

PULPER FEED PUMP STATION HANDOVER PACKAGE Oxley WRP

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OXLEY WRP - PULPER FEED PUMP STATION - HANDOVER PACKAGE

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Approval

	Name	Signature	Date
JHG	Tate Brammer	The	22/6/12
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1. Design Documents

1.1. Updated Functional Description

Oxley WRP	
Functional Specification	Customer: Queensland Urban Utilities

Oxley Creek Water Reclamation Plant DWAS Storage & Feeding (Pulper Feed Pump Station) Functional Specification

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Functional Specification	Customer: Queensland Urban Utilities

1.1. DWAS Storage and Feeding

1.1.1. Process Overview

DWAS from the onsite GDD/BFP and imported DWAS are conveyed to a storage bin for further processing. Both onsite dewatering and the import DWAS facility will not operate if the conveyor and storage system is full or faulty.

There will be three possible destinations for DWAS from the pulper feed pumps:

- 1. Mode 1 Pulper Feed
- 2. Mode 2 Bypass to Digesters
- 3. Mode 3 Bypass to Out Loading.

The mode is governed by the position of three hand isolation valves. The valves will be manually operated, having position feedback for the control system. The following table outlines the positions:

TAG No.	Description	Monitoring	Mode 1 Position	Mode 2 Position	Mode 3 Position
HV-620-30	Pulper Feed Isolation Valve	Open/Close	Open (ZSO62030)	Closed (ZSC62030)	Closed (ZSC62030)
HV-620-31	Digester Bypass Isolation valve	Open/Close	Closed (ZSC62031)	Open (ZSO62031)	Closed (ZSC62031)
HV-620-32	Bypass to out loading Isolation valve	Open/Close	Closed (ZSC62032)	Closed (ZSC62032)	Open (ZSO62032)
HV-620-19	Bypass Lines Flush Point Isolation	None	Closed	Open	Open

In mode 3, direct bypass to out loading, service water dilution is interlocked so that it does not occur, but air lining of the pipe is allowed. In this mode to ensure air doesn't enter the pulper or digesters HV-620-30 & 31 must be locked closed.

The system is equipped with a duty/duty assist feeding system to transfer DWAS to the out loading facility. The feeding system consists of:

- Sludge Feed Conveyors (CV-620-10/20)
- Pulper Pump Anti-Bridge Feeders (CV-620-11/12/21/22)
- Pulper Feeder Pumps (PU-620-10/20)
- Discharge Valves (FCV-620-10/20)

The Sludge Feed Conveyors operate to maintain a pressure setpoint in the Sludge Feed Chute. The operation prevents dry running of the pulper feeder pumps.

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1.1.2. Equipment

1.1.2.1. Equipment List

1.1.2.1.1. Equipment List – DWAS Storage

Tag	Equipment	Range	Туре	Make & Model	Comment
CV-610-11	BFP Collector Conveyor 1				
ESP-610-11	BFP Collector Conveyor 1 Electronic Shear Pin				
ZS-610-11	BFP Collector Conveyor 1 Under Speed Switch				
CV-610-01	BFP Collector Conveyor 2				
ESP-610-01	BFP Collector Conveyor 2 Electronic Shear Pin				
ZS-610-01	BFP Collector Conveyor 2 Under Speed Switch				
CV-610-02	BFP DWAS Transfer Conveyor				
ESP-610-02	BFP DWAS Transfer Conveyor Electronic Shear Pin				
ZS-610-02	BFP DWAS Transfer Under Speed Switch				
ZSC-610-04	DWAS Transfer to Bin Feed Conveyor Chute Closed				
ZSO-610-04	DWAS Transfer to Bin Feed Conveyor Chute Opened				
CV-610-03	DWAS Bin Feed Conveyor 1				
ZS-610-05	DWAS Bin Feed Conveyor 1 Under Speed Switch				
ZS-610-07	DWAS Bin Feed Conveyor 1 Inspection Hatch Open				
CV-610-04	DWAS Bin Feed Conveyor 2				
ZS-610-06	DWAS Bin Feed Conveyor 2 Under Speed Switch				
ZS-610-08	DWAS Bin Feed Conveyor 2 Inspection Hatch Open				
LIT-620-01	DWAS Storage Level				
WIT-620-01	DWAS Storage Weight				

