



Pollution Incident Response Management Plan

Sydney Metro City & Southwest

Information

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1. Introduction and purpose

The Sydney Metro Project is a scheduled premise-based activity, under Schedule 1 of the *Protection of the Environment Operations (POEOA) Act 1997* as Rail Systems Activities, and as such is required to prepare a Pollution Incident Response Management Plan (PIRMP).

The purpose of this PIRMP is to meet the requirements of the POEOA, and the associated *Protection of the Environmental Operations (General) Regulation (POEO(G)R) 2009*, relating to pollution incidents, response and notification. The plan has been to meet the requirements of, and in accordance with:

- Protection of the Environment Operations (POEOA) Act 1997;
- Protection of the Environment Legislation Amendment Act 2011 (POELA Act);
- Protection of the Environmental Operations (General) Regulation (POEO(G)R) 2009; and
- NSW EPA Environmental Guidelines: Preparation of pollution incident response management plans.

Table 1 and Table 2 below detail where all the required provisions are addressed within this PIRMP.

Table 1: POEO Act and POELA Act Compliance

POEOA SECTION	SECTION DETAIL	HOW / WHERE ADDRESSED
148	Pollution incidents causing or threatening material harm to be notified: (1) Kinds of incidents to be notified This Part applies where a pollution incident occurs during an activity so that material harm to the environment is caused or threatened. (2) Duty of person carrying on activity to notify A person carrying on the activity must, immediately after the person becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it. (3) Duty of employee engaged in carrying on activity to notify A person engaged as an employee in carrying on an activity must, immediately after the person becomes aware of the incident, notify the employer of the incident and all relevant information about it. If the employer cannot be contacted, the person is required to notify each relevant authority. (3A) Duty of employer to notify Without limiting subsection (2), an employer who is notified of an incident under subsection (3) or who otherwise becomes aware of a pollution incident which is related to an activity of the employer, must, immediately after being notified or otherwise becoming aware of the incident, notify each relevant authority of the incident and all relevant information about it. (4) Duty of occupier of premises to notify the occupier of the premises on which the incident occurs must, immediately after the occupier becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it.	MTS has undertaken incident classification based on accepted industry standards, including that used in the construction phase of the Sydney Metro Project, and other rail project throughout the Sydney metropolitan area. The classification of incidents is based on the severity and extent of the impact of the incident. The notification of the incidents required under SS. 148 will be tailored according to the incident classification. See Section 2 of the PIRMP.





	afterwards, that information must be notified in accordance with section 148 immediately after it becomes known.	
150	 Fire and Rescue NSW. Relevant information to be given: The relevant information about a pollution incident required under section 148 consists of the following: the time, date, nature, duration and location of the incident, the location of the place where pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known, the circumstances in which the incident occurred (including the cause of the incident, if known), the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known, other information prescribed by the regulations. (2) The information required by this section is the information known to the person notifying the incident when the notification is required to be given. (3) If the information required to be included in a notice of a pollution incident by subsection (1) (c), (d) or (e) is not known to that person when the initial notification is made but becomes known 	MTS will report all incidents required to be reported under SS. 148 and will provide the information required under SS. 150 in the format provided in the pro-former report provided in Appendix B to the PIRMP. All incidents that occur will be managed in the MTS online Project Management System (PMS) which will include prompts for environmental incidents, including the form contained in Appendix B to ensure that all reporting requirements of SS. 150 are captured and met. Where information is unavailable at the time of initial notification of the incident, MTS will follow up as additional information is available to ensure complete compliance with SS.150(3).
	that, if a pollution incident occurs in carrying on the activity of the employer or occurs on the premises, as the case may be, the persons engaged by the employer or occupier will, immediately, notify the employer or occupier of the incident and all relevant information about it. (6) Extension of duty to agents and principals This section extends to a person engaged in carrying on an activity as an agent for another. In that case, a reference in this section to an employee extends to such an agent and a reference to an employer extends to the principal. (7) (Repealed) (8) Meaning of "relevant authority" In this section relevant authority means any of the following: • the appropriate regulatory authority, • if the EPA is not the appropriate regulatory authority—the EPA, • if the EPA is the appropriate regulatory authority—the local authority for the area in which the pollution incident occurs, • the Ministry of Health, • SafeWork NSW as referred to in clause 1 of Schedule 2 to the Work Health and Safety Act	



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	(1) A person is not required to notify a pollution incident under section 148 if the person is aware that the incident has already come to the notice of each person or authority required to be notified. (2) A person is not required to notify a pollution incident under section 148 if the incident is an ordinary result of action required to be taken to comply with an environment protection licence, an environment protection notice or other requirement of or made under this Act.	
151A	EPA may require other notification of pollution incidents. (1) This section applies to the occupier of premises where a pollution incident has occurred during an activity so that material harm to the environment is caused or threatened. (2) The EPA may direct a person to whom this section applies to notify such other persons of the incident as the EPA requires. (3) The direction is not required to be given in writing. (4) The direction may specify the manner or form of notifying the pollution incident and the information that must be provided. (5) The direction may require that an initial verbal notification be followed by written notification. (6) A person must not fail to comply with a direction given under this section. (7) (Repealed) (8) If a direction under this section is given to a person who is carrying out an activity, is engaged as an employee in carrying out an activity, or is the employer of such a person, the obligations under this section are in addition to, and not in derogation of, the obligations under section 148 (except as provided by section 151 (1)).	MTS has nominated the Safety, Health, Environment and Quality (SHEQ) Director and the Environment and Sustainability (E&S) Manager as being the representatives of the EPL, for the purposes of incident notification. If the EPA issues a direction to the SHEQ Direction or the E&S Manager, they will notify the incident in accordance with the provisions of this section (SS. 151A) as well as SS. 148 and 150 (see above). See Section 3 of the PIRMP.
Part 5.7A Duty to	p prepare and implement pollution incident respon	se management plans
153A	The holder of an environment protection licence must prepare a pollution incident response management plan that complies with this Part in relation to the activity to which the licence relates.	This PIRMP addresses all the required legislative requirements of the Protection of the Environment Operations (POEO) Act 1997.
153B	EPA may direct other persons to prepare pollution incident response management plan (1) The EPA may, in accordance with the regulations, require the occupier of premises at which industry is carried out to prepare a pollution incident response management plan that complies with this Part in relation to activities at the premises. (2) A person must not fail to comply with such a requirement. (3) The regulations may make provision for or with respect to:	A PIRMP is being prepared under SS. 153A of the POEO Act, and therefore this section is not applicable.



	 the class or classes of premises, or industries carried out at premises, that may be the subject of a requirement to prepare a pollution incident response management plan, and the circumstances in which some or all premises within those classes may be the subject of a requirement to prepare a pollution incident response management plan. 	
153C	 A pollution incident response management plan must be in the form required by the regulations and must include the following: the procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to: the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and any persons or authorities required to be notified by Part 5.7, a detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution, the procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made, any other matter required by the regulations. 	This PIRMP has been prepared to address all relevant provisions of the POEO Act. SS. 153C is addressed as follows: Section 3 of this PIRMP; Section 5 of this PIRMP; Section 5 of this PIRMP; This PIRMP. The PIRMP is in written form as required by Clause 98N of the POEO Regulation 2009.
153D	Keeping of plan A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is kept at the premises to which the relevant environment protection licence relates, or where the relevant activity takes place, and is made available in accordance with the regulations (Clause 98D).	Copies of this PIRMP will be kept and made available as follows: On the MTS Environmental Management System (EMS), within the Project-Wide PMS; and As a hard copy at the MTS head office at within the Sydney Metro Trains Facility at 47 Tallawong Road, Rouse Hill; A summary (as per CI 98D(3) of the POEOR) of the PIRMP will be made available on the MTS Sydney Metro website; and Will be made available to the EPA, other agencies and stakeholders on request. See Section 7 of the PIRMP.





153E	Testing of plan A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is tested in accordance with the regulations (Clause 98E).	Testing of this PIRMP will be undertaken in accordance with Clause 98E of the POEOR, annually, and within one month of any pollution incident, and as part of the MTS continual improvement program. See Section 7 of the PIRMP.
153F	Implementation of plan If a pollution incident occurs during an activity so that material harm to the environment (within the meaning of section 147) is caused or threatened, the person carrying on the activity must immediately implement any pollution incident response management plan in relation to the activity required by this Part.	MTS has a Project-Wide Incident Management Manual (IMM) which includes all relevant requirements required by the legislation and contained within this PIRMP. The IMM is an all-encompassing incident response management plan, to ensure that all persons carrying out activities are aware of all the safety, health and environmental obligations required to be met in the event of an incident. See Section 5 of the PIRMP.

