|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **طرح نگهداشت و افزایش تولید 27 مخزن** | | | | | | |
| **Hardness Test Procedure**  **نگهداشت و افزایش تولید میدان نفتی بینک** | | | | | | |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| V00 | Aug.2023 | IFR | Beh Koosh Vista | M.Fakharian | A.M.Mohseni |  |
| **Rev.** | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **CLIENT Approval** |
| **Class:** | |  | | | | |
| **Status:** | |  | | --- | | **IFA: Issued for Approval**  **IFR: Issued for Review**  **IFI: Issued for Information**  **AFC: Approved for Construction** | | | | | | |

# Revision Record Sheet

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAGE** | **V00** | **V01** | **V02** | **V03** | **V04** | **V05** | **V06** | **V07** |
| 1 | X |  |  |  |  |  |  |  |
| 2 | X |  |  |  |  |  |  |  |
| 3 | X |  |  |  |  |  |  |  |
| 4 | X |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |
| 15 |  |  |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |  |  |
| 18 |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |
| 20 |  |  |  |  |  |  |  |  |
| 21 |  |  |  |  |  |  |  |  |
| 22 |  |  |  |  |  |  |  |  |
| 23 |  |  |  |  |  |  |  |  |
| 24 |  |  |  |  |  |  |  |  |
| 25 |  |  |  |  |  |  |  |  |
| 26 |  |  |  |  |  |  |  |  |
| 27 |  |  |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |  |  |
| 29 |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |
| 31 |  |  |  |  |  |  |  |  |
| 32 |  |  |  |  |  |  |  |  |
| 33 |  |  |  |  |  |  |  |  |
| 34 |  |  |  |  |  |  |  |  |
| 35 |  |  |  |  |  |  |  |  |
| 36 |  |  |  |  |  |  |  |  |
| 37 |  |  |  |  |  |  |  |  |
| 38 |  |  |  |  |  |  |  |  |
| 39 |  |  |  |  |  |  |  |  |
| 40 |  |  |  |  |  |  |  |  |
| 41 |  |  |  |  |  |  |  |  |
| 42 |  |  |  |  |  |  |  |  |
| 43 |  |  |  |  |  |  |  |  |
| 44 |  |  |  |  |  |  |  |  |
| 45 |  |  |  |  |  |  |  |  |
| 46 |  |  |  |  |  |  |  |  |
| 47 |  |  |  |  |  |  |  |  |
| 48 |  |  |  |  |  |  |  |  |
| 49 |  |  |  |  |  |  |  |  |
| 50 |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAGE** | **V00** | **V01** | **V02** | **V03** | **V04** | **V05** | **V06** | **V07** |
| 51 |  |  |  |  |  |  |  |  |
| 52 |  |  |  |  |  |  |  |  |
| 53 |  |  |  |  |  |  |  |  |
| 54 |  |  |  |  |  |  |  |  |
| 55 |  |  |  |  |  |  |  |  |
| 56 |  |  |  |  |  |  |  |  |
| 57 |  |  |  |  |  |  |  |  |
| 58 |  |  |  |  |  |  |  |  |
| 59 |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |
| 61 |  |  |  |  |  |  |  |  |
| 62 |  |  |  |  |  |  |  |  |
| 63 |  |  |  |  |  |  |  |  |
| 64 |  |  |  |  |  |  |  |  |
| 65 |  |  |  |  |  |  |  |  |
| 66 |  |  |  |  |  |  |  |  |
| 67 |  |  |  |  |  |  |  |  |
| 68 |  |  |  |  |  |  |  |  |
| 69 |  |  |  |  |  |  |  |  |
| 70 |  |  |  |  |  |  |  |  |
| 71 |  |  |  |  |  |  |  |  |
| 72 |  |  |  |  |  |  |  |  |
| 73 |  |  |  |  |  |  |  |  |
| 74 |  |  |  |  |  |  |  |  |
| 75 |  |  |  |  |  |  |  |  |
| 76 |  |  |  |  |  |  |  |  |
| 77 |  |  |  |  |  |  |  |  |
| 78 |  |  |  |  |  |  |  |  |
| 79 |  |  |  |  |  |  |  |  |
| 80 |  |  |  |  |  |  |  |  |
| 81 |  |  |  |  |  |  |  |  |
| 82 |  |  |  |  |  |  |  |  |
| 83 |  |  |  |  |  |  |  |  |
| 84 |  |  |  |  |  |  |  |  |
| 85 |  |  |  |  |  |  |  |  |
| 86 |  |  |  |  |  |  |  |  |
| 87 |  |  |  |  |  |  |  |  |
| 88 |  |  |  |  |  |  |  |  |
| 89 |  |  |  |  |  |  |  |  |
| 90 |  |  |  |  |  |  |  |  |
| 91 |  |  |  |  |  |  |  |  |
| 92 |  |  |  |  |  |  |  |  |
| 93 |  |  |  |  |  |  |  |  |
| 94 |  |  |  |  |  |  |  |  |
| 95 |  |  |  |  |  |  |  |  |
| 96 |  |  |  |  |  |  |  |  |
| 97 |  |  |  |  |  |  |  |  |
| 98 |  |  |  |  |  |  |  |  |
| 99 |  |  |  |  |  |  |  |  |
| 100 |  |  |  |  |  |  |  |  |

Table of Contents

[Revision Record Sheet 2](#_Toc143904073)

[1 Introduction 4](#_Toc143904074)

[2 Reference Documents 4](#_Toc143904075)

[3 Hardness test Procedure 4](#_Toc143904076)

# Introduction

This procedure covers the minimum requirements for hardness testing of equipment with item No: PL-3201, PR-3201 which are designed and fabricated by Vista Company.

# Reference Documents

Unless stated otherwise all codes and standards referenced in this procedure shall be of the latest issue (including revisions – addenda and supplements) and the following documents shall be referred to along with this procedure.

|  |  |
| --- | --- |
| a) ASME B31.8 | - Gas transmission and distribution piping system |
| b) ASME Section VIII Div. 1 | - Boiler & Pressure Vessels code |
| c) ASME B31.3 | - Process Piping |
| d) IPS-M-PI-130  e) NACE | - Material and equipment standard for pig launching and receiving traps  NACE MR0175/ISO 15156 |

# Hardness test Procedure

Hardness test shall be done on base metal, HAZ & weld area according to Project specification.

Hardness test instrument shall be with small identification and digital display of hardness value.

Hardness testing results shall be expressed in ROCKWELL numbers.

Hardness test shall be performed as below:

1. Minimum one test for each longitudinal weld line.
2. Minimum one test for each circumferential weld line.
3. Minimum one test for each size of nozzle and other attachment to main body.
4. Minimum one test for each size of nozzle to flange
5. According to client's inspector.

Each hardness test set includes one weld metal, one base metal and one HAZ.

Acceptance criteria of hardness test is 22 HRC.

The hardness report shall indicate actual hardness reading for the test.

method, type of hardness tester, personnel conducting hardness test, type of material, and calibration shall be reported.

The surface of piece shall be grinded. Too big roughness of the measured surface could cause measure error. So, the measured surface must be metallic luster, smoothing and polish, without oil stain.