1.1.2.1.2. Equipment List – Pulp Feeding & Diversion

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Tag	Equipment	Range	Туре	Make & Model	Comment
CV-620-10	Sludge Feed Conveyor 1				
CV-620-20	Sludge Feed Conveyor 2				
PIT-620-01	Pulper Feed Pump 1 Inlet Pressure Transmitter				
PIT-620-02	Pulper Feed Pump 2 Inlet Pressure Transmitter				
CV-620-11	Pulper Feed Pump 1 - Anti Bridge Feeder 1				
CV-620-12	Pulper Feed Pump 1 – Anti Bridge Feeder 2				
CV-620-21	Pulper Feed Pump 2 – Anti Bridge Feeder 1				
CV-620-22	Pulper Feed Pump 2 – Anti Bridge Feeder 2				
PU-620-10	Pulper Feed Pump 1 - Pump Drive				
PU-620-20	Pulper Feed Pump 2 - Pump Drive				
PSH-620-10	Pulper Feed Pump 1 Pressure Switch				
PSH-620-20	Pulper Feed Pump 2 Pressure Switch				
FCV-620-10	Pulper Feed Pump 1 Valve				
FCV-620-20	Pulper Feed Pump 2 Valve				
FIT-620-25	DWAS to Pulper Flow Transmitter				
ZSC-620-30	DWAS to Pulper Valve Closed				
ZSO-620-30	DWAS to Pulper Valve Opened				
ZSC-620-31	Bypass to Digester Valve Closed				
ZSO-620-31	Bypass to Digester Valve Opened				
ZSC-620-32	Bypass to Out loading Valve Closed				
ZSO-620-32	Bypass to Out loading Valve Opened				
FCV-620-28	DWAS to Pulper Instr. Air Valve				
FIT-620-35	Pulper Feed Dilution Service Water Flow meter				
FCV-620-35	Pulper Feed Dilution Service Water Control Valve				
FCV-620-41	Pulper Feed Pump 1 Service				

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	Water Valve		
E0) / 000 40	Pulper Feed Pump 2 Service		
FCV-620-42	Water Valve		
700 000 40	Service Water Dilution Valve		
ZSC-620-40	Closed		
700 000 40	Service Water Dilution Valve		
ZSO-620-40	Opened		
LSH-620-51	DWAS Sump Level switch		
DIT 000 05	DWAS to Pulper Pressure		
PIT-620-25	Transmitter		
ECL 660 04	THU Service Water Booster		
FSL-660-01	Pump Flow Low Switch		

1.1.2.2. Process Instrumentation

1.1.2.2.1. DWAS Transfer Conveyors Electronic Shear Pin Switches: ESP-610-11, ESP-610-01, ESP-610-02

Some of the DWAS transfer conveyors has an electronic shear pin switch. These switches will operate to fault the conveyor.

1.1.2.2.2. DWAS Transfer Conveyors Under Speed Switches: ZS-610-11, ZS-610-01, ZS-610-02, ZS-610-05, ZS-610-06

Each of the DWAS transfer conveyors has an under speed switch. These switches will operate to fault the conveyor.

1.1.2.2.3. DWAS Transfer Conveyor Chute Position Switches: ZSO-610-04, ZSC-610-04

The BFP DWAS transfer conveyor has both an open and closed chute position switch. The DWAS bin feed conveyors only have open chute position switches. These switches operate as Standard Process Digital Inputs, and shall be controlled as outlined in the functional standards.

1.1.2.2.4. DWAS Bin Feed Conveyor Inspection Hatch Open Switches: ZS-610-07, ZS-610-08

Each of the DWAS bin feed conveyors has an inspection hatch open switch. These switches will provide an alarm only.

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1.1.2.2.5. DWAS Storage Indicators: LIT-620-01, WIT-620-01

These indicators measure the level and weight of the DWAS storage bin, respectively. The level transmitter operates as Standard Process Level Input. The weight transmitter operates as Standard Process Analogue Input. These indicators shall be controlled as outlined in the functional standards.