Table 2: POEO(G)R Compliance

POEO(G)R SECTION	SECTION DETAIL	HOW / WHERE ADDRESSED
98C	Additional matters to be included in plan Note. See also section 153C (a)–(c) of the Act. (1) General The matters required under section 153C (d) of the Act to be included in a plan are as follows: • a description of the hazards to human health or the environment associated with the activity to which the licence relates (the relevant activity), • the likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood, • details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity, • an inventory of potential pollutants on the premises or used in carrying out the relevant activity, • the maximum quantity of any pollutant that is likely to be stored or held at particular locations (including underground tanks) at or on the premises to which the licence relates, • a description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident,	The additional matters of required under CI. 98C are addressed within the PIRMP as follows: Risk Assessment – Section 2 of this PIRMP; Risk Assessment – Section 2 of this PIRMP; Management – Section 5 of this PIRMP; Pollutant inventory – Section 5 of this PIRMP; Pollutant inventory – Section 5 of this PIRMP; Pollutant inventory – Section 5 of this PIRMP; Contact Details for MTS and Key Stakeholders – Section 3 of this PIRMP; Contact Details for MTS and Key Stakeholders – Section 3 of this PIRMP;



	the names, positions and 24-hour contact details of those key individuals who:	Community Response – Section 4 of this PIRMP;
	 are responsible for activating the plan, and are authorised to notify relevant authorities under 	Management – Section 5 of this PIRMP;
	section 148 of the Act, and are responsible for managing the response to a	Premise and Environmental Aspects Maps – Appendix C and
	pollution incident, the contact details of each relevant authority referred	D of this PIRMP;
	to in section 148 of the Act, details of the mechanisms for providing early warnings	Management – Section 5 of this PIRMP;
	and regular updates to the owners and occupiers of premises in the vicinity of the premises to which the	Training and Awareness – Section 6 of this PIRMP;
	licence relates or where the scheduled activity is carried on,	Document Revision Register – Appendix E of this PIRMP;
	the arrangements for minimising the risk of harm to any persons who are on the premises or who are	Document Revision Register – Appendix E of this PIRMP;
	present where the scheduled activity is being carried on,	Continual Improvement and
	a detailed map (or set of maps) showing the location of the premises to which the licence relates, the	Access to Plan Review – Section 7 of this PIRMP.
	surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants	
	on the premises and the location of any stormwater drains on the premises,	
	a detailed description of how any identified risk of harm to human health will be reduced, including (as a	
	minimum) by means of early warnings, updates and the action to be taken during or immediately after a	
	pollution incident to reduce that risk, the nature and objectives of any staff training program	
	in relation to the plan,	
	the dates on which the plan has been tested and the name of the person who carried out the test,	
	 the dates on which the plan is updated, the manner in which the plan is to be tested and 	
	maintained.	
98D	(1) A plan is to be made readily available:	Section 7 of the PIRMP.
	to an authorised officer on request, and at the premises to which the relevant licence relates, or	
	where the relevant activity takes place, to any person who is responsible for implementing the plan.	
	(2) A plan is also to be made publicly available in the following manner within 14 days after it is prepared:	
	in a prominent position on a publicly accessible website of the person who is required to prepare the plan,	
	if the person does not have such a website—by providing a copy of the plan, without charge, to any person who makes a written request for a copy.	
	(3) Subclause (2) applies only in relation to that part of a plan that includes the information required under:	
	section 153C (a) of the Act, and	
	clause 98C (1) (h) and (i) or (2) (b) and (c) (as the case requires).	
	(4) Any personal information within the meaning of the Privacy and Personal Information Protection Act 1998 is not required to be included in a plan that is made	





	available to any person other than a person referred to in subclause (1).	
98E	 (1) The testing of a plan is to be carried out in such a manner as to ensure that the information included in the plan is accurate and up to date and the plan is capable of being implemented in a workable and effective manner. (2) Any such test is to be carried out: 	Continual Improvement and Review – Section 7 of this PIRMP.
	 routinely at least once every 12 months, and within 1 month of any pollution incident occurring in the course of an activity to which the licence relates so as to assess, in the light of that incident, whether the information included in the plan is accurate and up to date and the plan is still capable of being implemented in a workable and effective manner.] 	

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2. Risk assessment and mitigation

2.1. Risk assessment

MTS has undertaken a risk assessment for the Operation and Maintenance (O&M) Phase of the Sydney Metro Project as part of the preparation of the Operations Phase Environment and Sustainability Plan (OPESP). This risk assessment is built upon the environmental aspects identified for the operation and maintenance of the network. The incidents identified as posing a risk of material harm to human health and / or the environment have been summarised in Table 3 below. The table includes:

- a description of the incident;
- the consequences:
- the controls/treatments of the risk
- the likelihood of it occurring;
- the consequence of it occurring; and
- an overall risk rating for the type of incident (low, moderate (mod), high, very high, or extreme).

The risk rating is based on a combination of the likelihood versus the consequence of the potential incident. Details of the rating system are contained in Appendix F.





Table 3: Environmental Risk Assessment

INCIDENT NUMBER		CATEGORY	CAUSES	CONSEQUENCES	CONTROLS/TREATMENTS	CONSEQUENCE LEVEL	LIKELIHOOD	RISK RATING		
	Noise and Vibration									
1		Surface Works	Repair and maintenance works (including tamping, ballast cleaning, etc) are undertaken without:	- Public complaint.	- Modelling to be conducted to identify possible sensitive receivers, measures to be put in place to mitigate.	С3	L5	Medium		
			 proper notification to the community; 	- Infringement notice from regulators.	- Community notification of maintenance and repair works to be undertaken in accordance with EPL provisions and Deed requirements.					
			 implementation of mitigation measures. 		- Mitigation measures to be implemented, including respite, as determined through noise assessment.					
				- EPA applies stricter requirements to Maintenance & Repair works through the EPL (potentially restricting operating hours).	- Noise and Vibration Management Plan.					
		Surface Works	Repair and maintenance works (including tamping, ballast cleaning, etc) are undertaken without:		- Modelling to be conducted to identify possible sensitive receivers, measures to be put in place to mitigate.	C4	L5	Low		



			- proper notification to the community;	- Cosmetic damage.	- Community notification of repair and maintenance works to be undertaken in accordance with EPL provisions and Deed requirements.			
			- implementation of mitigation measures.		- Mitigation measures to be implemented, including respite, as determined by Vibration assessment.			
				- Infringement notice from regulators.	- Greater separation of vibratory works were possible.			
				- EPA applies stricter requirements to Maintenance & Repair works through the EPL (potentially restricting operating hours).	- Noise and Vibration Management Plan.			
	Ground borne Noise is greater than the Operational Noise and Vibration models predicted in Noise and	is greater operation ne tional and on models ted in and on gement	- Modelling used during D&C Phase had incorrect inputs.		- Performance criteria established in ROMs.	C4	L5	Low
			- The "as built" Project did not meet the design requirements for regenerated noise.		- Operations undertaken in compliance with ROMs.			
	Vibration Management Plan.				- Noise and Vibration Management Plan.			
				- Loss of reputation EPA applies stricter requirements to the				



				operation of the Project. - Requirement to undertake major works to reconstruct the Project to the required standards.				
				Soil and	d Water			
	Contamination of water through spills of fuels	All Works.	- Plant & equipment failure.	- Pollution of watercourse and stormwater.	- OPESP.	C4	L5	Low
	or chemicals.		- Accidental spill.	- Infringement notice.	- Refuelling Procedures.			
			- Inappropriate storage.	- Reputational damage.	- Spill Management Procedure.			
			- Unapproved release of impacted water.	- Clean-up costs.	- Provision of Spill Kits at set locations, and mobile Spill Kits for stations.			
			- Refuelling not appropriately controlled.		- Training of all staff and workforce.			
			- Spill kit not available.		- Incident Response Procedures.			
					- Detention Basin Management Procedure.			
					- Water quality and watercourse monitoring.			
5	Utility strike (water or sewer) during repair or	Surface Works	- Accidental strike of service as located on plan.	- Pollution of watercourse and stormwater.	- OPESP.	C4	L5	Low



	maintenance works causes a release of water to the		- Utility is marked on plans in the wrong location.	- Disruption to service provision.	- Excavation permit system to be implemented.			
	surrounding environment.		 Service not formerly identified by any means of investigation discovered and damaged. 	- Infringement notice.	- Spill Management Procedure.			
				- Reputational damage.	- Provision of Spill Kits at set locations, and mobile spill kits for sites outside of the RTRF.			
				- Clean-up costs.	- Training of all staff and workforce.			
					- Incident Response Procedures.			
6	water inflows into the tunnel require	Sustainability	causing additional	- Delay as WTP operation is amended to allow for increased discharge.	- Settlement monitoring previously undertaken.	C4	L5	Low
	additional discharge		tunnel.	Infringement notice from EPA for discharge of water(s) in contravention of the EPL.	- Work method planning takes into consideration existing services.			
				- Stop train operations (depending on volume entering tunnel).	- CCS monitoring performance of pumps and WTP.			
7	discharge of	Environment and Sustainability		- Pollution of watercourse and stormwater.	- OPESP.	C4	L5	Low
	untreated groundwater.		CCS monitoring not identifying water quality impact.	- Impacts to aquatic flora and fauna.	- Refuelling Procedures.			



