Activity	Hazard	Consequence	Who is at risk	Degree of risk				Controls	Residual risk			
				S	P	R	HML		S	P	R	HML
Use of electrical power tools	Contact with live electricity	Electrocution Burns.	Contactors	5	4	20	H	Battery powered tools to be used where practical. Where mains power is used only 110v equipment (Transformers to be centre tapped) to be used. All electrical equipment PAT tested and tagged. Visual checks prior to each use.	5	2	10	M
All activities	Contact with biological hazards (pigeon droppings, rats urine)	Infection, leptospirosis	Contactors	5	3	15	H	PPE: Gloves, overalls, boots. Leptospirosis cards to be carried by all personnel. Good personal hygiene levels maintained. Good housekeeping to be maintained. Person briefed on vermin at site.	5	2	10	M
All activities	Slips, Trips & Falls	Fractures, cuts, bruises, abrasions	Contactors Others in vicinity of work area	4	4	16	H	Good housekeeping practices to be observed. Work area to be barriered off, signs posted. Suitable PPE to be worn for the task. Non-essential personnel excluded from work area	4	2	8	M
Working in Inverts, manholes or catch pits	Fire or explosion	Death, serious injury	Contactors	5	3	15	M	Atmospheric Monitoring for explosive gasses or enhanced oxygen levels. Top Man in position to summon assistance.	5	2	10	M
Working in Inverts, manholes or catch pits	Excessive rise in body temperature	Loss of consciousness	Contactors	4	3	12	M	Communications provided to summon assistance. Personnel trained in emergency first aid	4	2	8	M
Working in Inverts, manholes or catch pits	Noxious Gasses, fumes, vapour or lack of oxygen.	Asphyxiation, death, brain damage	Contactors	5	4	20	H	Atmospheric Monitoring for explosive gasses or enhanced oxygen levels. Provision of self-contained escape sets Safe egress route – ladders or winch Platform inverts to be vented by opening invert covers	5	2	10	M
Working in Inverts, manholes or catch pits	Sudden rise in water levels, free flowing solids	Drowning	Contactors	5	4	20	H	Where possible all water will be pumped out into the down stream catch pit using a submersible pump. Safe route of egress – ladders or winch	5	2	10	M

Activity	Hazard	Consequence	Who is at risk	Degree of risk				Controls	Residual risk			
				S	P	R	HML		S	P	R	HML
Working in Inverts, manholes or catch pits	Fall from height	Fractures, sprains, strains, cuts bruises, abrasions.	Contactors Others in close proximity to work site	4	3	12	M	Catch pit covers will be replaced as soon as practicable. Suitable signage & barriers in place to denote work area. All non essential persons will be instructed to vacate the work area.	4	2	8	M
Waste removal	Manual handling.	Strains, sprains, cuts, abrasions, WRULDs	Contactors	3	3	9	M	Manual handling assessments carried out. Personnel trained in manual handling.	3	2	6	L
Waste removal	Contamination	Disease & ill health	Contactors	3	3	9	M	All waste materials will be removed from site at the first opportunity; the materials will be double bagged and removed as per waste procedure in accordance with current legislation.	3	2	6	L
Moving equipment and materials	Manual handling hazards	Strains, sprains, cuts, abrasions, WRULDs	Contactors	4	4	16	H	Manual handling assessments carried out. Personnel trained in manual handling. Where possible track trolleys will be used or manual handling aids.	4	2	8	L
Setting up for HPWJ	Vehicular hazards	Fatalities, fractures, cuts, bruises, abrasions	Contactors	5	3	15	M	Vehicles parked so as not to be obstructive Switched off when not in use (Keys removed) Reverse audible warning	5	2	10	M
Setting up for HPWJ	Slips, trips & falls	Fractures, cuts, bruises, abrasions	Others in close proximity to work site	3	3	9	M	Barriers/signs to be set up around working area Hoses laid so as not to present trip hazards Good housekeeping, toolbox talks.	3	2	6	L
Carrying out HPWJ	Noise from HPWJ equipment/ generators	Hearing Injuries. Disturbance of neighbours	Contactors	4	3	12	M	Silenced equipment to be used. Equipment switched off when not in use Ear defenders (BS EN 352) worn when jetting	4	2	8	L
Carrying out HPWJ	High Pressure Water	Fatalities, fractures, cuts, bruises, abrasions, water	Others in close proximity to work site	5	3	15	M	Area to be barriered off and signage posted. PWT to supervise and ensure exclusion of others Personnel trained in HPWJ Toolbox talks and site briefing prior to work start.	5	2	10	M