1.1.2.2.6. Sludge Feed Conveyors Pressure Indicators: PIT-620-01, PIT-620-02

These pressure indicators measure the pressures at the sludge feed conveyor chutes. These devices operate as Standard Analogue, and shall be controlled as outlined in the functional standards. The process value of this device is filtered and is scaled from 0 to 5 barg.

1.1.2.2.7. Pulper Feeder Pumps Pressure Switches: PSH-620-10, PSH-620-20

These switches indicate when there is high pressure at the pulper feeder pumps. These devices will operate to fault the corresponding pump by setting the pressure fault bit. A high pressure alarm is generated when the pump has been running for 30 seconds and the pressure switch has detected high pressure.

1.1.2.2.8. Pulper Feeder Flow Indicator: FIT-620-25

This flow meter measures the amount and rate of DWAS fed from the storage bin. This device operates as a Standard Flow meter, and shall be controlled as outlined in the functional standards. The process value of this device is filtered, and is scaled from 0 to 15 L/s.

1.1.2.2.9. Pulper Feeder Service Water Flow Indicator: FIT-620-35

This flow meter measures the amount and rate of service water that is used to dilute DWAS. This device operates as a Standard Flow meter, and shall be controlled as outlined in the functional standards. The process value of this device is filtered, and is scaled from 0 to 5 L/s.

1.1.2.2.10. DWAS Diversion Valve Position Switches: ZSC-620-30, ZS0-620-30, ZSC-620-31, ZSC-620-31, ZSC-620-32, ZSO-620-32

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These switches indicate the position of the DWAS diversion hand valves.

1.1.2.2.11. Pulper Feeder Service Water Booster Valve Position Switches: ZSC-620-40, ZS0-620-40

These switches indicate the position of the Pulper Feeder service water booster valve.

1.1.2.2.12. Pulper Feeder Bund High Switch: LSH-620-51

This level switch indicates the high level of the Pulper Feeder Bund. This device operates as a Standard Process Digital Inputs, and shall be controlled as outlined in the functional standards.

1.1.2.2.13. Pulper Feed Pressure Indicator: PIT-620-25

This pressure indicator measures the pressure of the fed DWAS before it gets diverted to the pulper or digesters or out loading. This device operates as a Standard Analogue, and shall be controlled as outlined in the functional standards. The process value of this device is filtered and is scaled from 0 to 1600 kPa.

1.1.2.2.14. THU Service Water Booster Pump Flow Low Switch: FSL-660-01

This switch indicates that the service water booster pumps are not producting enough flow. If this switch indicates low flow while a booster pumps is running, a low flow alarm will be generated and the running booster pump will stop.

1.1.2.3. Controlled Equipment

1.1.2.3.1. DWAS Bin Feed Conveyors: CV-610-11, CV-620-01, CV-610-02, CV-610-03, CV-610-04

These conveyors transfer DWAS from the GDD/BFP to the DWAS storage bin. CV-610-01/02/11 operate as Standard Drives, the other two operate as Standard Variable Speed Drives, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

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1.1.2.3.2. Sludge Feed Conveyors: CV-620-10, CV-620-20

These conveyors run to maintain pressure in the feed conveyor chutes. These devices operate as a Standard Variable Speed Drive, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.2.3.3. Pulper Pump Anti Bridge Feeders: CV-620-11, CV-620-12, CV-620-21, CV-620-22

These motorised units prevent bridging in the feed conveyor chutes to the pulper feeder pumps. These devices operate as a Direct-on line Drive, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.2.3.4. Pulper Feed Pumps: PU-620-10, PU-620-20

These pumps feed Sludge into the pulper. These devices operate as a Standard Variable Speed Drive, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.2.3.5. Pulper Feeder Lines Control Valves: FCV-620-10, FCV-620-20

The flow control valves control flow on the pulper feeder lines. These devices operate as Standard Control Valves, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.2.3.6. Pulper Feeder Instrument Air Control Valve: FCV-620-28

This flow control valve controls air entry into the sludge pipe. This device operates as a Standard Control Valves, and is controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.2.3.7. Pulper Feeder Service Water Dilution Control Valve: FCV-620-35

This flow control valve controls the amount of service water being diluted with the DWAS. This device operates as a Standard Modulating Control Valve, and is controlled outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

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1.1.2.3.8. Pulper Feeder Lines Service Water Control Valve: FCV-620-41, FCV-620-42

These flow control valves control the service water dilution with the DWAS. These devices operate as Standard Control Valves, and are controlled as outlined in the functional standards. The automatic operation of this device is controlled by the *Pulper Feeder Sequence*.

