

# Waikeria Prison Development - Inspection & Test Plan (ITP)

**Process / Sub - Process:** Combined Services natural Gas & LPG Gas Tight Pressure Test

**WP Number:** NZ1005-CS-WPK-051

**ITP No.:** AES-NZ1005-STE-ITP-PMT-0012

**Rev:** 2

**Date:** 02/06/2022

**THIS INSPECTION & TEST PLAN COMPRISES THE FOLLOWING DOCUMENTS AND IS APPROVED FOR USE:**

**PART 1** Inspection and Test Plan

**PART 2** Gastight Air Pressure Test Report

**PART 3** Lot Verification Checklist

**PART 4**

**Reference Documentation:**

**Reviewed by:** Commissioning Engineer Rasem Naji refer to WF-004348 30/06/2023

**Prepared by:** Lance Craigie (Company Name) AE Smith 2/06/2023 (date)

**Reviewed by:** CPB Engineer Rajesh Sredharan (signature) [Signature] 05/07/23 (date)

**Reviewed by:** CPB QA Rep Jimmy Montgomery (signature) [Signature] 05/07/23 (date)

**Reviewed by:** CPB Completions Rep Arun TR (signature) [Signature] 05/07/23 (date)

**Reviewed by:** Consultant  
(If applicable. N/A for Architects) Mr Cilliers Claassen - AECOM  
Heather Huckle - AECOM  
Jack Yang - AECOM  
Nick Jolly - AECOM  
Mr Vincent Rousseau - AECOM (signature) refer to WF-004348 30/06/2023 (date)

**Approved by:** CPB SPE or higher Chris Revell (signature) [Signature] 05/07/23 (date)

Reference  
Documentation:

- **Project Specifications:**

NZT5007-STE-HSSP-0001  
NZT5007-STE-CESP-0001

- **Drawings:**

AES-NZ1005-STE-SHD-HYD-4003 - Natural Gas Piping Layout Area 3  
AES-NZ1005-STE-SHD-HYD-4004 - Natural Gas Piping Layout Area 4  
AES-NZ1005-STE-SHD-HYD-4006 - Natural Gas Piping Layout Area 6  
AES-NZ1005-STE-SHD-HYD-4007 - Natural Gas Piping Layout Area 7  
AES-NZ1005-STE-SHD-HYD-4009 - Natural Gas Piping Layout Area 9  
AES-NZ1005-STE-SHD-HYD-4010 - Natural Gas Piping Layout Area 10  
AES-NZ1005-STE-SHD-HYD-4011 - Natural Gas Piping Layout Area 11  
AES-NZ1005-STE-SHD-HYD-4014 - LPG & NAT Gas Piping Layout AREA 14  
AES-NZ1005-STE-SHD-HYD-4015 - LPG & NAT Gas Piping Layout AREA 15  
AES-NZ1005-STE-SHD-HYD-4016 - Natural Gas Piping Layout Area 16  
AES-NZ1005-STE-SHD-HYD-4017 - Natural Gas Piping Layout Area 17  
AES-NZ1005-STE-SHD-HYD-4018 - Natural Gas Piping Layout Area 18  
AES-NZ1005-STE-SHD-HYD-4019 - Natural Gas Piping Layout Area 19  
AES-NZ1005-STE-SHD-HYD-4020 - Natural Gas Piping Layout Area 20  
AES-NZ1005-STE-SHD-HYD-4021 - Natural Gas Piping Layout Area 21  
AES-NZ1005-STE-SHD-HYD-4022 - Natural Gas Piping Layout Area 22  
AES-NZ1005-STE-SHD-HYD-4023 - Natural Gas Piping Layout Area 23



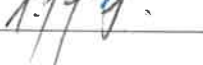
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**INSPECTION and TEST PLAN  
COMBINED SERVICES Natural GAS & LPG GASTIGHT AIR PRESSURE TEST**

**ITP # AES-NZ1005-STE-ITP-PMT-0012  
Rev. 2**

1

<b>Contract</b>	Inground Services –Gas Reticulation Installation
<b>Document Title</b>	ITP Combined Services Natural Gas & LPG Gastight Air Pressure Test
<b>Document No.</b>	AES-NZ1005-STE-ITP-PMT-0012
<b>Process</b>	Combined Services – Natural Gas & LPG Gastight Air Pressure Test for <b>Section 1 – NG – Area 23 to UT1 - @ 210kPa</b> <b>Section 2 -NG- UT1 to FM1 @ 70kPa</b> <b>Section 3-NG- UT1 to FM3 , IND , SPO &amp; KIT - @ 70kPa</b> <b>Section 4 LPG- FM1 TO LAU @ 70kPa</b>

Action	Position	Name	Signature	Date
Prepared by	AE Smith QA Coordinator	L Craigie		1/6/23
Reviewed by	AE Smith Project Manager	M Simpson		1/6/23
Approved by	AE Smith Plumbing supervisor	S Tamatea		2/6/23
Reviewed by	CPB Quality Team			
Approved by	CPB Services Manger			
Accepted by	CPB Engineer			