Activity	Hazard	Consequence	Who is at risk	Degree of risk				Controls	Residual risk			
				S	P	R	HML		S	P	R	HML
	Hazard.	injection injuries.						Equipment (Hoses, couplings etc) inspected				
All activities	Manual Handling of hoses	Sprains, strains, cuts, bruises, abrasions	Contactors	3	3	9	M	Operatives trained in manual handling Toolbox talks and supervision by PWT Manual handling assessment shows low risk	3	2	6	L

Risk Assessment Matrix

Severity (S) Classifications	Likelihood (L) Classifications	Degree of Risk (R)
1 Minor – Minor accident, resulting in no serious injuries or lost time; little or no damage to property or the environment.	1 Improbable – no known instances of such an event occurring.	0 – 5 = Low Risk; ensure controls are adhered to and activity need not alter.
2 Moderate – Potential injury necessitating less than 3 days off work; damage to property or the environment requiring remedial work.	2 Remote – past experience suggests that event rarely occur.	6 – 10 = Moderate Risk; tolerable, but efforts should be made to reduce the risk where cost effective and reasonably practicable.
3 Serious – Accident reportable under RIDDOR 95; serious damage to property or the environment.	3 Possible – experience shows that events occur on occasions.	11 – 15 = Substantial Risk; all practicable measures must be taken to reduce the level of risk; tolerable only where further risk reduction is impracticable or disproportionate to the risk involved.
4 Major – Accident resulting in serious or permanent injury; major or permanent damage to property or the environment.	4 Probable – experience shows that events occur frequently.	
5 Catastrophic – Accident resulting in death or severe disablement; destruction of property; irreversible damage to the environment.	5 Likely – very likely to happen unless actively prevented.	16 – 25 = Extreme Risk; unacceptable except in extraordinary circumstances; all control measures must be taken regardless of cost.

MT1.4 Labour Force & Training

All personnel will be competent to undertake the tasks assigned.

Copies of all training certificates will be held at the Rainham Office.

1.4.a Generic Training

All attending staff and operatives will have as a minimum;

- LUCAS access permit / sentinel card with ICI-LU endorsement
- Site Induction and Task Briefings
- One staff member to be First Aid trained

1.4.b Specific Training

The table below gives indicative training requirements. The PWT will assess each location to determine the actual specific training requirements for each task.

Task	LUCAS / Sentinel	Manual Handling	Depot Awareness	Track Trolley	Basic Track Awareness	3 Day First Aid @ work	Confined Space	Asbestos Awareness	PASMA	XO19 & XO20 (Cctv)	PWT	Protection Master
PGI	Y	Y	P			Y	P	Y			Y	Y
Cleaning gravity pipes (rodding)	Y	Y	P	Y		Y	P	Y			Y	Y
Cleaning pits and sumps	Y	Y	P	Y		Y	P	Y			Y	Y
Catchpit covers and frames	Y	Y	P	Y		Y		Y			Y	Y

Task	LUCAS / Sentinel	Manual Handling	Depot Awareness	Track Trolley	Basic Track Awareness	3 Day First Aid @ work	Confined Space	Asbestos Awareness	PASMA	XO19 & XO20 (Cctv)	PWT	Protection Master
Cleaning drainage channels	Y	Y	P			Y		Y			Y	Y
Catchpit ID Plate installation	Y	Y	P			Y		Y			Y	Y
Cleaning outfalls, anti-flood valves, trash screens	Y	Y	P			Y		Y			Y	Y
Ditch maintenance	Y	Y	P			Y		Y			Y	Y
Acoustic survey	Y	Y	P			Y		Y			Y	Y
Cctv survey	Y	Y	P	P		Y	P	Y		Y	Y	Y
High Pressure Jetting	Y	Y	P	P		Y	P	Y			Y	Y

MT1.5 Plant, Equipment & Tools.