1.1.3. Automatic Control

1.1.3.1. DWAS Storage

The following conveyors will be running when the dewatering system is running:

- CV-610-11 (Only if dewatering line 3 is operating)
- CV-610-01
- CV-610-02
- CV-610-03/04 (duty/duty)

These conveyors will only operate if the Dewatered WAS Storage Bin level and weight are acceptable.

In the case that one of the duty/duty conveyors fail, the other will need to run at a higher speed and the following set points are required:

- DWAS Bin Feed Conveyor 1 'Normal Operation' Speed Set point
- DWAS Bin Feed Conveyor 2 'Normal Operation' Speed Set point
- DWAS Bin Feed Conveyor 1 'Single Transfer DWAS Feed Conveyor Operation' Speed Set point
- DWAS Bin Feed Conveyor 2 'Single Transfer DWAS Feed Conveyor Operation' Speed Set point

When the DWAS storage conveyors are called to operate, the following sequence occurs:

- 1. Start Bin Feed Conveyor
- 2. Start Transfer Conveyor
- 3. Start DWAS Collector Conveyor 2
- 4. Start DWAS Collector Conveyor 1 (only if GDD/BFP 3 is running)

When the DWAS storage conveyors are called to shutdown, the following sequence occurs:

- 5. Stop DWAS Collector Conveyor 1 (only if GDD/BFP 3 was running)
- 6. Stop DWAS Collector Conveyor 2
- 7. Stop Transfer Conveyor

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8. Stop Bin Feed Conveyor

Start and stop delays will be available on the OWS to configure the start up and shutdown sequence.

1.1.3.2. Pulp Feeding

To prevent the pulper feed pumps from running dry, the Sludge Feed Conveyors operate to maintain DWAS in the Pulper Pump Feeder Chute. The speed of the Sludge Feed Conveyors is controlled via a PID loop and is inversely proportional to the upstream pressure indicators PIT-620-01/02. While operating in the PID loop, the Sludge Feed Conveyors will have a minimum speed of 50% and will operate with the pressure low and high set point for the start and stop signals.

The Pulp Feeding System is equipped with a duty/standby feeding system consisting of:

- Sludge Feed Conveyors (CV-620-10/20)
- Pulper Pump Anti Bridge Feeders 1 and 2 (CV-620-11/12/21/22)
- Pulper Feeder Pumps (PU-620-10/20)
- Discharge Valves (FCV-620-10/20)

When the feeding system is called to run the following sequence is executed:

- 9. Start Sludge Feed Conveyor.
- 10. Open Discharge Valve.
- 11. Start Pulper Feed Pump and Pulper Pump Anti Bridge Feeders.

1.1.3.3. Pulper Feeding Mode 1: Pulper Feed

In this mode, the pulper feed pumps operate in duty/standby. Ideally, the feed pumps will be running all the time to minimise the wear on the pumps. Pump wear, or possible overload, will occur after a stoppage when displacing the stationary sludge in the piping.

