




# Inspection & Test Plan (ITP) Review Checklist

## SECTION 1 – Inspection & Test Plan (ITP) DETAILS

<b>Project:</b>	NZ1005	<b>Contract Package:</b>	TP-30220
<b>Contractor:</b>	AE Smith	<b>Work Pack Reference No:</b>	NZ1005-CS-WPK-051 Combined Services - Rev4
<b>Date Submitted:</b>	2/11/2023	<b>Submitted By:</b>	Corrina Bilski
<b>ITP Title:</b>	Combined Services Diesel Fuel Lines	<b>ITP Ref No:</b>	AES-NZ1005-STE-ITP-PMT-0016
<b>Date Reviewed:</b>	09/01/2024	<b>Date of Next Review:</b>	NA

## SECTION 2 – ITP REVIEW STATUS (Note: PM or Authorised delegate must sign off)

<b>1<sup>st</sup> Review: PE or SPE</b> (Contract Requirements Compliance)	<b>Name:</b>	Rajesh Sreedharan	<b>Signed:</b>		<b>Date:</b>	9/01/2024
<b>2nd Review: QA Rep</b> (Quality Critical Item Compliance)	<b>Name:</b>	J. MONTGOMERY	<b>Signed:</b>		<b>Date:</b>	09/01/24
<b>3<sup>rd</sup> Review: Completions Rep</b> (Completions Critical Item Compliance)	<b>Name:</b>	Arun T. J.	<b>Signed:</b>		<b>Date:</b>	9/1/24

### 3rd Review: Project Manager

**ITP Reviewed** ☒

- This ITP has been reviewed against the Management System criteria
- All workers must read this ITP and understand activity sequence and inspection points
- CPB has no objection to work commencing

**ITP Rejected** ☐

- Please review actions / comments detailed in Section 5 below, revise accordingly and re-submit
- If clarification is needed regarding any of the comments raised, contact the reviewer(s)

**Project Manager /Construction**  
(Or Authorised Delegate)

**Name:** Andre Marquis

**Signed:** 

**Date:** 09/01/24

## SECTION 3 – ITP REVIEW REFERENCE

List the SWTC, Contract or Standards requirements documentation references and clauses that this ITP has been reviewed against.

Scope of Work Technical Criteria	Contract Conditions	ISO/AS/NZS Requirements

**SECTION 5 – DETAIL ACTIONS REQUIRED / GENERAL COMMENTS**

	Item No.	Comments

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

**Process / Sub - Process:** Combined Services – Diesel Fuel Lines

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

**ITP No.:** AES-NZ1005-STE-ITP-PMT-0016

**Rev:** 1

**Date:** 02/11/2023

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

**PART 1** Inspection and Test Plan

**PART 2** Check Sheet

**PART 3** Lot Verification Checklist

**Reference Documentation:** Standard: AS/NZS 3500.1:2018

**Project Specifications:** NZT5007-STE-HSSP-0001

**Drawings:** AES-NZ1005-TNK-SHD-MEC-0001- TO 0004 , AES-NZ1005-TNK-SHD-COS-0004

**Prepared by:** AE Smith *Calvin Cheyne* (signature) 02/11/2023 (date)

**Reviewed by:** CPB Engineer (signature) (date)

**Reviewed by:** CPB QA Rep (signature) (date)

**Reviewed by:** CPB Completions Rep (signature) (date)

**Reviewed by:** Consultant  
(If applicable. N/A for Architects) (signature) (date)

**Approved by:** CPB SPE or higher (signature) (date)

<b>Contract</b>	Diesel Fuel Lines UT1 to Tank Farm
<b>Document Title</b>	Diesel Line installation
<b>Document No.</b>	AES-NZ1005-STE-ITP-PMT-0016
<b>Process</b>	Combined Services Diesel Piping including leak detection installation and testing

Action	Position	Name	Signature	Date
Prepared by	AE Smith	Calvin Cheyne	<i>Calvin Cheyne</i>	02/11/2023
Reviewed by	AE Smith Site Manager	Michael Simpson	<i>Msimpson</i>	02/11/2023
Approved by	AE Smith Registered Plumber	<i>Stephen Tamatea</i>	<i>A.T.T.</i>	02/11/2023
Reviewed by	CPB Quality Team			
Approved by	CPB Services Manger			
Accepted by	CPB Engineer			

**SCOPE OF WORKS:**

This scope of works comprises the provision of :  
equipment & documentation for the :