All plant, equipment and tools is logged on and off site at the start and end of each shift by the PWT.

Any mains electrical items will be PAT tested and tagged. A Calibration & Testing Matrix for equipment requiring calibration or testing will be held in the PWT pack. This will indicate the equipment serial number and the date that the next test is due. Hired-in equipment will be tagged with the next test date and be accompanied by any required documentation.

The following plant, equipment and tools may be used as part of these works. Additional plant may be required as determined by the task.

Type	Description
Electrical Equipment	Drills (110v) Breakers (110v) CAT Scanner Submersible pump (110v) Lighting (110v) Lighting (battery) Generator (super silenced) Compressor 110v leads and splitter boxes
Small Tools	Shovels, spades, drain scoops Drain rods Bungs Hammers, bolsters, cold chisels Screw drivers, spanners, pliers Crowbars Trowels

Type	Description
Other tools	Manhole lifters Ladders Track trolleys Spill Kit / Drip Tray Confined Space Equipment Safety harnesses Gas detector Buckets
Plant	Cctv Jetting unit Jet/Vac unit Two way radios

MT1.6 Personal Protective Equipment (PPE)

All equipment, PPE, and any access equipment will be regularly checked and meet health and safety requirements. Attending personnel will be required to inspect all personal and specialist protective equipment for defects and current verification prior to use and to report or return defective or non-compliant equipment to the attending PWT. Any damaged or dysfunctional PPE will not be used and replaced prior to the commencement of the works

1.6.a Mandatory PPE

As a minimum the following items are mandatory articles of PPE are required to undertake the tasks identified within this method statement

Description	Reference
Hi Visibility Jacket / Trousers	EN471 (must have Lanes logo)
Safety Footwear with Kelvar toe and mid-sole protection.	BS EN 345/346 (P, S2, S3, S5)
Head Protection	Hard Hats to BS EN 397
Hard hat	EN 397

1.6.b Specific PPE

Dependent on the activity, the following items are mandatory articles of PPE are required to undertake the tasks identified within this method statement

Description	Reference
Eye Protection	BS EN 166 (with appropriate impact protection)
Gloves	BS EN 420 (with appropriate puncture & cut resistance)
Face masks	EN149 FFP2 and FFP3
Breathing apparatus / escape sets	EN405 and EN1146

Description	Reference
Full face visor	EN166
Ear plug / defenders	EN352
Gloves, Nitrile, heavy duty	EN388 (with appropriate impact protection).
Overalls with hood and elasticated sleeves	EN340
Harness	EN361
Lanyards for fall arrest	EN354
Wellington boots / waders	EN345
Disposable overalls	EN13034

When working on NWR infrastructure or on the LUL track environment during Traffic Hours all over high visibility clothing is to be worn this includes orange upper body clothing to BS EN471:2003 class 2 & orange lower body clothing to BS EN 471:2003 class 1

MT1.7 Environmental

1.7.a Protection of LUL assets

Care will be taken when carrying equipment on and off site to avoid any damage to LUL property. Any such damage will immediately be reported to the respective Station Supervisor or Maintenance Manager Operations (Depot).

Care will be taken to avoid interference with CCTV cameras, public address systems, smoke alarms, lighting, visible cabling, cable ducts, ventilation ducts etc. or operational equipment. None of the above will be moved or disturbed during works or inspections. Signals will not be obscured and access to all safety equipment (access ramps, extinguishers etc.) must be maintained at all times.

The PWT will survey the worksite in advance of the work commencing, to ensure that there are no assets that are at risk of damage.

1.7.b Housekeeping

The PWT will brief all persons involved in the work on the need for good housekeeping in order to reduce the number of bad housekeeping related hazards on site.

In accordance with LUL Environmental strategy all members of the work party shall spend at least five minutes tidying up the area they are working in.

The method statement briefing to both contractor and sub-contractor employees should make emphasis on the need for good housekeeping in order to reduce the number of bad housekeeping related hazards on site.

General walkways and stairs will be kept clear at all times.

General tools will be stored away when not in use.

Rubbish will be removed from the working area. Rubbish will not be allowed to build up and clutter the working area or create a fire hazard.