There are two modes for DWAS flow control to the pulper:

- Auto: Pulper Level Control
- Manual: Constant Speed Control

The following data will be sent from the Thermal Hydrolysis PLC to the Sludge PLC:

Tag	Туре	Purpose
dsLSHH01	Boolean	Pulper Level Switch High High
dsLIT01H	Boolean	Pulper Level Indicator High
dsLIT01HF	Boolean	Pulper Level Indicator High Fill
dsLIT01LF	Boolean	Pulper Level Indicator Low Fill
dsLIT01L	Boolean	Pulper Level Indicator Low

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dsLIT01LL	Boolean	Pulper Level Indicator Low Low
dsPulperAvailable	Boolean	Pulper Available
dsCommsOK	Boolean	Stops pulper feeding if false.
dcRunServiceWater	Boolean	Start service water booster pumps
asPulperLevel	Real	The current level of the Pulper Bin
acPulperLevelSP	Real	The level set point of the Pulper Bin
acPulperFlowSP	Real	The flow set point for feed

The following start / stop conditions will be calculated as follows:

dcPulperFeedStop = (dsLSHH01) OR (dsLIT01H) OR (dsLIT01HF) OR (NOT dsCommsOK) OR (NOT dsPulperAvailable)

dcPulperFeedStart = ((dsLIT01LF) OR (dsLIT01L)) OR (dsLIT01LL)) AND (dsPulperAvailable) AND (dsCommsOK)

Pulper feeding will start on the dcPulperFeedStart condition being met. Feeding will continue until the dcPulperFeedStop condition is met. Feeding will recommence when the next dcPulperFeedStart condition is met.

Dilution water is added to the sludge downstream of the pulper feed pumps. There are two modes of operation for water dilution. Firstly, in Automatic mode, water dilution flow (FIT-625-35) is paced to the sludge flow rate (FIT-620-25). Secondly, in Manual mode, water dilution takes place at a fixed flow set point at FIT-620-35.

Boosted Service Water is fed to the Thermal Hydrolysis Process. The system is boosted via duty/standby fixed speed booster pumps (PU-660-10 and PU-660-20). The duty Service Water Booster is called to operate by the Thermal Hydrolysis PLC command dcRunServiceWater signal. This signal is different to the start pulper feed signal. There is a Pressure Relief Valve (PRV-660-01) which then reduces the pressure if required to maintain the service water pressure with in tight tolerance required by the Thermal Hydrolysis Process.

1.1.3.4. Pulper Feeding Mode 2: Bypass to Digesters

In this mode the Pulper Feed Pumps operate duty/duty assist as the digester feed pumps. The operator will be able to manually start and stop feed via SCADA.

Dilution water is added as necessary downstream of the feed pumps and downstream of flowmeter FE62025. The following setpoints apply:

- MODE 2 DIGESTER FEED FLOW SETPOINT (10-40 m3/hr)
- DWAS CONCENTRATION (6-20%DS) operator enters the concentration this is used for dilution calculations.
- There is a TARGET DIGESTED FEED CONCENTRATION setpoint (3-12% DS) entered into SCADA.

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The dilution water requirement is calculated every five minutes as follows during operation:

$$Rate_{SW} = C_{Target} * 10 / SL$$

Where

SL = Solids Load [kg/s]

Flow_{Sludge} = Flow at FIT62010 [L/s]

 C_{DWAS} = DWAS Concentration [%DS]

Rate_{SW} = Required Service Water Flow Rate [m³/hr]

C_{Target} = Target Digested Feed Concentration [%DS]

If the dilution water flow is zero with HV-620-40 open (i.e. ZO62040), or dilution is directly to the pulper feed pump (i.e. HV-62040 is closed as seen by ZC62040) then there should be a check conducted between the value from FIT62025 and FIT62605. If these conditions are present then the system should check for variation between the two flows, if the variation is above a setpoint for an adjustable period then a flow variation alarm should be raised.

1.1.3.5. Pulper Feeding Mode 3: Bypass to Outloading

In this mode the Pulper Feed Pumps operate DUTY/standby, feeding into the DDS Storage Bin, BN-650-01. The rate of feed is specified by the operator. No water dilution takes place in this mode.

There will be an automatic and manual operation mode for feeding DWAS into the DDS Storage Bin:

- Automatic: DWAS will be automatically started on WIT-650-01 low; and stopped on WIT-650-01 high.
- Manual: Operator manually starts/stops DWAS feed via SCADA.

When DWAS feed is initiated:

- The Pulper Feed System runs at the Outload Flow set point
- Air lining control valve FCV-620-28 Opens (Optional)

The air lining control valve, FCV-620-28, will open in the above sequence if the operator selects the "Air Line During Truck Load Out" option.