**1. SOCPE OF WORKS:**

This scope of works comprises the provision of the following materials , documentation, services and works for the Combined Services -Natural Gas Gastight Air Pressure Test as per AE Smith Pressure Testing Plan for Sections 1,2,3 and 4

1. Conduct Combined Services Natural Gas Gastight Air Pressure Test ( AECOM Specification - NZT5007-STE-HSSP-0001 )

2. Quality records:

- \* Test results, reports and measurements,
- \* conformance and non-conformance reports
- \* Gas certificate of compliance

**2. REFERENCED DOCUMENTATION:****Specifications:**

	NZT5007-STE-HSSP-0001		Hydraulic Services Specification
	AS/NZS 5601.1:2022		Pressure Test

**Drawings:**

	AES-NZ1005-STE-SHD-HYD-4003 - In sequence to – AES-NZ1005-STE-SHD- HYD-4023		Natural Gas Piping layout Area 3 - 23
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**3. DEFINITION OF TERMS:**

Conformance Record	Record submitted by AE Smith to CPB of the evidence pertaining to each lot which demonstrates that the specified requirements for that lot have been met
Hold Point	An identified point in a process past which AE Smith shall not proceed without a direction from CPB
Lot	A portion of material or a section of the Works which has been constructed and/or supplied under essentially uniform conditions and contains material of essentially uniform quality, or A single finished item of work which includes several materials and/or work types (e.g. a pit in place)
Witness Point	An identified point in a construction process at which an activity is observed

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**4. INSPECTION AND TEST PLAN:**

Responsible: SE-AE Smith / Downer Site Engineer, SUP-AE Smith / Downer Supervisor, SRV-Surveyor

Method: DR-Document review, FM-Field measure, FT-Field test, M-Monitoring, S-Survey, V-Visual

Record: FTR-Field test report, LTR-Laboratory test report, TDS-Technical data sheet, QCC-Quality control checklist

#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
1.0 PRE-COMMENCEMENT CHECKS FOR NATURAL GAS GASTIGHT AIR PRESSURE TEST									
1.1	Natural Gas Reticulation (AECOM Specifications – NZT5007-STE-HSSP-0001)	SUP	AES-NZ1005-STE-ITP-PMT-003	Ensure Combined Services HDPE Natural Gas Pipework Installation Inspection and Testing Plan has been signed off prior to commencing Gastight Air Pressure Test.	Document Review	Before each Test	AE Smith	CPB	Signed off ITP
1.2	General	SE	NZT5007-STE-MSSP-0001 REV 4	For all materials, a certificate of compliance shall be provided to the Client Rep. before the materials are incorporated into the works.  <ul style="list-style-type: none"><li>Specifications &amp; QA Documents Approved</li><li>Drawings are confirmed</li><li>Equipment fit for purpose</li></ul>	DR	Each material		CPB	Aconex approval  Incoming Inspection Checklists  Drawing Register
2.0 NATURAL GAS GASTIGHT AIR PRESSURE TEST – AS/NZ5601 Appendix E.4 Pipework Test Procedure									

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#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
2.1	Natural Gas Gastight Air Pressure Test	SUP	AE Smith – Waikeria Prison Development Pressure Testing Procedure V1 Appendix D Schedule 11 WCT62	<ol style="list-style-type: none"> <li>1. SYSTEM IS DISCONNECTED AT THE METER OR THE CYLINDER.</li> <li>2. ALL OPEN-END CAPS ARE CAPPED OR PLUGGED?</li> <li>3. ALL GAS APPLIANCES ARE ISOLATED?</li> <li>4. SUITABLE TESTING INSTRUMENT CONNECTED. SERIAL No.....</li> <li>5. RAISE PRESSURE TO 1.5 TIMES THE OPERATING PRESSURE <ul style="list-style-type: none"> <li>• Section 1 – NG – Area 23 to UT1 @ 210kPa = 315kPa</li> <li>• Section 2 -NG- UT1 to FM1 @ 70kPa = 105 kPa</li> <li>• Section 3-NG- UT1 to FM3 , IND &amp; SPO - @ 70kPa = 105 kPa</li> <li>• Section 4 LPG- FM1 TO LAU @ 70kPa = 105kPa</li> </ul> </li> <li>6. ISOLATE PRESSURE SOURCE AND ALLOW 2 MINUTES FOR THE TEMPERATURE OF THE TESTING MEDIUM TO STABILISE.</li> <li>7. RECORD TEST START TIME AND GAUGE READING AND PHOTOGRAPH FOR: <ul style="list-style-type: none"> <li>• Section 1</li> <li>• Section 2</li> <li>• Section 3</li> <li>• Section 4</li> </ul> </li> </ol>	DR	Before each test	AE Smith	CPB/AECOM/IR	Gastight Air Pressure Test Report / CONQA