In ground Diesel PLX pipe work from TNK to UT1

Above ground Stainless steel pipe work to equipment in UT1

Leak detection system

Transition sumps

Quality records, test results, reports and measurements

**REFERENCED DOCUMENTATION:****Specifications:**

	NZT5007-STE-SPC- ELEC--0001		Electrical Services Specification
	CPB-NZ1005-STE-SOW-PMT-0023		Execution – Schedule 11 Works completion tests

**Drawings:**

	AES-NZ1005-UT1-SHD-ELE-0003		DIESEL PIPING UTILITIES LAYOUTS
	AES-NZ1005-STE-SHD-ELE-6011		Diesel fuel lines Piping Layout Area 11
	AES-NZ1005-STE-SHD-ELE-6015		Diesel fuel lines Piping Layout Area 15
	AES-NZ1005-STE-SHD-ELE-6101		Diesel fuel lines Piping Trench Sequence
	AEL-NZT5007-UT1-ESDG-0052		Fuel System Schematic
	KCL-NZ1005-UT1-DWG-NSS-0016-FC-1		UT1 pipe support system
	KCL-NZ1005-UT1-DWG-NSS-0017-FC-1		UT1 pipe support system

**Associated documentation:**

	AES-NZ1005-STE-DSH-SEI-0001		Diesel Seismic joint submission
	AES-NZ1005-STE-DSH-ELE-011		Diesel Pipework Transition Sump
	AES-NZ1005-STE-DSH-ELE-0002		Durapipe PLX Diesel Fuel Pipe - Technical submission
	AES-NZ1005-UT1-DSH-ELE-0001		Stainless steel Valves
	AES-NZ1005-STE-DSH-ELE-0030		VLR 410E Vacuum Leak Detection System

	NZ HEALTH AND SAFETY AT WORK (HAZARDOUS SUBSTANCES) REGULATIONS 2017  SWP56 -V2- 2020  STM A182 -17, ASME SA182-2017 ED, F316/F316L, ASME B16.11 - 2016	Pipework and storage  Stainless Steel Pickling 316L stainless steel fittings 316L Stainless steel tube
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**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

**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 MATERIAL COMPLIANCE									
1.1	RDM & Consent Approval	CPB	RDM Tracker Consent Tracker	RDM approval tracker Consent approval tracker	Document Review	By Building/ Site Wide	AE Smith		Receipt of Approval by Client
1.2	General	SE	NZT5007-STE-SPC-ELEC-0001	<p>For all materials, a certificate of compliance shall be provided to the Client Rep. before the materials are incorporated into the works.</p> <ul style="list-style-type: none"><li>• Diesel Fuel Pipe, jointing, Including electrofusion couplers and fittings.</li><li>• Stainless steel piping</li><li>• Specifications &amp; QA Documents Approved</li><li>• Drawings are confirmed</li><li>• Equipment fit for purpose</li></ul>	DR	Each material	AE Smith		<p>Aconex approval</p> <p>Incoming Inspection Checklists</p> <p>Drawing Register</p>



#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
2.0 Installation									
2.1	Inspect trench depth, width and pipe alignment	SRV	NZT5007-STE-SPC-ELEC-0001	<ul style="list-style-type: none"><li>Confirm trench depth, width and pipe alignment shall be as shown on drawing.</li><li>Ensure Trench complies with HSNO Regulations.</li><li>Trench Inspection Check Sheet to be completed.</li></ul>	V	Once	AES (MEL)	CPB	Check Sheet + Trench Inspection Check Sheet
2.2	Number of pipes and dimensions of pipes and location	SUP	AES-NZ1005-STE-SHD-ELE-6011 AES-NZ1005-STE-SHD-ELE-6015 AES-NZ1005-STE-SHD-ELE-6101	Shall be as shown on drawings.	V + FM	Each section	AES (MEL)		Check Sheet
2.3	Location	SRV	AES-NZ1005-STE-SHD-ELE-6011 AES-NZ1005-STE-SHD-ELE-6015 AES-NZ1005-STE-SHD-ELE-6101	Shall be as shown on drawings. or as agreed on site with CPB	S	Every 20 m or change in direction	AES (MEL)		Check Sheet
2.4	Location UT1		AES-NZ1005-UT1-SHD-ELE-0003	Shall be as shown on drawings or as agreed on site with CPB	V				Check sheet/ As Built
2.5	Jointing of Pipework ( PLX)	SUP	NZT5007-STE-SPC-ELEC-0001 AES-NZ1005-STE-DSH-ELE-0002	1. Jointing of pipes shall be completed in accordance with the manufacturers requirements	V+M	Each Weld/ Joint	AES (MEL)		Check Sheet
2.6	Welding of Pipework ( SS)	SUP	NZT5007-STE-SPC-ELEC-0001	Jointing of stainless steel pipes shall be welded by a certified welder	V+	Each Weld/ Joint	AES (MEL)		Check Sheet Welders certificate