For bypass to truck out loading, the following conditions must be met or a DWAS Diversion valve irregularity alarm is raised:

- HV-620-30 Closed
- HV-620-31 Closed

W:\PROJ\QLD\NR-Proj\Oxley WWTP\NEW FILING SYSTEM\COMMISSIONING\Functional Specification\Updated Pulper Feed Pump Station Functional Description.doc		Pa	ge 12 of 19)	Author: John Edwards	
Rev	Description		Ву	Α	pproved	Date
С	Updated		DJS			28/09/05
D Updated – Post Software FAT			JE			30/01/06
E	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
F	Updated – Changes to Struvite		DP			01/06/07
G	Updated – changes to service water system		GF			02/02/12

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- HV-620-32 Open
- FCV-620-40 Closed

The following signals will be received from the Dewatering New PLC-022

Tag	Type	Purpose
dcStartPulperFeed	Bool	Pulper feed system start

1.1.4. Setpoints

1.1.4.1.1. DWAS Storage

Setpoint Description	Default Value	Security Level
Hopper full (high level)	80 %	Operator
Hopper low (low level)	15%	Operator
Hopper heavy (high level)	80 %	Operator
Hopper light (low level)	15%	Operator
Feed Conveyor 1 'Normal Transfer Speed'		
Feed Conveyor 1 'Single Transfer Speed'		
Feed Conveyor 2 'Normal Transfer Speed'		
Feed Conveyor 2 'Single Transfer Speed'		

1.1.4.1.2. Pulper Feeding

	1.1.4.1.2.	Pulper reealing		
	Setpoint Descr	iption	Default Value	Security Level
Pulper Scr	ew Feeder Chute	1 Pressure	-	Operator
Pulper Scr	ew Feeder Chute	2 Pressure		
Pulper Scr	ew Feeder Chute	Deviation		
Pulper Scr	ew Feeder Chute	Deviation Time		
PIT-620-01	1 High			
PIT-620-01	1 Low			
PIT-620-02	2 High			
PIT-620-02	2 Low			
Sludge Fee	ed Conveyor 1 Pre	essure PID		
Sludge Fee	ed Conveyor 2 Pre	essure PID		
Pulper Fee	ed Duty			
Boosted Se	ervice Water Duty			
FIT62035 I	High			

W:\PROJ\QLD\NR-Proj\Oxley WWTP\NEW FILING SYSTEM\COMMISSIONING\Functional Specification\Updated Pulper Feed Pump Station Functional Description.doc			ge 13 of 19)	Author: Joh	uthor: John Edwards	
Rev	Description		Ву	Α	pproved	Date	
С	Updated		DJS			28/09/05	
D	Updated – Post Software FAT		JE			30/01/06	
Е	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07	
F	Updated – Changes to Struvite		DP			01/06/07	
G	Updated – changes to service water system		GF			02/02/12	

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FIT62035 Low

Water Dilution Deviation

Water Dilution Deviation Time

Water Dilution Flow PID

Water Dilution Pressure PID

FIT-620-25 High

FIT-620-25 Low

Flow Deviation

Flow Deviation Time

Diversion Valves Irregular Time

Pulper Feed Flow PID

PIT-620-25 High

PIT-620-25 Low

1.1.4.1.3. Pulper Diversion Mode 1

	<u>'</u>		
	Setpoint Description	Default Value	Security Level
Flow M	lode (Man/Auto)		Operator
Dilution	n Mode (Man/Auto)		
Water I	Dilution Ratio		
Water I	Dilution Flow SP		

1.1.4.1.4. Pulper Diversion Mode 2

Setpoint Description	Default Value	Security Level
Feed Flow Rate		Operator
DWAS Concentration		
Target Concentration		
Flow Comparison		
Flow Comparison Time		

1.1.4.1.5. Pulper Diversion Mode 3

	OJ\QLD\NR-Proj\Oxley WWTP\NEW FILING SYSTEM\COMMISSIONING\Functional cation\Updated Pulper Feed Pump Station Functional Description.doc	Pag	ge 14 of 19)	Author: Jol	nn Edwards
Rev	Description		Ву	Α	pproved	Date
С	Updated		DJS			28/09/05
D	Updated – Post Software FAT		JE			30/01/06
Е	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
F	Updated – Changes to Struvite		DP			01/06/07
G	Updated – changes to service water system		GF			02/02/12