1	1	I	- Unauthorised	- Infringement notice.	Spill Management Procedure.	1	1	
			discharge.	r miningement notice.	- Opin Management Frocedure.			
				- Reputational damage.	- Provision of Spill Kits at set locations, and mobile spill kits for sites outside of the RTRF.			
				- Clean-up costs.	- Training of all staff and workforce.			
					Incident Response Procedures.			
					- Detention Basin Management Procedure.			
					- Water quality and watercourse monitoring.			
8	Pollution of watercourses from discharge of sediment laden or	and	Rainfall event larger than the design capacity of the permanent built drainage facilities.	- Impacts to aquatic flora and fauna.	- Refuelling Procedures.	C4	L5	Low
	otherwise contaminated			- Infringement notice.	- Spill Management Procedure.			
	stormwater runoff.			- Reputational damage.	- Provision of Spill Kits.			
				- Clean-up costs.	- Training of relevant staff and workforce.			
					Incident Response Procedures.			
					- Detention Basin Management Procedure.			
					- Water quality and watercourse monitoring.			
				1	1			



9	Ongoing water table drawdown, settlement / ground movement, bed cracking / surface flow loss from previous tunnelling activities & excavations.		- Ongoing settlement of ground and inflows around the project infrastructure.	- Flooding of infrastructure assets Impact to natural flow and GDEs.	- Previous settlement monitoring. - Site inspection.	C4	L5	Low
					- Watercourse inspections.			
10	flood risk to	Sustainability	- Rainfall events beyond the design capacity of the final built infrastructure.	 Flooding of stations and other assets. Damage to infrastructure. Impacts on operations. Risk to human safety and life. 	- Previous flood assessments. - Prevent impacts on drainage systems and watercourses through work planning. - Temporary flooding controls and diversions.	C4	L5	Low
11	Uncontrolled water discharge from Operational Water Treatment Plant at SMTF- S.	and Sustainability	Rainfall event larger than the design capacity of the permanent built treatment facilities.	Damage to infrastructure. Impacts to operations. Infringement Notice.	- OPESP. - OEMP.	C3	L5	Medium



			Herita	age		
12 Identificat unidentificat unidentificat unidentificat indigenou non-indigrobjects and place repair and maintenal works.	d and s or Sustainability nous s during	- Previously unidentified heritage item discovered during works.	properly archived.	- Heritage Management Plan. - Unexpected Heritage Finds Procedure (including hold point to cease works where archaeological finds are encountered).	L6	Low



				Traffic and	Transport			
13	Potential impacts on the local and regional road network during operation	Traffic & Transport	 Poorly designed precinct roads. Traffic volumes during peak periods. Commuter reliance on car use to get to stations. 	- Complaints. -Accidents and injuries.	 Traffic and Transport Management Plan. Traffic monitoring (by Sydney Metro TfNSW). Encourage alternative modes of transport for commuters and staff. 	C4	L4	Medium
14	Safety of pedestrians and cyclists within and around the station precincts		 Footpaths and corridors access is impacted. Poor connections and signage. Staff not providing access to cyclists. 	- Complaints. - Accidents and injuries. - Reputational damage. - Greater reliance on vehicles and further traffic generation.	 Clear footpaths and corridors for active modes of transport. Maintain design and Provision of facilities for cyclists. Lighting and security provisions around stations and managed precinct areas. 		L5	Low
				Air Qu	ality			
15		Surface Works	 Improper execution of surface works without appropriate mitigation. Failure to implement dust suppression during works. Excessive dry / windy 	- Community complaints. - Visual haze. - Respiratory	- OPESP Dust Management practices.	C4	L5	Low
			weather rendering the ground and ballast dry and dusty.	complaints.				



		- Infringement notice.	EWMS to include dust mitigation methods, including such things as:			
		- Reputational damage.	 inspection and observation for dust during work; 			
			 dust suppression to be fitted to equipment as required; 			
			 wash-down of plant and services; 			
			 education program for personnel to instruct on correct mitigation measures; 			
			 street sweepers and water carts to be used to clean hard surfaces where required. 			
	the hazard.	Accidents and Injuries. Infringement notice.	- EMP.	C4	L5	Low
	the hazard.	Accidents and Injuries. Infringement notice.	- EMP.	C4	L5	Low
at SMTF-S failure 1m x 1m asbestos impacts requiring isolation or removal at SMTF-	removal at SMTF-	at SMTF-S failure Works the hazard. 1m x 1m asbestos Surface Improper management of the hazard. works Improper management of the hazard.	Capped asbestos at SMTF-S failure Improper management of the hazard. Infringement notice. Improper management of Accidents and Injuries. Infringement notice. Improper management of Accidents and Injuries. Infringement notice.	Reputational damage. Reputational damage. inspection and observation for dust during work; dust suppression to be fitted to equipment as required; wash-down of plant and services; education program for personnel to instruct on correct mitigation measures; street sweepers and water carts to be used to clean hard surfaces where required. Capped asbestos at SMTF-S failure Capped asbestos at SMTF-S failure Improper management of the hazard. Improper management of Accidents and Injuries. Infringement notice. Improper management of the hazard. Infringement notice. Infringement notice.	Reputational damage. - Infringement and observation for dust during work; - dust suppression to be fitted to equipment as required; - wash-down of plant and services; - education program for personnel to instruct on correct mitigation measures; - street sweepers and water carts to be used to clean hard surfaces where required. - EMP. - C4 - Infringement notice. - Infringement notice.	Reputational damage. - Infringement notice. - Reputational damage. - Infringement hotice. - Reputational damage. - Infringement hotice. - Reputational damage. - Infringement hotice. - Infringement notice. - Infringement notice.



				Ecolo	gy			
18		Surface Works	 Accidental clearing of threatened species. Damage to root/drip zone of threatened tree species. 	- Infringement notice. - Reputational damage.	- OPESP. - Vegetation Management Procedure.	C4	L6	Low
19		Surface Works	 Impact with maintenance and repair vehicles. Impact with trains. Light spill affecting the habits of nocturnal species. 	- Impact to health and life of fauna species increasing the chance of extinction Infringement notice Reputational damage.	- OPESP. - Fauna Handling Procedure.	C4	L6	Low
20	Weed invasion .	Surface Works	- Failure to manage weed proliferation within the Operational Project boundaries.	leading to increased maintenance costs.	- OPESP Weed Management Procedure Vegetation Management Procedure.	C4	L6	Low
21	Impacts to aquatic ecosystems from water discharge at SMTF-S Water Treatment Plant	Works	- Release of water that is polluted (highly turbid or containing other pollutants) into natural watercourses.	- Pollution of waterways.	- OPESP.	C4	L5	Low
			- WTP monitoring not identifying pollutants	- Failure to comply with S.120 of the POEO Act.				
			- WTP failure	- Damage to health/ life of aquatic flora and fauna.	- Water Discharge Procedure.			
			- Unauthorised discharge	- Infringement notice.	- EPL.			





				- Reputational damage.	- Waste tracking and disposal.			
				- Clean-up costs.				
			Waste	and Resour	ce Management			
22	Excessive waste directed to landfill.	Governance	- Unforeseen major repair or maintenance works requiring substantial demolition of NRT infrastructure.	- Failure to meet Deed requirements.	Compliance with:	C4	L4	Medium
			- Failure to follow waste management protocols for waste management from: offices; maintenance facilities; etc.	- Failure to meet ISCA requirements.	- OPESP.			
					- Waste and Resource Management Procedure.			
				- Increased cost associated with purchasing extra water.				
23	Mismanagement of waste materials.	Environment and Sustainability	- Failure to follow waste management protocols for waste management from offices, maintenance facilities, etc.	- Infringement notice for improper disposal of waste.	Compliance with: - CEMP. - Waste and Resource Management Procedure, including: - Waste classification sampling.	C4	L4	Medium



				 Waste tracking dockets. 			
		Greenhouse G	as and Clim	ate Change Adap	tation		
24	Emissions of greenhouse gases during operation contributing to climate change.	- Increased use of electricity during operation. - Failure to source adequate volumes of green power.	- Contributing to climate change impacts due to increased emissions.		C4	L5	Low
				- Carbon & Energy Management Plan.			
25	Impact of climate change on rail operations and infrastructure.	-Heat sensitive components impacted by increase in hot days Increase storm events and rainfall intensity.		- OPESP. - Procurement Procedures.	C4	L5	Low
				- Sustainability initiatives for water reuse and energy use (reduce/offset) Carbon & Energy Management Plan.			



2.2. Premise and Environmental Aspects Maps

MTS will prepare a series of maps based on the Premise Maps provided to support the Sydney Metro Network and Project EPL. Environmental Aspects Maps will be developed post-completion of CSW works and with all available information available at that point in time. The Premise Maps will be attached in Appendix C to this PIRMP.

Maps will include the following information:

- Sydney Metro Licenced Premise, as per the EPL.
- Identification of local government boundaries.
- Location of stormwater and natural drainage lines within, and immediately adjacent to, the EPL Premise.
- Storage areas for potential pollutants (e.g. storage areas).
- Location of any equipment, etc, that is store for use in managing an incident (e.g. spill kits; shovels; sandbags).
- Sensitive receiver catchments, that could potentially be impacted by a pollution event.

These maps will be used in the case of a potential or actual pollution incident. The MTS Environment and Sustainability Manager will be notified immediately of any incident resulting in actual or potential harm, and will consult the maps to determine the:

- · Potential scope of impact.
- Potentially impacted receivers that need to be notified.
- Availability of management equipment, etc.
- The council that needs to be notified, as per Section 2 of this PIRMP.