#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
2.7	Seismic Joints		AES-NZ1005-STE-DSH-SEI-0001	<ol style="list-style-type: none"> <li>1. Confirm seismic joint is as approved submission</li> <li>2. Joints are installed as detailed on the drawings</li> <li>3. Pipe work connections are complete tightened in accordance with manufacturers requirements and without leak</li> </ol>	V	Once	AES (MEL)		Check Sheet
2.8	Transition Sump	SUP	AES-NZ1005-STE-DSH-ELE-011	<ol style="list-style-type: none"> <li>1. Confirm sumps are as the approved submission</li> <li>2. Confirm sumps are installed to the manufacturers requirements</li> </ol>	V FT	Once	AES (MEL)		Check Sheet
2.6	Leak Detection System	SUP	AES-NZ1005-STE-DSH-HYD-011 VLR 410E installation manual	<ol style="list-style-type: none"> <li>1. Confirm Leak detection components are as the approved submission</li> <li>2. System is installed in accordance with the installation instructions</li> <li>3. Confirm equipment is adequately supported</li> </ol>	V FT	Once	AES (MEL)		Check Sheet
2.7	Bracketing UT1	SUP	KCL-NZ1005-UT1-DWG-NSS-0016-FC-1 KCL-NZ1005-UT1-DWG-NSS-0017-FC-1	<ol style="list-style-type: none"> <li>1. Confirm Bracketing has been installed as per KCL documentation</li> <li>2. Variance in pipe work routes / bracketing shall be reviewed by KCL</li> </ol>	V	Once	AES (MEL) KCL		Check sheet KCL report

2.8	Stainless steel valves	SUP	AES-NZ1005-UT1-DSH-ELE-0001	<p>Confirm valves are as approved submission</p> <p>Valves are located as per approved drawings</p> <p>Pressure reducing valve(s) is set to the nominated out put pressure</p> <p>Valve connections are tightened and without leak</p>	V		AES (MEL)		Check Sheet
2.9	Mechanical Joints	SUP		<p>Confirm all joints are secure and tightened in accordance with manufacturers/ industry practice</p>					Check Sheet
3.0	Pipe Markers	SUP	NZT5007-STE-SPC-ELEC-0001	<ol style="list-style-type: none"> <li>1. Mark pipe route by markers set flush inground above.</li> <li>2. Markers shall by minimum 200 x 200 x 50thick concrete slab with a brass plate fixed to top surface engraved: "FUEL PIPES UNDER" and directional arrows to indicate route.</li> <li>3. Marker Installation: Install at maximum 15m intervals and at all changes in direction.</li> </ol> <p>(Pipe Markers are not required where pipe route is covered by a concrete slab)</p>	V		AES (MEL)		Check sheet
2.10	Pipework Purge			Purge pipework with compressed air to confirm conduits are clear of debris.	V	Each circuit	AES (MEL)		Check sheet

3.0 PLX PIPEWORK FIELD ELECTROFUSION WELDING -

#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
3.1	Electrofusion Welding	SUP	NZT5007-STE- FSSP-0001 3.4.2.	Welding details completed	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		EF Coupler completed by and recorded.	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Fusion Machine Used	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		EF Coupler No. (Add picture)	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Materials Used (Size)	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Pipe surface free from scratches, deeper than 10% of the wall thickness?	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Pipe scraped and marked?	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Pipe surface cleaned with Isopropyl alcohol?	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Barcode scanned by machine.	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Record cooling time achieved.	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		Cooling time - start time/finish time:	M+V+FTR	Each Weld	AES		Check Sheet
		SUP		E.F Coupler Operator Signature Required	M+V+FTR	Each Weld	AES		Check Sheet
3.2	Final Inspection of Weld	SUP		CPB and AE Smith to inspect completed welds.	M+V+FTR	Each Weld	AES		Check Sheet