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#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
				<p>8. TEST DURATIONS AND TEST PRESSUREs</p> <ul style="list-style-type: none"> <li>Section 1 – NG – Area 23 to UT1 - 50.52 HOURS at 315 kPa</li> <li>Section 2 -NG -UT1 to FM1: 1.13 HOURS at 105 kPa</li> <li>Section 3-NG- UT1 to FM3: 15.27 HOURS at 105 kPa</li> <li>Section 4 LPG FM1 to LAU: 10 hours at 105 kPa</li> </ul> <p>9. RECORD TEST END TIME AND GAUGE READING AND PHOTOGRAPH FOR</p> <ul style="list-style-type: none"> <li>Section 1</li> <li>Section 2</li> <li>Section 3</li> <li>Section 4</li> </ul> <p>10. CALCULATE ADJUSTED TEST END PRESSURE.AND ANY PRESSURE LOSS</p> <ul style="list-style-type: none"> <li>Section 1</li> <li>Section 2</li> <li>Section 3</li> <li>Section 4</li> </ul> <p>IF NO PRESSURE LOSS DURING THE PERIOD THE PIPEWORK CAN BE CONSIDERED GASTIGHT.</p> <p>11. RECORD PASS/FAIL</p> <ul style="list-style-type: none"> <li>Section 1</li> <li>Section 2</li> <li>Section 3</li> <li>Section 4</li> </ul>					



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#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
				12. WCT 62 (a)(i)(H) IR to witness gas start test pressure. 13. WCT 62 (a)(i)(H) IR to witness gas end test pressure.					
<b>3.0 COMPLETION RECORDS</b>									
3.1	Test results	SE	AE Smith – Waikeria Prison Development Pressure Testing Procedure V1  Schedule 11 WCT 62	WCT 62 (a)(iii) All pipework pressure test reports shall be provided to the Independent reviewer.	DR	Witness	AE Smith	CPB/AECOM/IR	FTR Gastight Air Pressure Test Report
3.2	Gas Certificate of compliance	SE	Schedule 11 WCT 62	WCT 62 (c) GAS COC shall be provided to the Independent reviewer	DR	Receive and review	AE Smith	CPB/AECOM/IR	GAS COC



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Telephone 08002376484

## **GASTIGHT AIR PRESSURE TEST REPORT**

### **NATURAL GAS RETICULATION**

PROJECT NAME / No.....  
SYSTEM NAME / No. ....  
LOCATION / DRAWING No.....  
TESTING STANDARD: .....  
SECTION OF PIPEWORK TESTED: .....  
TEST INSTRUMENT / SERIAL No.....

1. SYSTEM IS DISCONNECTED AT THE METER OR THE CYLINDER? ☐
2. ALL OPEN-END CAPS ARE CAPPED OR PLUGGED? ☐
3. ALL GAS APPLIANCES ARE ISOLATED? ☐
4. SUITABLE TEST INSTRUMENT CONNECTED. SERIAL No..... ☐
5. RAISE PRESSURE TO 1.5 TIMES THE OPERATING PRESSURE.....kPa ☐
6. ISOLATE PRESSURE SOURCE AND ALLOW 2 MINUTES FOR THE TEMPERATURE OF THE TESTING MEDIUM TO STABILISE. ☐
7. RECORD THE PRESSURE AT THE END OF TEST DURATION..... HRs .....kPa ☐
8. IF NO PRESSURE LOSS DURING THE 10 MINUTES PERIOD THE PIPEWORK CAN BE CONSIDERED GASTIGHT. ☐
- 9.. PASS / FAIL

REMARKS :-

TESTED BY :	DATE :	
WITNESSED BY :	DATE :	
CONSULTANT REVIEW	DATE :	

# Inspection and Test Plan Lot Verification Checklist

## PART 3 OF INSPECTION & TEST PLAN

<b>Lot Number:</b>	
<b>Lot Description:</b>	

*Note: Item / # records to be filled out by CPB Engineer - minimum is to match ITP, extra documents can be added*

No.	Item	Number of Records Required	LOT Subfolder No:	Remarks (initial / date)
<b>ITP / Quality Control Checklists</b>				
1.0				
1.1				
<b>Survey Results</b>				
2.0				
2.1				
<b>Test Results</b>				
3.0				

### Conformance of Work Statement (if required ie if some docs not signed):

The works for this construction lot conforms in respects to the ITP.

<b>Name:</b>	<b>Signed:</b>	<b>Subcontractor:</b>	<b>Date:</b>
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### Conformance of Work Statement:

The works for this construction lot conforms in respects to the ITP.

<b>Name:</b>	<b>Signed:</b>	<b>Foreman/Supervisor</b>	<b>Date:</b>
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### Conformance / Verification of Construction Lot Statement:

This closed lot conforms in all respects with the standards and requirements specified in the Contract Documents. The lot verification records are complete and attached. Any non-conformances have been dispositioned in accordance with the contract requirements.

<b>Name:</b>	<b>Signed:</b>	<b>Project Engineer/Senior Project Engineer</b>	<b>Date:</b>
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### Quality Review:

<b>Name:</b>	<b>Signed:</b>	<b>Quality Manager / Rep.</b>	<b>Date:</b>
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