3. Notification of incidents

3.1. Environmental incident classification and notification matrix

MTS will employ the incident classification as provided in Table 4 below.

Table 4: Environmental Incident Classification

INCIDENT	ENVIRONMENT	
CLASSIFICATION*	ACTUAL (A)	POTENTIAL (PC**)
Class 3 (A3 / PC3)	Pollution or degradation which has caused or may have irreversible detrimental effects on the environment and/or community.	Incident with the potential to cause an actual Class 3 incident.
Class 2 (A2 / PC2)	Pollution or degradation which has persistent (greater than three months) but reversible detrimental effects on the environment and/or community.	Incident with potential to cause an actual Class 2 incident.
Class 1 (A1 / PC1)	Pollution or degradation which has short- term (less than one month) and reversible detrimental effects on the environment and/or community.	Incident with potential to cause an actual Class 1 incident.

^{*} MTS has assigned the incident classification for environmental incidents to be consistent with those contained in Intelex which provides that the most serious incidents as category 3, and the least serious category 1. While this is the opposite of standard environmental classifications MTS considers it more appropriate to align all incident classifications across all facets of the operation of the Sydney Metro Northwest network to remove the chance of confusion.

MTS has developed the following Notification Matrix to determine the following key steps in notification of pollution incidents based upon the incident classifications identified in Table 4 above. Incidents may not always cause actual or potential environmental harm, therefore only incidents that result in actual or potential material harm will be notified externally. The intent of the Notification Matrix is to ensure that notification of pollution incidents is targeted to the appropriate authorities in the correct timeframes based upon the severity of impact.

Table 5: Environmental Incident Notification Matrix

INCIDENT CLASSIFICATION	REPORTED BY:	EXTERNAL		INTERNAL		
		REPORTED TO:	TIMEFRAM E:	REPORTED TO:	TIMEFRAME:	
Class 3 (Actual & Potential)	MTS E&S Advisor	EPA and agencies, councils and organisations as required.	Immediately after incident classification.	SHEQ Director	Immediately.	



^{**} PC denotes Potential Class.



	SHEQ Manager	As above (only in absence of E&S Manager)	As above.	SHEQ Executive Committee MTS CEO MTS Board (and parent companies)	Immediately.
	Activity Manager	Emergency services if required.	Immediately.	E&S Manager	Immediately after works cease, site is made safe and contained.
Class 2 (Actual & Potential)	MTS E&S Advisor	EPA and agencies, councils and organisations as required.	Immediately after incident classification.	SHEQ Director	Immediately.
	SHEQ Manager	As above (only in absence of E&S Manager)	As above.	SHEQ Executive Committee	Immediately.
				MTS CEO MTS Board (and parent companies)	Monthly Report 6 Monthly Report.
	Activity Manager	Emergency services if required.	Immediately.	E&S Manager	Immediately after works cease, site is made safe and contained.
Class 1 (Actual & Potential)	MTS E&S Advisor	EPA and agencies, councils and organisations as required.	Immediately after incident classification.	SHEQ Director	Immediately.
	SHEQ Manager	As above (only in absence of E&S Manager)	As above.	MTS Board (and parent companies).	6 Monthly Report.
	Activity Manager	N/A	N/A	E&S Manager	Immediately after works cease, site is made safe and contained.

Incidents may not always cause actual or potential environmental harm, therefore only incidents that result in actual or potential material harm will be notified externally.

3.2. Incident Contact Details

3.2.1. External Contact Details

In the circumstance where and incident occurs and the Environment and Sustainability Advisor or SHEQ Director determines that actual or potential material environmental harm has be caused/ threatened by the incident, they will then use the contact details provided for each of the relevant external agencies in Table 6 below within the timeframes provided in Table 5 above.





Table 6: Relevant Agency Contact Details

RELEVANT AUTHORITY	CONTACT DETAILS	MTS RESPONSIBLE PERSON TO CONTACT
Fire and Rescue NSW	000*	Safety Manager / Environment and Sustainability Advisor
* Only in the event of an i property.	ncident that presents an immediate th	reat to human health or
EPA	(02) 9995 5000 131 555	Environment and Sustainability Advisor
Ministry of Health / Camperdown Public Health Unit	Business hours: (02) 9515 9420 After hours: (02) 9515 6111 (ask for Public Health Officer on call)	Environment and Sustainability Advisor
SafeWork NSW	131 050	Safety Manager
Hills Shire Council ¹	9843 0555 (After Hours: 9843 0555)	Environment and Sustainability Advisor
Hornsby Shire Council ²	9847 6666 (no after hours number)	Environment and Sustainability Advisor
Blacktown City Council ³	9839 6000 (After Hours: 1300 133 491)	Environment and Sustainability Advisor
City of Parramatta Council ⁴	1300 617 058 (All Hours)	Environment and Sustainability Advisor
City of Ryde Council⁵	9952 8222 (After Hours: 9952 8222)	Environment and Sustainability Advisor
City of Willoughby Council ⁶	9777 1000 After Hours: 9777 1000	Environment and Sustainability Advisor
Lane Cove Council	9911 3555 (24 hours)	Environment and Sustainability Advisor
North Sydney Council ⁷	9936 8100	Environment and Sustainability Advisor
City of Sydney ⁸	9265 9333	Environment and Sustainability Advisor
Inner West Council ⁹	9392 5000	Environment and Sustainability Advisor



Fire and Rescue NSW	1300 729 579 (if Fire and Rescue was	Safety Manager /
	not contacted initially)	Environment and
		Sustainability Advisor

- 1. This number is to be used for Bella Vista, Norwest, Showground and Castle Hill Stations, and associated tunnels.
- 2. This number is to be used for Cherrybrook, Cheltenham and Epping Stations and associated tunnels.
- 3. This number is to be used for SMTF North, Cudgegong Road, Kellyville, Rouse Hill Stations, viaduct and surface track.
- 4. This number is to be used for Epping Station and associated tunnels.
- 5. This number is to be used for Macquarie Park and North Ryde Stations, and associated tunnels.
- 6. This number is to be used for Chatswood Station and associated tunnels.
- 7. This number is to be used for Crows Nest and Victoria Cross Stations
- 8. This number is to be used for Barangaroo, Martin Place, Pitt Street, Central and Waterloo Stations
- 9. This number is to be used for Sydenham Station and SMTF South

Determine the Local Government Area(s) relevant to the incident and only notify relevant Council(s).

Although the EPA's Incident Notification Protocol identifies 000 as the contact number for Fire and Rescue NSW, MTS has been advised that the number listed here should be used for pollution incident notifications and that 000 must only be used for emergency calls.

In the case of a pollution event the following key individuals are:

- Authorised to notify relevant authorities.
- Responsible for activating the plan.
- Responsible for managing the response to a pollution incident.

These people will be contacted by the manager responsible for the works at the time of the incident, as per the table above.

Table 7 MTS Key Contact Details

ROLE	NAME	24 HOUR CONTACT DETAILS
Environment and Sustainability Advisors	David Wilson	0448 113 709
	Peter Scioscia	0492 233 352
Head of Safety, Quality, Risk and Environment		

3.3. Information to be included in notification

MTS proposed the implementation of the form included at Appendix B of this PIRMP to report incidents. The form has been prepared to comply with the requirements of *the Protection of the Environmental Operations (General)* Regulation (POEO(G)R) 2009. The form will be completed for all incidents and will be kept in the MTS Project





Management System (PMS), where it will be accessible to all MTS staff, and will be subject to the MTS systems and processes for continual review and improvement, as provided in the MTS OEMP.

Where an incident results in potential or actual material environmental harm, the Environment and Sustainability Advisor or Head of Safety, Quality, Risk and Environment will complete the form to ensure that all the required information is captured and reported to the EPA. Information included in the notification includes:

- Time, date, and duration of the incident.
- Nature of the incident (quantity or volume and the concentration of any pollutants involved).
- Location of the incident, including the place where pollution is occurring, or is likely to occur.
- Circumstances in which the incident occurred (including the cause of the incident).
- Action taken or proposed to be taken to deal with the incident.
- Any resulting pollution or threatened pollution.
- Any other information prescribed by the regulations.

The above information will be reported as it becomes available, as at the time of the first notification to the EPA (i.e. immediately after the classification of the incident) it is likely that not all the relevant information will be available. The unknown information will be reported to the EPA in subsequent notifications / reports as the information becomes available.

4. Community response

In some instances, environmental incidents may be required to be notified to potentially affected community and stakeholder groups close to the incident (CI 98C). MTS has a Stakeholder and Community Implementation Plan (SCIP) which governs all interaction between the operation of Sydney Metro Network and the community. The SCIP has been prepared to meet the following requirements:

- Relevant planning approvals.
- Contractual requirements.
- Protection of the Environment Operations (POEOA) Act 1997.
- Protection of the Environment Legislation Amendment Act 2011 (POELA Act).
- Protection of the Environmental Operations (General) Regulation (POEO(G)R) 2009.
- NSW EPA Environmental Guidelines: Preparation of pollution incident response management plans.

