant Operators	Plant SMS-06-GD-0225 Environmental Procedures
7	Install Pit	Contact by machine	A	Establish eye contact with operator and have him/her stop the machine if you have to work inside the operating reach of the machine and wear hard hat. Secure work site to prevent unauthorised access.	D	Team Leader / Work Group Leader / All Staff, Plant Operators	Excavation & Earthworks SMS-06-GD-0378 Pre work briefing SMS-06-FM-0163 Safety Communication. SMS-10-SR-0040
		Entrapment due to trench collapse	A	Shore or batter unstable trench. No persons allowed in unstable trench. Minimise plant movement around trench area.	C-		Excavation & Earthworks SMS-06-GD-0378
		Injury due to Broken sling/chain	A	Only use lifting chains/slings that have been checked and tagged (for the specific weight) Visually check chains/slings for wear and tear	D	Team Leader / Work Group Leader, Plant Operators	Lifting Equipment Inspection SMS-16-FM-0089
		Hit by a load	A	Use correct slings of length, inspected & tagged. Set up exclusion zone of six meters. Be alert at all phases of lifting. All persons to wear hard hat. The area between the load and all other obstacle is to be kept clear. Traffic and pedestrian controls to be implemented as required.	D	Team Leader / Work Group Leader / All Staff, Plant Operators , RTA Traffic Management Controller accreditations as required.	Lifting Equipment Inspection SMS-16-FM-0089 PPE SMS-06-GD-0323 Work on/near Public Roads SMS-06-GD-0372
8	Remove required "knock out area"	Eye Injury	C-	Wear mandatory eye protection.	D	All Staff	PPE SMS-06-GD-0323 MSDS requirements.
		PVC/concrete dust	C+	Wear disposable mask cutting PVC pipes and concrete pits	D		

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9	Back fill Hole/Trench	Contact by machine	A	Establish eye contact with operator and have him/her stop the machine if you have to work inside the operating reach of the machine and wear hard hat. Secure work site to prevent unauthorised access.	D	Team Leader / Work Group Leader / All Staff, Plant Operators	Excavation & Earthworks SMS-06-GD-0378 Pre work briefing SMS-06-FM-0163 Safety Communication. SMS-10-SR-0040
		Muscle Injury	B-	Clear area before lifting. Warm up stretch. Don't over strain. Use manual handling techniques	D	All Staff	Manual Handling Guide SMS-06-GD-0001
10	Install & Connect Pipe	Muscle Injury	B-	Clear area before lifting. Warm up stretch. Don't over strain. Use manual handling techniques – 2 person lift.	D	All Staff	Manual Handling Guide SMS-06-GD-0001
		Entrapment due to trench collapse	A	Shore or batter unstable trench. No persons allowed in unstable trench. Minimise plant movement around trench area.	C-	Team Leader / Work Group Leader / All Staff, Plant Operators	Excavation & Earthworks SMS-06-GD-0378
		Exposure to glue fumes/vapours	C-	Use in well vented area. Use away from ignition sources. Wear gloves and eye protection.	D	All Staff	Hazardous Substances SMS-06-GD-0199 MSDS
11	Cut pipes (in pits) to suit	Fall Injury when accessing pit	B+	Use designed access rungs. If portable step ladder (extend ladder 1m above trench). If Pit is greater than 2m deep then use fall arrest equipment	D	Team Leader / Work Group Leader / All Staff,	Ladder /Step Ladders SMS-06-SW-0264 Fall Arrest Systems SMS-06-GD-0241
		Eye Injury	C-	Wear mandatory eye protection.	D	All Staff	PPE SMS-06-GD-0323

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11	Cut pipes (in pits) to suit (Cont…….)	Cut Injury(Saws)	A	All guards to be left on equipment. Ensure sufficient room to operate equipment. Inspect equipment blades /cutting disc etc. before use. Ensure blades/discs are suitable for job as per operation manual	C-	BCC1005A Team Leader / Work Group Leader	Plant SMS-06-GD-0225
		Electric shock	A	1. Have all leads and equipment checked at required intervals 2. Visual check leads and equipment before use 3. Ensure all generators are fitted with residual current devices 4. Do not use in wet weather 5. Ensure all leads are clear of the ground Ensure isolation of cables for equipment before work commences	D	Team Leader / Work Group Leader / All Staff,	Work Around Elect. Equip. SMS-06-GD-0268
		Exposure to atmospheric contaminants	A	Review area to identify if a confined space is present. If a confined space then only staff with “Confined Spaces” training to be used and all rules to be adhered to.	D	Team Leader / Work Group Leader IG 09 – Working in Confined Spaces BCC2002B	Confined Space Checklist SMS-06-FM-0038 Confined Spaces SMS-06-GD-0035 Confined Space Entry Permit SMS-06-FM-0037
		Exposure to excessive noise	B+	Wear appropriate hearing protection when exposed to excessive noise from powered hand tools, pneumatic tools, etc.	D	All Staff,	PPE SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		PVC/concrete dust	C+	Person who are exposed to dust are to wear disposable mask.	D		Pre work Briefing SMS-06-FM-0163 PPE SMS-06-GD-0323

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12	Seal up Pits	Exposure to Atmospheric contaminants	A	Review area to identify if a confined space if present If a confined space then only staff with "Confined Spaces" training to be used and all rules to be adhered to.	D	Team Leader / Work Group Leader IG 09 – Working in Confined Spaces BCC2002B	Confined Space Checklist SMS-06-FM-0038 Confined Spaces SMS-06-GD-0035 Confined Space Entry Permit SMS-06-FM-0037
	Mix and Install mortar	1a. Muscle Injury	B-	Clear area before lifting. Warm up stretch. Don't over strain. Use manual handling techniques	D	All Staff	Manual Handling Guide SMS-06-GD-0001
		2a. Concrete dust	C+	Use in well-vented area. Wear P2 mask if dust is excessive.	D		PPE SMS-06-GD-0323 Concrete MSDS
		3a. Skin irritation	C+	Use small trowel and mixing bucket / surface. Use general purpose gloves	D		
		4a. Head Injury	C+	Hard hat must be worn	D		PPE SMS-06-GD-0323
☐	Site specific hazards						

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NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS

Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date	Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency						
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year
		Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations
		Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities
			F1	F2	F3	F4	F5	F6
Consequence			Incredible	Improbable	Remote	Occasional	Probable	Frequent
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-

Extreme
High
Medium
Low

Definition for Use - Regional & Local level (Workplace)

Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.

As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.

There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive liklihood in the workplace. Choose the most appropriate.

To score the risk, follow the steps:

1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matricies).

2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)

3. Score the risk using the combination of likelihood and consequence ranking.

Note: Where there are a range of credible consequences which may lead to a different level or risks and/or where the controls may be different. It may be useful to score the risk more than once.