

# Manufacturing Industry

## CASE STUDY

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### Key Facts

Sector            Manufacturing Industry

Category        Investigation of Impeller by NDT Approach

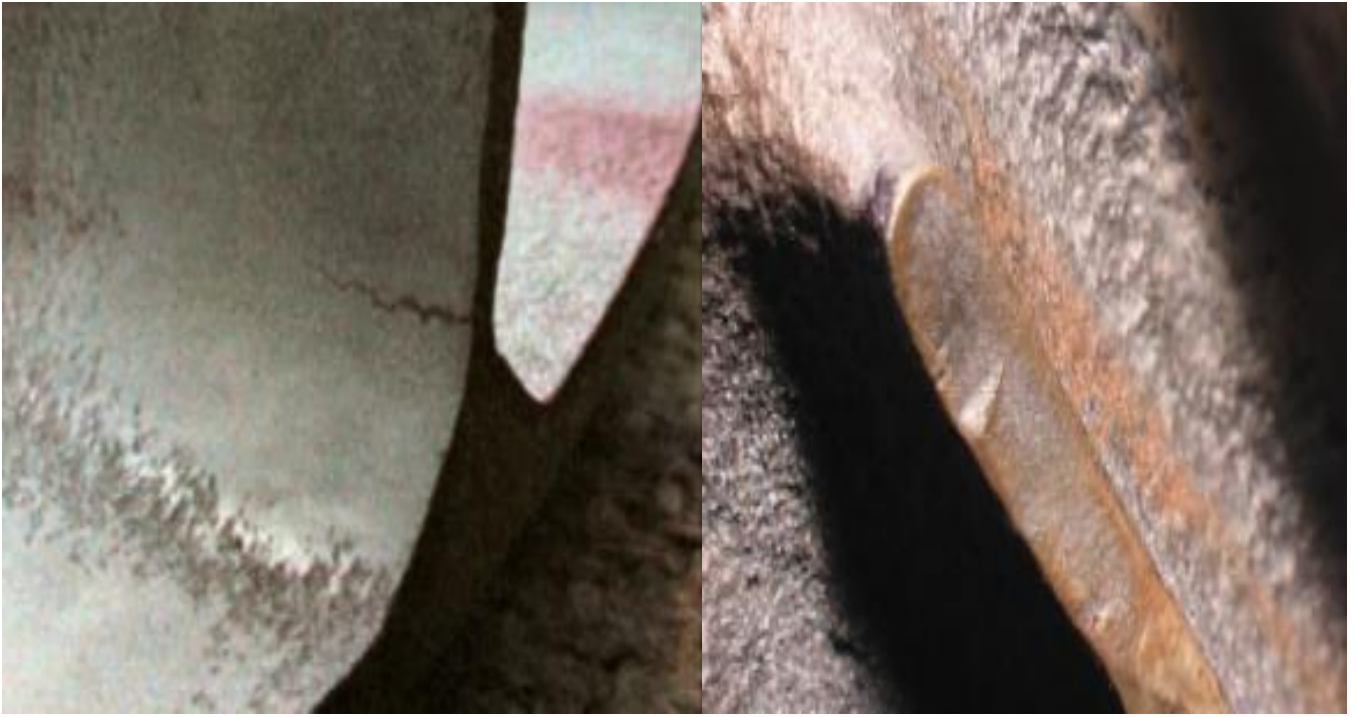
### Problem

- The impeller of compressor was reported to have prematurely failed in 2 years of service against the normal service life of the compressor is about 8 years.
- A blade of impeller got chipped off and another bent at the tip expansion bellow at compressor suction line found damaged and suction line support foundation was also found damaged.



### Diagnosis

- Inferior weld chemistry and hardness value has made the weld area vulnerable for fatigue cracks. In presence of corrosive atmosphere of water and gasses the cracks have initiated. Once the crack initiated from the leading edge reversible high cycle and low stress condition prevailed would have further propagated the crack under the combined influence of corrosion fatigue.



## Solution/Recommendations

- It is recommended to maintain proper operating parameters, follow OEM start up and shutdown procedures and assure necessary precautions for operating the equipment. Wetted operating conditions can cause severe corrosion attack in short duration and should be strictly avoided.
- The impeller has poor weld pool chemistry and possesses lower strength of joints. It is recommended that further use is not advisable.

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## Contact Us

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