



DALMIA CEMENT (B) LIMITED – CEMENT PLANT
ARIYALUR
MECHANICAL DEPARTMENT

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/154
Issued By: M.R		Approved By: HOD MECHANICAL	
HYDRA WATER SERVICE			

Scope : Outdoor car washing may result in a discharge of water to storm water drain that is potentially contaminated with gasoline, oil, residues from exhaust fumes, and detergents. The water discharged into storm water drains eventually reaches rivers, streams, creeks, and wetlands where it has the potential to impact human health and the environment. This SOP covers the procedures for minimizing the impacts of car washing.

Responsibility : Hydra maintenance Engineer

Accountability : Section Head – Utility

PPE:

1. Gum boot,
2. Safety helmet,
3. Goggles,
4. Nose Mask,
5. Face shield,
6. Hand Gloves.

Tools:

1. Car washer pump
2. High pressure gun
3. High pressure hose
4. Box Spanner set
5. Ring Spanner set

Hazards/Aspects & Impact:

Risks associated

Electrical Shock
Pipe Burst

High pressure water jet
exposure with human being

Mitigating Measures

Wear Rubber gloves and Gum boot (Electrical insulated)
Switch OFF the pump and change the hose
Monitor the pressure gauge and hose periodically.

Wear full body Apron and Face shield.
Periodically clean the water jet nozzle.

Training needs:

1. High pressure car washer pump operation
2. Emergency preparedness



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Procedure:

➤ **Definitions:**

- Pervious/porous surfaces - Surfaces that allow the movement of water and air to lower levels of soil below.
- Waste water - Any water that has been adversely affected in quality.
- Storm drain - Structure designed to drain excess rain and groundwater from paved streets, parking lots, sidewalks, and roofs.
- Sewer drain - Transports sewage through cities and other inhabited areas to sewage treatment plants to protect public health and prevent disease. Sewage is treated to control water pollution before discharge to water bodies.
- Phosphate - An inorganic chemical that has historically been one of the main ingredients in detergents. Phosphates have harmful effects on the health of rivers, lakes, streams, and other fresh waters because higher than normal phosphate levels allow algae in the water to grow faster than would naturally occur. Increased algae populations are a detriment to water quality due to increased turbidity and decreased oxygen levels.
- Emulsification - The suspension of one liquid in another, for example, oil in water. An example of a detergent that creates this effect is the Dawn brand of detergent, "it cuts through grease," i.e., through emulsification.
- Pressure washing - The term "pressure washing" typically refers to a washing system not capable of generating at least 5,000 psi. Such systems can be found at a car wash or in the form of portable equipment designed for Hydra commercial or home use.
- High pressure washing - The term "high pressure washing" refers to a high pressure washing system capable of generating a pressure of 5,000 pounds per square inch (psi) or more. This includes high pressure washing systems used at lower pressures and high volume.

There are two levels of high pressure washing, based on the water pressure used:

1. High pressure water blasting – 5,000 to 30,000 psi
2. Ultra high pressure jetting – greater than 30,000 psi

➤ **Safe operation procedures:**

1. Always parking the Hydra vehicles in a designated area with proper wheel chocks.
2. Take General work permit for Cleaning or service activity.
3. Keep the washing area neat and well organized. Sweep or pick up all trash and debris daily or as needed, before it is carried away during washing activity.



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4. Inspect the parking vehicles having any fuel leakages or not. If any leakages are found inform your operator/Section Incharge /supervisor for taking necessary action to close or isolate the leakages to avoid the contamination with wash water.
5. Wash Hydra vehicles on proper permeable surfaces. i.e, even surface ground level with clear passage of fluids or washing effluents.
6. Maintain vehicles and equipment to prevent leaks/drips, which would more easily enter wash water.
7. Obtain and use drain guards (filter inserts) to catch sediments, petroleum products, etc.
8. Keep the drain sock handy and close by as it will be used frequently. Replace drain sock when it can no longer hold back the sediments from the drain.
9. Use the drain socks to protect the wash rack drain from excessive sediments. Prior to any washing activity, put the “sock” filter medium around the sides of the drain to catch any sediment and debris from washing activity.
10. After each washing activity, sweep up the filtered sediment and debris after it is dry to keep it from going back down the drain. Transfer to a container for storage. Use DRY cleanup only.
11. Discharge all wash water containing degreasers, acids, bases, and/or metal brighteners to an on-site treatment facility, discharge to a vegetated buffer. If the wash water contained any waste oil, separate the Oil and stored in an MS barrels. The stored waste oil should be handover to stores for further disposal.
12. DO NOT let waste accumulate at Wash Rack.
13. Keep car washing equipment clean; do not allow a buildup of oil/grease/mud. Conduct daily inspections.
14. Minimize water and soap use when rinsing or washing vehicles.
15. Maintained the safe distance while servicing the Hydra equipments.
16. Educate personnel periodically for proper washing practices.

Emergency / Emergency Shut OFF:

1. If any Electrical hazard is there, First switch OFF the main and inform to the Section Electrical Authority
2. If any Emergency, Call Safety department or Call Emergency number 3108/9865152222/9750963761.
3. If any hose pipe got punctured or burst, then stop Car washing pump with an Emergency switch.



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Records/Annexure:

1. Refer General work permit register.
2. JSA as enclosed below.

JOB SAFETY ANALYSIS : (JSA)

Job Safety Analysis	Job: Cleaning of Hydra equipment	Date: 15.05.2018	Analysis by: Sec. Engineer	Reviewed by: Sec. Head
Title of employee doing job: Helper	Supervisor: Hydra incharge	Department: Mechanical	Section: Utility	Approved by: HOD
Req'd/recommended PPE: Gum boot, Safety helmet, Safety shoe, Nose Mask, Hand Gloves, Goggles and Face shield.				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Checking and operation of Car washer	Exposure of high pressure water to the body Water hose hit to the person	Use full body Apron suit Check the tightness of the hose joints as per checklists, Periodic hose maintenance and replacement. Maintained the safe distance.	Exposed to high water pressure – Body injury Water hose pipe got burst Nozzle block due to scale formation	Training, Tools & Toggles and usage of proper PPE Replace the Hose. Clean the nozzle periodically.
Water spray contact with electrical junction box	Electrical shock	Proper Insulation of junction to avoid contact with water	Exposure to electric shock, Body Injury	Training, Tools & Toggles and usage of proper PPE