Chemical Laboratory, TATA Steel Limited, Mines Division Noamundi, P.O. Noamundi, Dist. Singhbhum (W), Jharkhand Laboratory

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7974 (in lieu of T-3198) Page 1 of 1

Validity 14.11.2018 to 13.11.2020 Last Amended on --

| SI. | Product / Material | Specific Test Performed | Test Method Specification | Range of Testing / |
|-----|--------------------|-------------------------|---------------------------|---------------------|
| | of Test | | against which tests are | Limits of Detection |
| | | | performed | |

CHEMICAL TESTING

| I. | ORES & MINE | RALS | | |
|----|-------------|------------------------------------|---|--------------------|
| 1. | Iron ore | Total Iron (Fe) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 10.00 % to 69.5 % |
| | | | IS 1493 (Part 1): 1981 (RA 2001) | |
| | | Silica (SiO ₂) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 0.25 % to 45.0 % |
| | | Alumina (Al₂O₃) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 0.20 % to 30.0 % |
| | | Phosphorous (P) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 0.01 % to 0.60 % |
| | | Manganese (Mn) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 0.015 % to 0.850 % |
| | | Titanium Oxide (TiO ₂) | TSL/LAB/SOP/O1 (ICP-OES), Issue no 2, Issue date 1 st February 2017 | 0.05 % to 0.50 % |
| | | Loss on Ignition (LOI) | TSL/LAB/SOP/03, Issue no 2, Issue date 1 st February 2017 | 0.50 % to 20.00 % |

| Malancha Das | Nitan Garg |
|--------------|-----------------|
| Convenor | Program Manager |