MTS has ensured that the SCIP includes mechanisms for early warning and regular updates to owners and operators located close to the Sydney Metro premise. The SCIP includes:

- Community Engagement Protocol, that includes procedures for notifying the community members living or working in the vicinity of the pollution incident and keeping them informed of relevant matters.
- How the communication mechanisms will be coordinated with emergency services personnel responsible for managing the response to the incident.
- Mechanisms for providing early warnings and regular updates to the owners and occupiers of premises who
 may be affected by an incident occurring on the premises.

Communication mechanisms will include such things as:

- Incident notifications placed on the MTS website or social media networks (such as Twitter or Facebook).
- Telephone calls or SMS or other messaging systems.
- Emails to community representatives.
- Letterbox drops and doorknocking of affected community members, as appropriate to the circumstances.

If an incident occurs, as identified in Table 8, the Environment and Sustainability Advisor will undertake an immediate assessment to determine the Classification of the incident (Table 4 above). If the Environment and Sustainability Advisor determines that an incident has resulted in environmental harm, and presents an imminent risk to adjacent receivers they will contact the MTS Corporate Relations Manager immediately after making the assessment in order that the Community Engagement Protocol can be implemented.

The Environment and Sustainability Advisor will consider the following in making their assessment, prior to contacting the Corporate Relations Manager:





- Type of incident and resulting pollution (e.g. a pollutant to a stormwater system or creek, or an unplanned release of an air pollutant into the atmosphere).
- Scale of the pollution impact.
- If there are any potentially impacts receivers.
- Has the pollution event gone offsite, or does it have the potential to go offsite.
- Ability to contain incident, and time required to clean-up any pollution.

Based on the assessment, the Environment and Sustainability Advisor will inform the Corporate Relations Manager of the potential:

- Impact zone: e.g.:
 - Discharge to the stormwater system notify premises that are adjacent to the stormwater system or creek and consider any downstream users, such as holders of water irrigation licences, recreational water facilities and oyster growers.
 - Air emissions should consider types of pollutant, prevailing winds, height and magnitude of an emission, as well as the location of any on-site fallout or off-site impacts, the likelihood of the pollutant reaching ground level, and possible impacts on sensitive receptors.
- Affected receivers (e.g. consider notifying any sensitive premises in close proximity, such as schools, preschools, nursing homes and hospitals);
- Measures to be included in any notification of receivers required to minimise risk of harm, including such things as:
 - Close windows and doors.
 - Remain inside.
 - Stay away from water courses (stormwater and natural).

If required, the Environment and Sustainability Advisor will liaise with the Head of Safety, Quality, Risk and Environment or relevant authority to determine the most appropriate management measures to be communicated to the potentially affected receivers.

5. Implementation of the PIRMP

5.1. Integration with MTS Incident Management Framework

MTS has an Incident Management Framework (IMF) which includes all relevant requirements required by the legislation and contained within this PIRMP. The IMF is an all-encompassing incident response management plan, to ensure that all persons carrying out activities are aware of all the safety, health and environmental obligations required to be met in the event of an incident.

The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm. The Environment and Sustainability Advisor and Head of Safety, Quality, Risk and Environment would be notified immediately in the event of an environmental incident.

The IMF provides details of to the types of incidents, including environmental, that could potentially occur and describes the principles behind how MTS will respond to these. Types of environmental incidents applicable to the Sydney Metro Network include, but are not limited to:

- Spills of fuels, oils, chemicals and other hazardous materials.
- Unauthorised discharge from detention basins or other containment devices.
- Unauthorised clearing beyond the extent of the Project boundary or premises.
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat (only occurring beyond Project boundaries).
- Unauthorised harm or desecration to unknown Aboriginal objects and Aboriginal places.
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item (beyond Project boundaries).
- Potential contamination of waterways or land.





- Any potential breach of legislation, including a potential breach of a condition of an EPL; CoA; or any agency permit condition.
- Works undertaken without appropriate approval or assessment under the EP&A Act 1979.
- Works undertaken that are not in accordance with a Project assessment.
- Unauthorised dumping of waste.

The IMF shows the different management structures for incident response, including incident severity levels, and criteria for classifying environmental incidents. The Framework includes references to legislation and regulatory requirements and links MTS's incident response documentation to other Rail Agencies' plans and procedures, as well as to other internal documents.

The environmental incident classifications in the IMF are as per those contained in Section 3 of this PIRMP.

The IMF has been prepared to be consistent with the legislative requirements for environmental incident reporting, both under the planning approvals (MCoA) and the *Protection of the Environment Operations (POEO) Act 1997*, including the preparation of the Pollution Incident Response Management Plan (PIRMP).

6. Incident Management Framework

The MTS Incident Management Framework is based on or works in conjunction with the following Legislation, Regulation and Licence requirements:

- Rail Safety National Law (NSW) (2012).
- State Emergency and Rescue Management Act 1989 (NSW).
- Work, Health and Safety Act 2011 (NSW).
- Transport Safety Investigation Act 2003 (Commonwealth).
- Protection of the Environment Operations Act 1997 (NSW).
- Environment Protection Licence (to be issued to MTS).

Further, the MTS Incident Management Framework has been developed in consideration of:

- The NSW Emergency Management Plan (EMP), which describes emergency planning at a Local, District and State level.
- The requirements of the Office of the National Rail Safety Regulator (ONRSR).
- Section 3.2 of the Rail Safety (Safety Management System) Guideline 2006.

6.1.1. Incident management

All incidents that occur on the Sydney Metro Network will be managed as per the Incident Management Framework (IMF) listed in section 6 of the Emergency Management Plan (EMP, reference: SMCSWTS2-MTS-CSW-PM-PLN-002152). The Emergency Procedure is contained in section 7 of the EMP. Key elements include the classification of incidents, a single point of operational control to contain or resolve the incident, the possible despatch of a Customer Operations Lead to act as a Metro Commander to provide co-ordination onsite, and the stand up of a Crisis Event Team in event of a class 3 incident.

6.1.2. Site Incident Management Plans (SIMPs)

Site Incident Management Plans (SIMPs) have been developed under the IMF for all MTS Stations, Trains and work locations. The SIMPs are displayed at each work site and be available on the MTS intranet site. The SIMPs outline the preparation and plans for dealing with emergencies arising out of any of the identified hazards that may arise at a particular work location as identified in the IMF.

6.2. Environmental incident management

Table 8 below contains detail of the action to be taken immediately after a the most likely pollution incident identified in the risk assessment undertaken for the OPESP and this PIRMP. It also includes the processes / procedures that will govern the management of each type of incident. Further detail of notification to be undertaken is contained in Section 3 of this PIRMP.





Table 8: Immediate Management Measures (Actions) to be taken

RISK#	RISK EVENT	PROCESS /	MANAGEMENT MEASURE
	THREAT DESCRIPTION	PROCEDURE	
1	Contamination of water through spills of fuels or chemicals.	- Spill Management Procedure. - PIRMP. - Incident Management Framework.	 Stop work immediately. Make area safe. Immediately use spill kit to contain spill. If spill is of a substantial scale call emergency services to assist in containment immediately. Works / Area Manager is to notify E&S Advisor / Head of SRQE immediately after spill is contained to prevent further damage. E&S Advisor / Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. Depending on the scale of impact, E&S Advisor/ Head of SRQE to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. temporary moratorium on local fishing, water sports, etc).
2	Impacts to water quality from discharge of untreated groundwater.	- Water Discharge Procedure Spill Management Procedure PIRMP Incident Management Framework.	 Cease discharge activities immediately. Works / Area Manager is to notify E&S Advisor/ Head of SRQE immediately. E&S Advisor / Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. E&S Advisor to undertake inspection of waterways and consider water testing to determine any potential impacts and required remedial actions to be taken. Depending on the scale of impact, E&S Advisor to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. temporary moratorium on local fishing, water sports, etc).
3	Pollution of watercourses from discharge of sediment laden or otherwise contaminated stormwater runoff.	- Water Discharge Procedure Spill Management Procedure PIRMP Incident Management Framework.	 Cease discharge activities immediately. Immediately use spill kits/ booms if appropriate to contain any discharge of pollutants (e.g. fuels/ oils). Works / Area Manager is to notify E&S Advisor / Head of SRQE immediately. E&S Advisor/ Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. E&S Advisor to undertake inspections of waterways and consider water testing to determine any potential impacts and required remedial actions to be taken. Depending on the scale of impact, E&S Advisor to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. temporary moratorium on local fishing, water sports, etc).



4	Dust emissions from repair or maintenance works, in particular, those involving the moving of ballast.	- Works Approval Protocol PIRMP Incident Management Framework.	 Cease ground disturbance activities at time of high winds. Works / Area Manager is to notify E&S Advisor / Head of SRQE immediately. E&S Advisor / Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. Use dust suppression to dampen exposed area. Depending on the scale of impact, E&S Manager to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. to close windows, etc).
5	Localised impacts (e.g. smoke and/ or fumes) to surrounding receivers from exhaust emissions from plant associated with the SMTF North.	- PIRMP Incident Management Framework.	 Cease works immediately. Make area safe. Works/Area Manager is to notify E&S Advisor / Head of SRQE immediately. E&S Advisor / Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. Depending on the scale of impact, E&S Advisor to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. to close windows, etc).
6	Impacts to aquatic ecosystems from water discharge at Lady Game Drive or Marrickville WTP.	- Water discharge Procedure. - PIRMP. - Incident Management Framework.	 Cease discharge activities immediately. Works/Area Manager is to notify E&S Advisor / Head of SRQE immediately. E&S Advisor / Head of SRQE will notify incident in accordance with Section 3 of this PIRMP. E&S Advisor to undertake inspection of waterways and water testing to determine any potential impacts and required remedial actions to be taken. Depending on the scale of impact, E&S Manager to notify Corporate Relations Manager to manage any interaction with the community, including any notifications (e.g. temporary moratorium on local fishing, water sports, etc).

