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|  | **VEDANTA LIMITED –**  **VALUE ADDED BUSINESS** | **Format No.:** | **FRMT/MR/10** |
| **INTEGRATED MANAGEMENT SYSTEM** | **Revision Date:** | **10.07.2023** |
| **HAZARD IDENTIFICATION** | **Revision No.:** | **02** |
| **Page No.:** | **1 of 1** |

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| **Departmental Use Only** | |
| **Revision No: 03** | **Unit: PID1** |
| **Revision Date: 10.07.2023** | **Dept.: Production** |

A. Work activity information

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| **Sr.No.** | **Details** | **Remark** |
| 1) | Task being carried out, their duration and Frequency: | Maintenance & movement of Wheel-loader/Excavator/truck within premises for Bhavna Earth movers/plant premises, as and when required. |
| 2) | Location (s) where the work is carried out. | Contractor’s workshop / roadside |
| 3) | Who normally/occasionally carried out the task? | Wheel-loader operator, Contractor’s laborers, truck drivers |
| 4) | Who else may be affected by the work (For example visitors, subcontractors? the public) | Sub-Contractors, company employees |
| 5) | a) Has the personnel trained for performing the task  b) Any special training required | Yes |
| 6) | Is the written systems of work mandatory? If yes state, the procedure no. | Yes.  VL/IMS/PID1/PROD/WI/35 |
| 7) | Is the work permit required for the task? | No |
| 8) | Plant and machinery that may be used:  Eg : crusher, conveyor, crane, heavy earthing equipment, Truck etc, | Wheel-loader, Excavator, trucks, backhoe etc. |
| 9) | Any electrically operated hand tools are used | Welding Machines |
| 10) | Manufacturers or supplier’s instructions for operation and maintenance plant machinery and powered hand tools are available or not: | N. A. |
| 11) | Chain block, tools and shackles such as wire rope, hydraulic jack etc are used. | Yes |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | Solid spare parts of the wheeloader/trucks, backhoe, liquid oil, lubricants etc. |
| 13) | Is the material is required to be moved by hand. If yes Distance and heights of the place where materials have to move by hand. | N. A. |
| 14) | Services used Eg: compressed air, oxygen, acetylene,  LPG gas, hydraulic oil, welding electrode for welding | Welding electrode for welding hydraulic oils, Dissolved acetylene, Industrial LPG etc. |
| 15) | Physical form of substances encountered during the work (For example fume, gas, vapor, liquid, dust/powder, solid): | Solid Wheel-loader/truck, Backhoe etc. |
| 16) | Content and recommendations of safety data sheets relating to substances used or encountered:  (This is applicable in case of chemical material) | No |
| 17) | a) Relevant acts, regulations and standards relating to the work being done, the plant and machinery used, and the materials used or encountered:  b) Is the activity is reviewed for compliance to statutory requirement | No  No |
| 18) | What is the data (s) required to be monitored during the activity and the frequency of monitoring? | N. A. |
| 19) | Any information available from within and outside the organization on incident, accident and ill health experience associated with the work being done, equipment and substances used: | Yes |

2. From the above activity information hazards are to be identified and recorded below using Appendix 'A' of SP/41

1. On 25.06.08 at 15.05 hrs. the truck no. 7284 damaged the opposite PCM 04 hand railing, when he was instructed to come for pig loading.
2. On 06.11.10 at 11.35 hrs., near mechanical drill bit shed, it was observed that front tyre of M/s Bhavana contractor wheel loader loaded with graphite bags which was coming out from bag house was misaligned. After stopping the wheel loader & checked for its healthiness it was found that the left side wheel loader tyre was in position on only one bolt out of twelve bolts & wheel disc has already left its positions. No injuries taken place.
3. On 15.07.2013 at around 17.15 hrs in the process of repairing a wheel loader bucket, a plate which was being shifted to the position by five people fell on one of the workmen resulting in slight crush injury through the shoes.
4. At 13:50 hrs in Bhavana Earthmovers workshop, a wheel loader under maintenance caught fire. People and machinery around were evacuated and fire was doused using fire hydrant water. No injury to any person.
5. At PID 1, near drill bit shed, On 6th June, an excavator bearing number 2021 that was used in drill bit shed was having starting problem. The driver exited the vehicle and opened the battery cage and started tinkering, during which the vehicle started and started rolling back slowly. Immediately, the person moved from behind and entered the vehicle and secured it.
6. On 08.05.2019 in 1st shift at 11.30am near Pig Shifting area Hyva bearing no. GA07 F7517 was parking on roadside towards pig shifting cabin. While parked vehicle was moving towards the PCM 4 hit thr vehicle coming from left side bearing no. GA01 T 9332 (Crane truck). No injury to anyone.
7. On 30.07.2019, around 09:30 hrs. Wheel loader bearing Reg. No. GA05D7202 of SS & Company was engaged in dry slag loading. While clearing residual slag at slag dryer entry point, wheel loader bucket hit to the main door. There was minor damage to the slag dryer truck Entry door. There was no injury to any person. Mr. Subodh kumar was operating the wheel loader.
8. On 21.08.2020 in C shift at around 05:30 hrs at BF 2 slag pit area Bhavana Earth movers Hitachi (EX LC200) brushed against the Truck bearing no GA 04 T-8584(Belong to Bhavana Earthmovers) on the right side near the main headlight portion due to impact minor dent on right side of the vehicle (near front head light portion of the truck). No injury to any person, Alcohol test of the operator found negative.