All waste removed from site will be carried by a registered waste contractor

1.7.c Waste

The disposal of waste will be in accordance with LUL's systems of waste management and will comply with the Waste Management Regulations, Legislation and Code of Practice.

Full documentary evidence of waste disposal will be maintained in site file including evidence of licensed tips, haulage tickets and receiving tickets at tip sites.

All waste will be double bagged and removed from site by a registered waste contractor

1.7.d Noise

Consideration will be afforded to local residents, especially when arriving/leaving site

Consideration should be taken when selecting hand tools for low noise rating.

PWT to carry out noise assessment when noise generating tools are being used.

At 80decibels PWT to advise the use of ear defenders. Over 85 decibels the use of ear defenders is mandatory.

Schedule of Noisy Processes

Process	Noise Output	Comment
Using grinder/Abhor saw	85 dB (A) Range 1m	Ear defenders to be used
Using a recip saw (battery)	95 dB (A) Range 1m	Ear defenders to be used
Using a recip saw (electric)	99 dB (A) Range 1m	Ear defenders to be used
Using a drill	85 dB (A) Range – 1m	Ear defenders to be used
Lorry mounted Water Jet/Vac	85 dB (A) Range – 1m	Ear defenders to be used
Generator	85 dB (A) Range – 1m	Ear defenders to be used
Industrial Vacuum	85 dB (A) Range – 1m	Ear defenders to be used

1.7.e Traffic Management

Vehicles will not be left unattended with their engines running and will be parked in accordance with local by laws. The works will be carried out during engineering hours, therefore vehicles associated with these works will utilise parking areas available at night at the relevant station.

When a hiab or lorry is used to load/unload materials it is not to be parked on pedestrian crossings. If this is impracticable the hiab/lorry will load/unload before moving to alternative parking. In both instances a competent person(s) are to be in place so public safety is not compromised. A banks person will accompany the hiab/lorry at all times during reversing movements, where flashing beacons and hazard warning lights must be utilised.

1.7.f Air quality & Dust

From the Risk Assessment, the working group will be aware of the dangers of dust on site and will wear dust masks, goggles and gloves where appropriate and/ or apply any and all other control measures arising. Damping down should be used to reduce dust levels in all activities that create excessive amounts of dust

1.7.g Vibration

Consideration should be taken when selecting hand tools for minimum vibration (HAVS).

The PWT shall ensure that under no circumstances are the ELV times to be exceeded by operatives. If multiple tools are used by an operative, the total exposure points is to be used as reference.

The PWT shall ensure the exposure duration per operative is not exceeded, monitor and rotate staff and provide suitable rest break. HAV's Daily Exposure Record EHS 014-F02 to be completed.

Maximum time for using specific power tools for vibration to be provided

HSE Health & Safety Executive

HAND-ARM VIBRATION EXPOSURE CALCULATOR

Tool or Process	Vibration magnitude	Exposure points	Time to reach EAV 2.5 m/s² A(8)		Time to reach ELV 5 m/s² A(8)		Exposure duration		Partial exposure	Partial exposure
	m/s² r.m.s.	per hour	hours	minutes	hours	minutes	Hrs	Min	m/s² A(8)	points
9" grinder	7.5	113	0	53	3	33	0	10	1.1	19
Compactor plate	6.9	95	1	03	4	12	0	10	1.0	16
Small breaker	8	128	0	47	3	8	0	30	2.0	64

Daily exposure	Total exposure
m/s² A(8)	points
2.5	99

1.7.h Invasive Species

Prior to accessing site, information regarding the presence of invasive weed species will be ascertained from LU's weed tracker register London Underground Geographical Information System (WebGIS) and from the Ecology Guidance.

Should the works be in an area where such species are present (e.g. Japanese Knotweed or Giant Hogweed) the LU Planned Structural Maintenance Manager will be contacted for further instruction.

Precautions will be put in place to avoid contact with the invasive species and prevent the risk of spreading such species to other sites.

Potential areas shall be clearly marked on the location plan and staff briefed.

If working in or near invasive species, the area containing invasive species will be demarcated.

