

# LINE HEATER INSPECTION TEST PLAN

# 1.0 EQUIPMENT STATIC DATA

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| --- | --- | --- | --- | --- |
|  | | | | |
| EQUIPMENT LOCATION: | PA | UNIT NUMBER: | LH‐0009 | |
| EQUIPMENT TYPE: | Line Heater | MANUFACTURER: | Blue Star Welding | |
| SERVICE TYPE: | Normal | APPLICABLE DESIGNS: | B31.3 | |
| EQUIPMENT STATUS: | In‐Service | SERIAL # | | BS10K2MM-04A |
| APPLICABLE CODES: | B31.3 | REGULATORY  REQUIREMENTS: | **Can. Reg #:** ALD-05-001 | |
| LAST ITP REVIEW DATE: | 10/7/19 | NEXT ITP REVIEW DATE: | After next inspection | |
| CHIEF INSPECTOR: | Steven Theobald | CHIEF INSPECTOR  SIGNATURE: |  | |

**2.0 INSPECTION & SERVICING SCHEDULE**

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| --- | --- |
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| EXTERNAL INSPECTION FREQUENCY: | 3 year intervals |
| CONDITION MONITORING FREQUENCY: | 3 year intervals; when subjected to corrosive/erosive process streams |
| THOROUGH ASSESSMENT FREQUENCY: | 3 year intervals |
| PSV SERVICING FREQUENCY: | Per PSV ITP |

Data from last inspection report

**Date Last Inspected:** 09/11/2018

**Next UT:** 09/11/2021

Representative Corrosion Rate: 9.9 MPY

**Remaining Life: 4.5** YRS

**3.0 HISTORY AND EXPECTED DAMAGE MECHANISMS**

TABLE 3.0 – PROCESS FLUIDS/ENVIRONMENTAL CONDITIONS IMPACTING EQUIPMENT INTEGRITY

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| --- | --- | --- | --- |
| **TYPE CONCENTRATION/EXTENT AREA OF EQUIPMENT EXPOSED MITIGATION ACTIVITY** | | | |
| **Sand** |  | Pipe bends | None |
| **Frac**  **Chemicals** |  | Piping | None |
| **High**  **Pressures** |  | Piping, joints, bend radius | None |
|  |  |  |  |

**TABLE 3.1 – OPERATIONAL HISTORY (***Design parameter excursions, damage, repairs, & alterations***)**

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| --- | --- | --- | --- |
| **INSPECTION # DESCRIPTION LOCATION ON EQUIPMENT COMMENTS** | | | |
|  |  |  |  |
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|  |  |  |  |

TABLE 3.1 – ANTICIPATED DAMAGE MECHANISM AND DETECTION PLAN

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| --- | --- | --- | --- |
| **INSPECTION # DAMAGE MECHANISM LOCATION ON EQUIPMENT DETECTION METHOD** | | | |
| **01** | Erosion | Coil bends. | UT or boroscope |
| **02** | Cracking | Firetube welds | MT |
|  |  |  |  |
|  |  |  |  |

TABLE 3.2 – DETECTION PLAN DETAIL

|  |  |  |  |
| --- | --- | --- | --- |
| **INSPECTION # PREPARATION REQUIREMENTS INSPECTION EXTENT INSPECTION FREQUENCY** | | | |
| **UT** | Clean outside radius of bends to bare metal with wire brush or sandblasting. | Inspect all bend | Every 3 years or when subjected to corrosive/erosive process  streams. |
| **Visual**  **External** | Clean equipment | Line heater, skid, and attached piping. | 3 years |
| **Visual Internal** | Remove inspection ports and clean  coil of scale and other deposits. | All visible surfaces. | 3 years |
| **Boroscope** | Clean coil of solids, scale, and all  liquids. | Insert boroscope down each nozzle as  far as possible. | 3 years |
| **MT** | Clean all welds to bare metal with sandblasting, wire wheel, or other  method. | All firetube welds. | 3 years |

APPENDIX “A” – CONDITION MONITORING SURVEY DRAWING

The following drawing is to be used for the identification and placement of Condition Monitoring Locations (CML). Results of NDE examination are to be recorded on the equipment CML spreadsheet.