4.0 Completion Testing									
#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Control point		Records
							WP	HP	
4.1	Pneumatic pipework pressure testing		NZT5007-STE-SPC-ELE-0001 AES-NZ1005-STE-DSH-ELE-0002 PLX installation Guide	1. Pressure test to 1.5 times working pressure or not less than 350kPa	V+FTR	Each test	AES (MEL)		Check Sheet
4.2	Primary pipe Pre-Pipework Pressure Testing Inspection.		NZT5007-STE-SPC-ELEC-0001 AES-NZ1005-STE-DSH-ELE-0002 PLX installation Guide	1. 1. Conduct a visual inspection of pipework to be tested, checking all connections to ensure they are tight. 2. Ensure all valves in the system are in the correct position and tagged "DO NOT OPEN" or "DO NOT CLOSE" 3. Secondary containment pipe work shall be open to atmosphere 4. Test heads are fixed to transition fittings (at the dispenser) to allow pressure to be introduced and for the internal pressure to be measured  The other end (at the tank) must be closed off using spade connections between the compact flange/ flange connections to ensure that the tank  is both isolated and that the pressure test is not also being applied to the	V	Once	AES (MEL)		Check Sheet

				<p>tank</p> <p>5. All installation Hold Points have been signed off by CPB &amp; AECOM prior to pressure testing commencing</p>					
4.3	Introduction of air to 50 kPa	SUP	NZT5007-STE-SPC-ELEC-0001 AES-NZ1005-STE-DSH-ELE-0002 PLX installation Guide	<p>1. • Introduce air/nitrogen to an initial pressure of 0.5bar (10psi).</p> <p>• Examine all the electrofusion joints and threaded joints for any leakage using soap solution (where possible).</p>	V	Each Circuit	AES (MEL)		Check Sheet
4.4	Increasing Test Pressure to 350 kPa	SUP	NZT5007-STE-SPC-ELEC-0001 AES-NZ1005-STE-DSH-ELE-0002 PLX installation Guide	<p>The pressure may then be raised in 0.5bar increments over 15 minute intervals to a maximum pressure of 4.0bar (60psi)</p> <p>Once the target pressure is reached, measurements should be taken from the pressure gauge:</p> <p>- The minimum duration of test shall be 1 hour.</p>		Each circuit	AES (MEL)		Check Sheet
4.5	Pipework Pressure Testing (Line Test Data Sheet)	SUP	MEL Line test data sheet	<p>1. Complete pressure test to verify no leaks and complete Line Test Data Sheet.</p>		Each circuit	AES (MEL) CBR		Line Test Data Sheet
4.6	Pressure testing procedure for the secondary containment lines		NZT5007-STE-SPC-ELEC-0001 AES-NZ1005-STE-DSH-ELE-0002 PLX Installation Guide	<p>• Introduce air to an initial pressure of 0.5bar (10psi).</p> <p>• Examine all the electrofusion joints and threaded joints for any leakage</p>		Each Circuit	AES (MEL)		Check Sheet

				<p>using soap solution (where possible).</p> <ul style="list-style-type: none"> <li>The pressure may then be raised in 0.5bar increments over 15 minute intervals to a maximum pressure of 2.0bar (30psi).</li> <li>Once the target pressure is reached, measurements should be taken from the pressure gauge: <ul style="list-style-type: none"> <li>The minimum duration of test shall be 1 hour.</li> </ul> </li> </ul>					
4.6	Secondary Containment Pipework Pressure Testing (Line Test Data Sheet)	SUP	MEL Line test data sheet	Complete pressure test to verify no leaks and complete Line Test Data Sheet.		Each circuit	AES (MEL) CBR		Line Test Data Sheet
4.7	Leak Detection system Proving			<p>Simulate leak to prove system</p> <ul style="list-style-type: none"> <li>Local audible visual alarm activated</li> <li>Output to shut down diesel transfer pumps</li> </ul>	V, FT	Once	AES (MEL) CBR		FTR

5.0 As Constructed Survey									
#	Inspection and Test Control Point	Resp.	Referenced Documentation	Conformance Criteria	Method	Frequency	Ctrl Point		Records
							WP	HP	
5.1	As-constructed survey	AES	NZT5007-STE-SPC-ELEC-0001	As-constructed survey must capture the horizontal and vertical locations of all newly constructed or relocated underground trenches and pipework.	S	Each Lot	CPB		Survey drgs
5.2	As Built Drawings Above Ground installation	AES	NZT5007-STE-SPC-ELEC-0001	Mark up construction drawings with as constructed changes	S	UT1 TNK	AES		As built drgs
6.0 Completion Records									
6.1	Test results			Line Test Data Sheets shall be provided FTRs will be provided	DR	Witness	AES	CPB/ AEC	
6.2	Conformance records	SUP	NZT5007-STE-HSSP-0001	As Built drawings with constructed changes.	V	Each Lot UTI TNK	AES	CPB / AEC	Calibration Register, Individual calibration certificates
6.3	HSNO Certification	SE	HSNO Regulations	HSNO Certification	FTR	On completion of installation	AES		HSNO certificate