6.3. Pollution inventory

Pollutants likely to be used during the Operation of the Sydney Metro Project include such things as fuels, oils, paints, as well as other chemicals. The complete list of potential pollutants to be stored and used during the Operations Phase has been complied in consultation with the operations, maintenance and repair teams responsible for the ongoing management and upkeep of the new network.

Table 9 below contains a list of the potential pollutants to be used, as well as the proposed storage location for these.

Table 9: Potential Pollutant Inventory

POTENTIAL POLLUTANT	STORAGE LOCATION	MANAGEMENT MEASURES
Acetylene Cylinders	Stabling yards, service facilities	No live flame near cylinders, stored away from areas where there is a risk of flame or spark, MDS located on site.





		0.001	
Acidic Detergents	Stations, service facilities, stabling yard Spill kits, sand bags, SDS located on site.		
Cleaners	Stations, service facilities, stabling yard	g Spill kits.	
Flocculants	Service facilities, stabling yard	Storage in accordance with SDS.	
Fuels	Stabling yard	Spill kits, sand bags, SDS located on site.	
Liquid Nitrogen	Stabling yards, service facilities	No live flame near cylinders, stored away from areas where there is a risk of flame or spark, not to be handles by untrained persons, SDS located on site.	
Lubricants and Grease	cants and Grease Stabling yards, service facilities Spill kits, sand bag on site.		
Oils (hydraulic)	Stabling yard	Spill kits, sand bags, SDS located on site.	
Paints	Stations, service facilities, stabling yard	Spill kits.	
Refrigerants	Stabling yards, service facilities	No live flame near cylinders, stored away from areas where there is a risk of flame or spark, SDS located on site.	
Solvents	Stations, service facilities, stabling yard	Spill kits, SDS.	
Train Wash Plant Solutions	Stabling yards	Spill kits, sand bags.	
Train Wash Solutions	Stabling yards	Spill kits, sand bags.	
Visible Dye Penetrant Stabling yards, service facilities Spill kit		Spill kits, sand bags.	
Water Treatment Plant Chemicals	Service facilities, stabling yard	Spill kits, SDS stored with chemicals.	
Welding Argon, Oxygen, Thermite	Stabling yards, service facilities	No live flame near cylinders, stored away from areas where there is a risk of flame or spark, SDS located on site.	

MTS is required by law to assess if the products it uses, or its employees or contractors use, are hazardous. If they are, then it needs to maintain a Hazardous Material Register, containing the following information (at a minimum).

- Product name.
- Storage location, quantity and use.
- Product labelling.
- Current SDS.
- Is the substance hazardous?
- What personal protective equipment (PPE) is required?

It is also a requirement for MTS to ensure that copies of the hazardous materials register and MSDS are available at the place of use of the product. This means work vehicles must carry copies of these documents if they also carry any products that require SDS.





6.4. Storage of safety equipment

Table 10 below provides details of where safety equipment will be stored to respond to the pollution risks identified in Table 3 above.

Table 10: Storage of Safety Equipment

RISK#	RISK EVENT THREAT DESCRIPTION	SAFETY EQUIPMENT	STORAGE LOCATION
1	Contamination of water through spills of fuels or chemicals.	Spill kits. Water testing equipment. Sandbags (or equivalent).	Sydney Metro Train Facilities. Stations. Service Facilities.
2	Impacts to water quality from discharge of untreated groundwater.	Spill kits. Water testing equipment. Sandbags (or equivalent).	Sydney Metro Train Facilities.
3	Pollution of watercourses from discharge of sediment laden or otherwise contaminated stormwater runoff.	Spill kits. Water testing equipment. Sandbags (or equivalent). Flocculants.	Sydney Metro Train Facilities.
4	Dust emissions from repair or maintenance works, in particular those involving the moving of ballast.	Water suppression equipment (e.g. hoses, sprayers).	Sydney Metro Train Facilities.
5	Localised impacts (e.g. smoke and/ or fumes) to surrounding receivers from exhaust emissions from plant associated with the SMTF due to plant failure at SMTF site (welding facilities; paint facilities) leading to the need to exhaust from the maintenance building.	Face masks.	Sydney Metro Train Facilities.
6	Impacts to aquatic ecosystems from water discharge at Lady Game Drive or Marrickville WTP.	Spill kits. Water testing equipment. Sandbags (or equivalent). Flocculants.	Lady Game Drive Service Facility. SMTF South.

Below is a list of the locations of all stations, service facilities, and other storage locations:

- Stations (including back of house service facilities):
 - Tallawong Station, Rouse Hill.
 - Rouse Hill Station, Rouse Hill.
 - Kellyville Station, Kellyville.
 - Bella Vista Station, Bella Vista.
 - Norwest Station, Baulkham Hills.
 - Hills Showground Station, Castle Hill.
 - Castle Hill Station, Castle Hill.
 - Cherrybrook Station, Cherrybrook.
 - Epping Station, Epping.
 - Macquarie University Station, Macquarie Park.
 - Macquarie Park Station, Macquarie Park.
 - North Ryde Station, North Ryde.
 - Chatswood Station, Chatswood.
 - Crows Nest Station, Crow's Nest.





- Victoria Cross Station, North Sydney.
- Barangaroo Station, Sydney.
- Martin Place Station, Sydney.
- Pitt Street Station, Sydney.
- Central Station, Sydney.
- Waterloo Station, Waterloo.
- Sydenham Station, Sydenham.
- Other Services Facilities:
 - Epping Service Facility 240 Beecroft Road, Epping.
 - Cheltenham Service Facility Cheltenham Oval, Castle Howard Road, Cheltenham.
 - Lady Game Drive Service Facility, Lady Game Drive (north of Delhi Road), Chatswood West.
- Water Treatment Plant:
 - Lady Game Drive WTP Lady Game Drive (north of Delhi Road), Chatswood West.
 - Marrickville Water Treatment Plant, Sydenham.
- Stabling Facilities:
 - Sydney Metro Train Facility North 47 Tallawong Road, Rouse Hill.
 - Sydney Metro Train Facility South Sydenham Station, Sydenham.





7. Training and awareness

MTS has implemented an extensive training and awareness program that addresses all aspects of the operation and maintenance of the Sydney Metro Network.

The MTS training program has been designed with the key objective of ensuring all personnel working in and around the network are fully aware of:

- The existence and purpose of the PIRMP.
- Their obligations under the relevant legislation and approvals (including safety and environment).
- Processes and procedures to be implemented in the case of an incident.
- Reporting chains in the case of an environmental incident.
- Reporting timeframes for environmental incidents.
- Their right and obligation to report any environmental incident on the network, and within areas of MTS responsibility.

The Environment and Sustainability Advisor will coordinate the environmental training in conjunction with other training and development activities (e.g. safety), under the MTS' Training Management Plan to ensure that management of environmental incidents and obligations under the POEO Act, and this PIRMP, are fully communicated to all staff and workforce. Further details of training are contained within the OEMP and the Training Management Plan.

8. Document management and continual improvement

8.1. Document management

Copies of this PIRMP will be kept and made available as follows:

- On the MTS Environmental Management System (EMS), within the Project-Wide PMS, which will be accessible from all MTS offices (including those at stations).
- As a hard copy at the MTS head office at within the Sydney Metro Trains Facility at 47 Tallawong Road, Rouse Hill.
- A summary (as per CI 98D(3) of the POEOR) of the PIRMP will be made available on the MTS Sydney Metro digital channels (app and websites).
- Will be made available to the EPA, other agencies and stakeholders on request.

MTS has established digital channels (app and websites) the operation of the Network. The digital channels will provide:

- Details about the Sydney Metro Network.
- Community and stakeholder contact details.
- Enquiry and Complaints channels.
- Details of upcoming maintenance and repair activities.
- Alternative transport options during service disruptions (e.g. during possessions).
- Access to key documentation, including those required by legislation (IPART and EPL) for stakeholders and the general public.

All information that is required to be provided to the public on a website will be published:

- Copy of the OEMP.
- A copy of the PIRMP summary (Appendix A).
- Required monitoring results, as required by the EPL.





8.2. Continual improvement and review

Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of the Plan, and adjustment and improvement of the Project environmental outcomes and the MTS EMS. Annual management reviews provide specific opportunities to identify improvements in the EMS and associated documentation including the PIRMP.

Testing of this PIRMP will be undertaken in accordance with Clause 98E of the POEOA, annually, and within one month of any pollution incident, and as part of the MTS continual improvement program.