Any works involving the discovery of Japanese Knotweed or Giant Hogweed must be reported to LU for recording on the Invasive Weed Tracker and WebGIS.

1.7.i Protection of Wildlife and Habitats

The works covered by this method statement may impact on wildlife and / or habitats.

Prior to accessing site, reference London Underground's WebGIS and Ecology Guidance to identify known habitat areas and determine the likelihood of finding protected species.

If the proposed works go near a protected site, the LU Planned Structural Maintenance Manager will be contacted for further instruction.

Work will be conducted in compliance with the requirements stated in the Ecology Guidance.

Potential areas shall be clearly marked on the location plan and staff briefed.

Precautions will be put in place to avoid disturbing protected wildlife or habitats.

Update of WebGIS on completion of works by using the GIS Ecology update form.

MT1.8 Emergency Arrangements, Contacts & First Aid

1.8.a Emergency Arrangements

Emergency procedures are detailed in the Emergency Preparedness Plan kept within the Site File maintained by the PWT. The PWT will provide details of any local area emergency procedures to be adopted for the works. In the event of an emergency the attending site personnel must follow the directions of the PWT

1.8.b Incident Reporting

Emergency procedures are detailed in the Emergency Preparedness Plan maintained within the Site file maintained by the PWT. The PWT will provide detail of any local area emergency procedures to be adopted for the works. In the event of an emergency the attending site personnel must follow the directions of the PWT.

Report an incident or near hits by calling the Incident Line 0844 292 0292 (Auto 1558) at the earliest opportunity after the situation has been made safe to report:

- Incidents - events that resulted in injury
- Near Hits - events that could have resulted in harm
- Sub-standard conditions - hazards that have the potential to cause harm

  (where identified outside existing processes, such as H&S Tours and PGIs)
- Acts, behaviours or work methods that have the potential to cause harm

1.8.c Hospital

The nearest Hospital with A&E facilities to the location of works is maintained by the PWT in the site file.

Hospitals
Charing Cross Hospital, Fulham Palace Road, London. W8 8RF - 0208 383 0000
Hammersmith Hospital, Du Cane Road, London. W12 OHS - 0208 303 1000
High Wycombe Hospital, Queen Alexandra Road, High Wycombe, Bucks. HP11 2TT - 01494 434 411
Hillingdon Hospital, Pield Health Road, Uxbridge, Middx. UB8 3NN - 01895 238 282
Mount Vernon Hospital Rickmansworth Road, Northwood, Middx. HA1 2RN - 01923 826 111
Northwick Park Hospital Walford Road, Harrow, Middx. HA1 3UJ - 0208 864 3232
Princes Alexandra Harlow, Hamstel Rd, Harlow. CM20 1QX - 01279 444455
Royal London Hospital, Whitechapel Rd, London. E1 1BB - 020 7377 7000
Royal Free Hospital, Pond Street, London NW3 2QG - 0207 794 0500
University College London Hospital, Gower Street, London. WC1E 6AU - 0207 387 9300
Whipps Cross University Hospital, Whipps Cross Road, Leytonstone, London. E11 1NR - 020 8539 5522

1.8.d Contacts

A full contact list is maintained in the Site File

Name	Role	Contact details
Don Leggat	Lanes, Safety Advisor	07525 393 161
Greg Hulbert	Lanes, Contract Manager	07716 353 793
Trevor Osborne	Lanes, Project Manager	07801 133 623
Keith Osborne	Lanes, Night Manager	07889 843 590
Annette Chandler	London Underground, HSEQ Safety Advisor	0207 038 5000
Joe Quinlan	London Underground, Senior Construction Supervisor	07738140739

Name	Role	Contact details
Barry Poole	London Underground, Senior Construction Supervisor	07734911354
	LUL Incident line	08442920292

1.8.e First Aid

There shall be at least one First Aid at Work (FAW) qualified person in the work group.

Normally this will be the PWT, but other FAW qualified persons may be appointed as the First Aider for the works.

The appointed First Aider will carry, check and maintain a First Aid Box for 10 – 15 people as a minimum for the duration of the works.

Adequate water supplies will be maintained on site in accordance with the requirements of the COSHH data sheets.

The PWT will maintain accident book blank forms in the Site File.