Root cause: 1. Error in judgement of space availability while moving machine

2. Casual approach

CAPA: 2. Not to move machine if slag is being loaded at Slagpit.3. Retraining of all operators

1. On 08.11.2020 in C shift concrete block (Slab) over BF 2 Slag tunnel found fell down inside the tunnel while wheel loader was performing cleaning activity just beside bag house of ladle dumping chamber. There was no injury to anyone. Immediately area has been barricade.

Root cause: As per the marks of wheeler loader tyres seen at one end of precast support (above vertical walls of the drain), looks like the precast got dislocated at

One end support due to wheel loader operation. Consequently, one support was lost and the precast fell down in drain.

CAPA: 1. Wheel loader teeth should not come in contact with precast slab during its operation to such an extent that the precast gets shifted. Care to be taken

1. 28.08.2021 at 18:30hrs, Mr.Gangaram Lande (Company Driver) with Vehicle No GA07 F6921(PCI Bulker No.2) was taking turn to enter PCI unloading point, during this bulker’s rear piped guard left side got entangled with recently fitted walkway hand railing and hand got lifted, damaging rear left side tail light cover glass. Alcohol check of the driver is found negative.

Root cause: Newly fabricated and laid hand railing for footpath alongside road to electrical workshop was obstructing turning radius of the bulker.

CAPA: 1) The hand railing and footpath build alongside road to be removed.

Improvised cameras for vehicle for better view of vehicle from sideways

1. On 05.10.2021 at 10:00hrs, Company Raw material staff reported that walkway hand railing about 5mtr in length near store backyard junction has been damaged and fallen on road. Visited at site to check the cause looks like brushing of some unknown Vehicle. No injury reported.

Cause: Driver misjudgement 2) volvo truck

Contributory cause: Narrow Road

CAPA: 1. This road should not be used for Volvo trucks. If at all want to be used, then widen it adequately

2. Retraining to the driver.

1. On 20.05.2022 in PID 1 at around 17:30hr the backhoe (Operator Mr. Kasinath Gaude of Bhavana Contractor) after completing given job at 27mtr, while marching machine touched the height barrier which is situated below the CB -5-1. Damage has observed to the height barrier

Cause: Boom was in slightly elevated position. Incident was due to misjudgement of operator of boom height while marching.

Contributory Cause:

hazy condition caused due to heavy rain resulting in error in judgement of operator.

CAPA: 1) Training of operators instructing precautions to be taken while marching.2) Re-routing passage of Hitachi breaker at 27M conveyor area.

**Hazards identified**

1. Mechanical Hazard- Trapping Impact, Entanglement, Falling, Collision
2. Physical Hazard: Burn Injury
3. Human Behavior -Nonuse of PPE’s
4. Human Behavior -Improper housekeeping
5. Inadequate local lighting
6. Human Behavior -Completion of job in hasty manner during which one can get hurt.
7. Misalignment of tyre due to lose nut/bolts
8. Injury due to falling of objects while shifting
9. Fire in machineries under maintenance
10. Tyre bursting

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| **Prepared By:** | **Reviewed By:** |
| **Signature:** | **Signature:** |
| **Review Date: 10.07.2023** | **Review Date: 10.07.2023** |