6.4	As-built survey		NZT5007-STE-SPC-ELEC-0001	As built completed.	DR	Once	AES	CPB	Survey Drawings UT1 as constructed
6.5	Schedule WCT 12 Penetrations		Schedule 11	All penetrations from and between secure areas, above and below ground, are less than 125mm in at least one plane, and in circular ducts no greater than 225mm in diameter (or have high tensile steel bars to reduce the aperture to no greater than 125mm in at least one plane).	DR	On completion of the installation if applicable.		CPB	WCT Inspection by IR

# 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				

<b>Conformance of Work Statement (if required ie if some docs not signed):</b>			
The works for this construction lot conforms in respects to the ITP.			
<b>Name:</b>	<b>Signed:</b>	<b>Subcontractor:</b>	<b>Date:</b>
<b>Conformance of Work Statement:</b>			
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>
<b>Conformance / Verification of Construction Lot Statement:</b>			
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>
<b>Quality Review:</b>			
<b>Name:</b>	<b>Signed:</b>	<b>Quality Manager / Rep.</b>	<b>Date:</b>



***AE SMITH***

A SPOTLESS COMPANY

# **NZC10013 - Waikeria - Combined Services In-ground Pipework**

**QA - Mechanical Inspections  
Combined Services In-ground Pipework  
Diesel Line ITP Page**

# Report summary



Name	Status	Last Activity
<b>Diesel Line Installation</b>		
Diesel Fuel Line Installation - <a href="#">page 3</a>		
Electrofusion Welding - <a href="#">page 6</a>		
Electrical In-ground Conduits and cable pits - <a href="#">page 8</a>		

# Diesel Fuel Installation



## QA - Mechanical Inspections - Combined Services In-ground Pipework - Diesel Line Installation - Diesel Fuel Line Installation

**First Activity:** Date report Started  
**Last Activity:** Date report Finished

**Checklist:** Pass / Failed/ N/A

**Passed:**  
**Failed:**  
**N/A:**

## Diesel Fuel Line Installation

<b>ROM &amp; Consent Approval received by the client and approved?</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>All material certificates of compliance are provided to the client before the materials are incorporated into the works.</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>Inspect trench depth, width and pipe alignment</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
Confirm trench depth, width and pipe alignment shall be as shown on drawing.			
Ensure Trench complies with HSNO Regulations.			
Trench Inspection Check Sheet to be completed.			
<b>Number of pipes and dimensions of pipes shall be shown on the drawing</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>Location of pipes shall be shown on the drawing</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>Electrofusion Welding Checklist completed for each joint ?</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>Pneumatic Pipework Pressure Testing.</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
To be pressure tested to 1.5 times working pressure or not less than 350 kPa.			
<b>Pre-Pipework Pressure Testing Inspection</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date

<b>Pre-Pipework Pressure Testing Inspection</b>			
Conduct a visual inspection of pipework to be tested, checking all connections to ensure they are tight.			
Ensure each test length is capped and ball valve installed.			
Ensure all valves in the system are in the correct position and tagged "DO NOT OPEN" or "DO NOT CLOSE"			
All installation Hold Points have been signed off by CPB & AECOM prior to pressure testing commencing.			
<b>Introduction of Air to 300 kPa</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
Gradually introduce air into the system to a pressure of 300 kPa and hold for 1 hour.			
Monitor for any drop-in pressure.			
If a leak is identified discharge the air prior to rectifying any leaks.			
<b>Increasing Test Pressure</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
If no leaks are identified Increase pressure by 10% increments until test pressure is achieved.			
<b>Line Test Data Sheet Completed</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
<b>Pipe Markers</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
Mark pipe route by markers set flush in ground above.			
Markers shall be minimum 200 x 200 x 50 thick concrete slab with a brass plate fixed to top surface engraved: "FUEL PIPES UNDER" and directional arrows to indicate route.			
Marker Installation: Install at maximum 15m intervals and at all changes in direction.			
Note: Pipe Markers are not required where pipe route is covered by a concrete slab			
<b>As-Builts Completed.</b>			
<u>Status</u>	Pass / Fail / N/A	AES Rep	Date
Signature	<div></div>	AES Rep	Date
Signatory	<div></div>	AES Rep	Date