As provided in Section 9 of the MTS OEMP, Management reviews will be undertaken annually or as required as part of the MTS continual improvement process. Reviews will consider the suitability and effectiveness of the environmental management system (EMS) and effectiveness and proper implementation of the OEMP and other environmental management documentation, including the PIRMP. Reviews may include the wider management team and a review of systems from other functional areas.

The management review will consider:

- Opportunities to improve environmental management processes and practices.
- Client and agency feedback.
- Consideration of non-conformances and deficiencies.
- Consideration of effectiveness of corrective and preventative actions.
- Changes or developments in the MTS EMS.

The outcomes of the reviews may result in the amendment of any environmental management documents (including the PRIMP), revision to the EMS, risk assessment review, re-evaluation of the Project's objectives and targets as well as feeding into other Project documents. Necessary system improvements would be identified and raised as corrective actions. Revision of plans will be undertaken in accordance with Section 9.2 of the OEMP, and as below.

In addition to the annual review, review and revision of the PIRMP will also be undertake within one (1) month of any pollution incident occurring in the course of an activity to which the licence relates. The intent of the post-incident review being to determine, in the light of that incident, whether:

- the information included in the plan is accurate and up to date; and
- if the plan is still capable of being implemented in a workable and effective manner.

It will also:

- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law.
- Where requested or required by the EPA or any other Authority.
- In response to internal or external audits or quarterly management reviews.

The updated plan will be endorsed by the Environment and Sustainability Manager and re: issued to the EPA.









Appendix A. Document Control

Appendix A1. Document Information

Document Number:	SMCSWTS2-MTS-CSW-EM-PLN-002731	
Version:	03	
Issue Date:	29/04/2024	
Network	City & Southwest	

Appendix A2. Approval Record

Function	Position	Name	Signature	Date
Prepared by:	Environment & Sustainability Advisor	Peter Scioscia		
Reviewed by:	Head of Safety, Quality, Risk and Environment			
Endorsed by:	General Manager Safety, Quality, Risk & Environment	Amanda Calvez		
Endorsed by:	A/General Manager Engineering & Maintenance Delivery	Michael Leah		
Approved by:	MTS Chief Executive Officer	Daniel Williams		
Endorsed by:	MTR Representative	Ronnie Tong		
Authorised by:	OpCo2 Delivery Director	Phil Dark		
Approved by:	NRT Chief Executive Officer	Steve Herman		

Appendix A3. Amendment Record

Date	Rev	Amendment description	Ву
30/10/2018	01	Draft for EPA Review	GK
03/05/2019	02	EPL 21247 issued. Final for implementation	GK
14/12/2023	03	Updated plan to include CSW. New format template.	Peter Scioscia / Peter Simcic / Muna Wakeel
29/04/2024	03	Update of content plus re-formatting of content to MTS plan standards.	Peter Scioscia / Peter Simcic





B APPENDIX



Appendix B. List of acronyms

Acronym	Definition	
ANZ SMEs	Australian & New Zealand Small & Medium Enterprises	
ARI	Average Recurrence Interval	
AS	Australian Standard	
CBD	Central Business District (of Sydney)	
CCRA	Climate Change Risk Assessment	
CCRAAS	Climate Change Risk Assessment & Adaptation Study	
CEO	Chief Executive Officer	
CEP	Carbon & Energy Management Plan	
CLIP	Community Liaison Implementation Plan	
СоА	Conditions of Approval	
csw	City and Southwest	
СТР	Compliance Tracking Program	
D&C	Design & Construction	
D&D	Design & Delivery	
D&DJV	Design & Delivery Joint Venture	
DPE	NSW Department of Planning, Industry & Environment	
DPI	NSW Department of Primary Industries	
DPSP	Delivery Phase Sustainability Plan	
DSI	Detailed Site Investigation	
E&S	Environmental & Sustainability	
EAM	Environmental Aspect Map	
ECRL	Epping to Chatswood Rail Line	
ECSM	Electricity Consumption Software Model	
EEC	Endangered Ecological Community	
EIS	Environmental Impact Statement	
EMP	Emergency Management Plan	



Acronym	Definition	
EMS	Environmental Management System	
EP&A	Environmental Planning & Assessment	
EPA	NSW Environment Protection Authority	
EPL	Environment Protection Licence	
EWMS	Environmental Work Method Statements	
FTE	Full Time Equivalent	
GBCA	Green Building Council of Australia	
GM	General Manager	
GRI	Global Reporting Initiative	
HR	Human Resources	
HSE	Health, Safety, Environment	
HVAC&R	Heating, Ventilation, Air Conditioning & Refrigeration	
ICN	Industry Capability Network	
IEQ Indoor Environment Quality IMF Incident Management Framework		
		IMS Integrated Management System
IR	Industrial Relations	
IS Rating Tool	Infrastructure Sustainability Rating Tool	
ISCA	Infrastructure Sustainability Council of Australia	
ISO	International Standards Organisation	
kL	Kilolitre	
KPIs	Key Performance Indicators	
kVa	Kilovolt-ampere	
LCA	Life Cycle Assessment	
LCC	Life Cycle Cost	
LMA	Licenced Maintenance Areas	
МСоА	Ministerial Conditions of Approval	
MTS	Metro Trains Sydney Pty Ltd	

An MTR, John Holland and UGL Rail Company





Acronym	Definition	
NABERS	National Australian Built Environment Rating System	
NCIE	National Centre for Indigenous Excellence NSW Office of Water	
NOW		
NRT	Northwest Rapid Transit	
NVMP	Operational Noise & Vibration Management Plan	
NW	Northwest	
NWRL	Northwest Rail Link	
O&M	Operation & Maintenance	
OEH	NSW Office of Environment & Heritage	
ОЕМР	Operational Environmental Management Plan	
OPESP	Operations Phase Environment and Sustainability Management Plan	
ONVR	Operational Noise and Vibration Review	
OpCo / OpCo2	NRT Group	
отѕ	Operations, Trains & Systems	
PAS Public Announcement System PIMS Project Integrated Management System		
		PIRMP
PMS	Project Management System	
POEA Act	Protection of the Environment Operations Act 1997	
PPP	Public Private Partnership	
PRL	Parramatta Rail Link	
PV	Photo Voltaic	
RECS	Renewable Energy Certificates	
REF	Review of Environmental Factor	
REMMs	Revised Environmental Mitigation Measures	
ROMs	Rail Operating Manuals	
RTRF	Rapid Transit Rail Facility	
SCLP	Stakeholder & Community Liaison Plan	



Acronym	Definition	
SDG	Sustainable Design Guidelines	
SEAG	Skills & Employment Advisory Group	
SH&E	Safety, Health & Environment	
SIMP	Site Incident Management Plan	
SQRE	Safety, Quality, Risk and Environment	
SJV	Service Joint Venture	
SMA	Sydney Metro Authority (an independent agency of TfNSW)	
SMTF	Sydney Metro Train Facility	
SMS	Safety Management System	
SPMS	Server Payment Monitoring System	
SQE	Safety, Quality & Environment	
SROI	Social Return on Investment	
SSI	State Significant Infrastructure	
TAFE	Technical & Further Education	
TfNSW	Transport for NSW	
TNA	Training Needs Analysis	
voc	Volatile Organic Compound	
WAP	Works Approval Protocol	







Appendix C. Related Documents

Note: some documents will be closely interconnected and will need to be reviewed when this one is changed. Others are simply related content that supplement the material in this document.

Document Number	Document Title	Review
SMCSWTS2-MTS-CSW-EM-PLN-002107	Carbon and Energy Management Plan	Yes
SMCSWTS2-MTS-CSW-PM-PLN-002152	Emergency Management Plan	No
NWRLOTS-NRT-ADM-EM-PRO-720473-01	Fauna Handling Procedure	Yes
SMCSWTS2-MTS-1NL-EM-PLN-002711	Flooding and Hydrology Plan	Yes
NWRLOTS-NRT-PRD-PM-PLN-000874	Flora & Fauna Management Plan	Yes
SMCSWTS2-MTS-1NL-EM-PLN-002712	Groundwater Management Plan	Yes
SMCSWTS2-MTS-CSW-HE-PLN-002100	Heritage Management Plan	No
NWRLOTS-NRT-ADM-PM-PLN-721419	Human Resource Plan	No
NWRLOTS-NRT-SWD-FA-POL-723353	MTS Procurement Policy	No
SMCSWTS2-MTS-CSW-EM-PLN-002106	Noise and Vibration Management Plan	Yes
NWRLOTS-NRT-ADM-EM-PRO-720474-01	Noise & Vibration Monitoring Procedure	No
SMCSWTS2-MTS-CSW-EM-PLN-002105	Operations Phase Environment and Sustainability Plan	Yes
NWRLOTS-NRT-ADM-EN-PLN-720416	Pollution Incident Response Management Plan	Yes
NWRLOTS-NRT-ADM-PM-PLN-721403	Quality Management Plan	No
NWRLOTS-NRT-ADM-PM-PLN-721405	Risk Management Plan	No
NWRLOTS-NRT-SWD-AM-PLN-723029	Severe Weather Conditions Response Plan	No
NWRLOTS-NRT-SWD-RS-FRW-720717	SMS Element 17: Procurement and Contract Management	No
NWRLOTS-NRT-ADM-EM-PRO-720472-01	Spill Management Procedure	Yes
NWRLOTS-NRT-ADM-EN-PLN-720252	Stakeholder Community Involvement Plan	No
NWRLOTS-NRT-ADM-PM-PLN-721415	Training Management Plan	No
NWRLOTS-NRT-ADM-EM-PRO-720475-01	Unexpected Heritage Finds Procedure	No
NWRLOTS-NRT-ADM-EM-PRO-720476-01	Unexpected Contaminated Finds Procedure	Yes
NWRLOTS-NRT-ADM-EM-PRO-720471-01	Waste Resource Management Procedure	Yes
NWRLOTS-NRT-ADM-EM-PRO-720478-01	Water Quality Monitoring Program	Yes

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NWRLOTS-NRT-ADM-EM-PRO-720479-01 Weed Management Procedure Yes



APPENDIX



Appendix D. PIRMP Summary for website

POLLUTION INCIDENT RESPONSE SUMMARY – SYDNEY METRO NETWORK

Metro Trains Sydney (MTS) has developed this Pollution Incident Response Summary and made it publicly available in accordance with clause 98D(2) and 98D(3) of the Protection of the Environmental Operations (General) Regulation 2009 for Environment Protection Licence (EPL) No. 21247.