As-Builts Completed.			
Signature	<div></div>	CPB Rep	Date
Signatory	<div></div>	CPB Rep	Date



## Electrofusion Welding



## QA - Mechanical Inspections - Combined Services In-ground Pipework - Diesel Line Installation - Electrofusion Welding

**First Activity:** Date Report Started  
**Last Activity:** Date Report completed

**Checklist:** Pass / Failed/ N/A

**Passed:**  
**Failed:**  
**N/A:**

## Electrofusion Welding

<b>Welding details</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
EF Coupler completed by and recorded.			
Fusion Machine Used - SR No 402-1348 Caldertech EF welder			
Record EF Coupler Used (Size)			
<b>Pipe surface free from scratches, deeper than 10% of the wall thickness ?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Pipe scraped and marked ?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Pipe surface cleaned with Isopropyl alcohol?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Barcode scanned by machine?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Record cooling time achieved?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Details of E.F Coupler Operator</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Name	<input type="text"/>		

Post weld checks completed			
Status	Pass/ Fail / N/A	AES Rep	Date
Signature	<div></div>	AES Rep	Date
Signatory	<div></div>	AES Rep	Date
Signature	<div></div>	CPB Rep	Date
Signatory	<div></div>	CPB Rep	Date

# Electrical In-ground Conduits and cable pits



**QA - Mechanical Inspections - Combined Services In-ground Pipework - Diesel Line Installation - Electrical In-ground Conduits and cable pits**

**First Activity:** Date Report Started  
**Last Activity:** Date Report Finished

**Checklist:** Pass/ Failed/ N/A

**Passed:**  
**Failed:**  
**N/A:**

## Electrical In-ground Conduits and cable pits

<b>ROM &amp; Consent Approval received by the client and approved?</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>All material certificates of compliance are provided to the client before the materials are incorporated into the works.</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Location</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Shall be as shown on the drawings,			
Shall be as instructed by CPB Rep. as to best suit the conditions on the Site at the time of construction.			
<b>Confirm trench depth, width and pipe alignment</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Trench depth, width and conduit alignment shall be as shown on drawing			
Excavation Checklist to be completed prior to installing services.			
<b>Bottom of the trench shall be compacted to form a firm uniform surface free from loose material.</b>			
<u>Status</u>			
<b>Number of conduit dimensions shall be shown on drawings.</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>Location of conduits shall be shown on the drawings.</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
<b>After Installation all conduits shall be free from foreign matter and from rough edges which could damage the cable during Installation.</b>			
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date

	<b>After Installation all conduits shall be free from foreign matter and from rough edges which could damage the cable during Installation.</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
	<b>Where practicable conduits shall enter and exit the pit at the same height and orientation.</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
	<b>Bedding of Conduit and Pit</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Conduits and pits shall be bedded on approved bedding material.			
Bedding material shall be 150mm above top of conduit			
Orange marker tape installed with the words DANGER Electrical Cable buried below, laid in the trench 150mm below ground level.			
	<b>Conduit Pits</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Conduit entering and exiting a pit shall conform to the locations and dimensions shown on construction drawings and specifications.			
Conduits shall protrude into pits at least 50 mm and not more than 100 mm.			
Where practicable, conduits shall enter and exit a pit at the same height and orientation.			
Sealing around conduits where they enter the pit is to be undertaken on the inside and outside of the pit.			
All pit lids to be labelled ⚡ELECTRIC CABLES⚡ and directional arrows set flush in the ground.			
All pits to be recessed with removable lids (Class B Steel Lids) to accommodate a padlock.			
	<b>Bell mouths to be installed where possible and correctly colour coded.</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
	<b>Draw Rope Installation</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date
Draw rope shall be installed in each conduit run and shall extend a minimum of 500 mm above the top of pit collar.			
Rope ends shall be firmly secured to prevent the ends being lost in a conduit.			
	<b>As-built drawings completed.</b>		
<u>Status</u>	Pass/ Fail / N/A	AES Rep	Date

As-built drawings completed.			
Signature	<div></div>	AES Rep	Date
Signatory	<div></div>	AES Rep	Date
Signature	<div></div>	AES Rep	Date
Signatory	<div></div>	AES Rep	Date

# Attachments