Authorities to notify

In the event of a pollution incident associated with the project that causes or threatens 'material harm' to the environment as defined in Section 147 of the Protection of the Environment Operations Act 1997, MTS will notify the following authorities.

RELEVANT AUTHORITY	CONTACT DETAILS	MTS RESPONSIBLE PERSON TO CONTACT
Fire and Rescue NSW	000*	Safety Manager / Environment and Sustainability Advisor
* Only in the event of an in property.	ncident that presents an immediate th	reat to human health or
EPA	(02) 9995 5000 131 555	Environment and Sustainability Advisor
Ministry of Health / Camperdown Public Health Unit	Business hours: (02) 9515 9420 After hours: (02) 9515 6111 (ask for Public Health Officer on call)	Environment and Sustainability Advisor
SafeWork NSW	131 050	Safety Manager
Hills Shire Council ¹	9843 0555 (After Hours: 9843 0555)	Environment and Sustainability Advisor
Hornsby Shire Council ²	9847 6666 (no after hours number)	Environment and Sustainability Advisor
Blacktown City Council ³	9839 6000 (After Hours: 1300 133 491)	Environment and Sustainability Advisor
City of Parramatta Council ⁴	1300 617 058 (All Hours)	Environment and Sustainability Advisor





RELEVANT AUTHORITY	CONTACT DETAILS	MTS RESPONSIBLE PERSON TO CONTACT
City of Ryde Council ⁵	9952 8222 (After Hours: 9952 8222)	Environment and Sustainability Advisor
City of Willoughby Council ⁶	9777 1000 After Hours: 9777 1000	Environment and Sustainability Advisor
Lane Cove Council	9911 3555 (24 hours)	Environment and Sustainability Advisor
North Sydney Council ⁷	9936 8100	Environment and Sustainability Advisor
City of Sydney ⁸	9265 9333	Environment and Sustainability Advisor
Inner West Council ⁹	9392 5000	Environment and Sustainability Advisor
Fire and Rescue NSW	1300 729 579 (if Fire and Rescue was not contacted initially)	Safety Manager / Environment and Sustainability Advisor

- 1. This number is to be used for Bella Vista, Norwest, Showground and Castle Hill Stations, and associated tunnels.
- 2. This number is to be used for Cherrybrook, Cheltenham and Epping Stations and associated tunnels.
- 3. This number is to be used for SMTF North, Cudgegong Road, Kellyville, Rouse Hill Stations, viaduct and surface track.
- 4. This number is to be used for Epping Station and associated tunnels.
- 5. This number is to be used for Macquarie Park and North Ryde Stations, and associated tunnels.
- 6. This number is to be used for Chatswood Station and associated tunnels.
- 7. This number is to be used for Crows Nest and Victoria Cross Stations
- 8. This number is to be used for Barangaroo, Martin Place, Pitt Street, Central and Waterloo Stations
- 9. This number is to be used for Sydenham Station and SMTF South

Determine the Local Government Area(s) relevant to the incident and only notify relevant Council(s).

Although the EPA's Incident Notification Protocol identifies 000 as the contact number for Fire and Rescue NSW, MTS has been advised that the number listed here should be used for pollution incident notifications and that 000 must only be used for emergency calls.





Community notifications

In the event of a potential or actual pollution incident, whether or not the local stakeholders are notified depends on the incident type and severity. Community stakeholder notification is required for events that:

- Will result in unacceptable health risk to community stakeholders immediately and at the time of the pollution incident, where community stakeholders are present (e.g. residing in their houses or using adjacent recreational facilities at the time of the incident).
- Will result in an unacceptable health risk to the community for instances where pollution of an area that is to be
 used by community members in the days and weeks following the incident (until such time when the pollution
 hazard is removed). These community stakeholders may not be present during the incident but might be
 present following the incident.

An unacceptable impact is defined as one which has the potential to adversely affect the health of a member of the community. This takes into consideration immediate health impacts (that occur during the incident) and health risks in the period following the incident.

The Environment and Sustainability Advisor, in consultation with the applicable Manager and the Corporate Relations Manager, will determine if community notification is required, the mechanisms by which the notification is made and the extent of the notification.

If appropriate, notification will include specific information to minimise the risk of harm, e.g. instructions to close windows and doors, or avoid contact with creeks/waterways.

MTS' Corporate Relations team will coordinate the notification of surrounding premises and residents. Communication methods may include:

- Face to face and/or telephone contact.
- Letterbox drops.
- Update to project website.
- Email distribution of messages.
- Provide protective fencing and barricading to prevent community stakeholders from entering into an affected area.
- Use of technology such as Variable Message signage and radio communications.

Surrounding residents and other land users may also need to be notified at the direction of the Emergency Services Site Controller, the EPA or the Ministry of Health, depending on the nature and extent of the incident.









Appendix E. Incident Notification Form

ITEM	DETAILS	
Date:		
Time:		
Nature of Incident:	i.e. the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known.	
Location:	i.e. of the incident and of where the likely pollution is likely to occur (e.g. pollution may occur downstream of an incident not at the site).	
Duration:	The time the pollution incident continued for. If still continuing at time of notification, state continuing.	
Circumstances:	i.e. the circumstances in which the incident occurred (including the cause of the incident, known.	
Management: i.e. the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known.		
Photos (if relevant):		

Notes:

- 1. The information required to be given is only the information known to the person notifying the incident when the notification is required to be given.
- 2. If the information required to be included in a notice under the POEOA is not known to that person when the initial notification is made but becomes known afterwards, that information must be notified in accordance with section 148 immediately after it becomes known.









Appendix F. Risk rating figure

Likelihood

SCORING SCHEME	Qualitative	Quantitative
L1 Almost Certain	Expected to occur frequently during the life of the Project	>12 times annually
L2 Very Likely	Expected to occur occasionally during the life of the Project	1-12 times annually or expect this risk to occur monthly
L3 Likely	More likely to occur during the life of the Project than not	1 time per year of Contract
L4 Possible	More likely not to occur during the life of the Project than occur	5 times during the life of the Contract Once every three years
L5 Very Unlikely	Not expected to occur during the life of the Project	3 times during the life of the Contract Once every five years
L6 Almost Unprecedented	No expectation that this risk will occur during the life of the Project	1 time during the life of the Contract Once every 15 years

Scoring Scheme (Matrix)

MATRIX	C6 Insignificant	C5 Minor	C4 Moderate	C3 Major	C2 Severe	C1 Catastrophic
L1 Almost Certain	С	В	В	A	A	*
L2 Very Likely	С	С	В	В	A 1 - 1 - 1	
L3 Likely	D	С	С	В	В	
L4 Possible	D	D	С	С	В	В
L5 Very Unlikely	D		Đ	С	С	В
L6 Almost Unprecedented	D			D	С	С

Risk Response

RATING	MTS Response	Sign-Off	
	Should be avoided except in extraordinary circumstances. All A risks should be escalated to the ERR and all available and necessary steps should be taken to reduce the level of these risks. Very High risks should only be accepted in consultation with the CEO who will evidence their understanding of the residual exposure.	Chief Executive Officer	
B High - Undesirable	These risks can only be tolerated if it is not reasonably practicable to reduce the level of this risk further and that a SFAIRP argument is evidenced. High risks are to be on the verge of being unacceptable to the business. High risks should only be accepted in consultation with the relevant LT Member who will evidence their understanding of the resident, exposure.		
C Medium - Tolerable	Medium risks can only be tolerated if it is not reasonably practicable to reduce the level of this risk further and that all WHS and Environmental considerations have been considered. Medium risks should only be accepted in consultation with the relevant Manager or Risk Owner who will evidence their understanding of the realidual exposure who will evidence their understanding of the realidual exposure.	Manager	
	Broadly Acceptable Low risks are expected but MTS remain vigilant in reducing our exposure and that all WHS and Environmental considerations have be considered. The Supervisor / Team Leader will be able to evidence their understanding of the residual exposure.		