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Setpoint Description	Default Value	Security Level
Outload Flow Rate	-	Operator
Feed Time Out		
Air Lining		

1.1.5. Process Alarms and Interlocks

1.1.5.1. DWAS Storage Conveyor Drive Faults

Tag	Equipment	Action
CV-610-11	BFP Collector Conveyor 1	Interlock with GDD/BFP 3
CV-610-01	BFP Collector Conveyor 2	Interlock with GDD/BFP 1, GDD/BFP 2, CV-610-11
CV-610-02	BFP DWAS Transfer Conveyor	Interlock with CV-610-01
CV-610- 03/04	DWAS Bin Feed Conveyor 1 & 2	If both conveyors have faulted, interlock with CV-610-02. If one conveyor fails, the other runs at 'Single Transfer Speed'

These conveyor alarms will be raised if the conveyor loses power, fails to start/stop or faults. These are level 7 Priority Alarms.

1.1.5.2. DWAS Storage Conveyor Faults

Tag	Equipment	Action
ZS-610-11	BFP Collector Conveyor 1 Under Speed Switch	Interlock with CV-610-11
ESP-610-11	BFP Collector Conveyor 1 Electronic Shear Pin	Interlock with CV-610-11
ZS-610-01	BFP Collector Conveyor 2 Under Speed Switch	Interlock with CV-620-01
ESP-610-01	BFP Collector Conveyor 2 Electronic Shear Pin	Interlock with CV-610-01
ZS-610-02	BFP DWAS Transfer Under Speed Switch	Interlock with CV-620-02
ESP-610-02	BFP DWAS Transfer Electronic Shear Pin	Interlock with CV-610-02
ZS-610-05	DWAS Bin Feed Conveyor 1 Under Speed Switch	Interlock with CV-610-03
ZS-610-07	DWAS Bin Feed Conveyor 1 Blocked Chute Switch	Interlock with CV-610-03
ZS-610-06	DWAS Bin Feed Conveyor 2 Under Speed Switch	Interlock with CV-610-04
ZS-610-08	DWAS Bin Feed Conveyor 2 Blocked Chute Switch	Interlock with CV-610-04

When the under speed and electronic shear pin switch has been active for 2 seconds, the alarm is raised and the conveyor stops. This is a level 7 Priority Alarms.

W:\PROJ\QLD\NR-Proj\Oxley WWTP\NEW FILING SYSTEM\COMMISSIONING\Functional Specification\Updated Pulper Feed Pump Station Functional Description.doc			ge 15 of 19)	Author: John Edwards	
Rev	Description		Ву	Α	pproved	Date
С	Updated		DJS			28/09/05
D	Updated – Post Software FAT		JE			30/01/06
Е	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
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G	Updated – changes to service water system		GF			02/02/12

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Functional Specification	Customer: Queensland Urban Utilities

1.1.5.3. BFP DWAS Transfer to Bin Conveyor Hand Valve

Tag	Equipment	Action
ZSC-610-04	BFP DWAS Transfer to Bin Feed Conveyor 1	Interlock with CV-610-03

1.1.5.4. DWAS Storage Alarms

Tag	Equipment	Action
LIT-620-01	DWAS Storage Level	See Below
WIT-620-01	DWAS Storage Weight	See Below

On unavailable or faulted alarms, dewatering and pulp feeding will be interlocked. On weight high and level high high alarms, CV-610-03/04 will be interlocked. On weight and level low low alarms, CV-620-10/20 will be interlocked. These are Alarm Priority 7.

1.1.5.5. Sludge Feed Conveyors Fault

Tag	Equipment	Action
CV-620-10	Sludge Feed Conveyor Fault	Raise Alarm
CV-620-20	Sludge Feed Conveyor Fault	Raise Alarm

These alarms shall be generated if the pump has lost power or failed to start/stop. No further action is required as the related pressure interlock in the pulper feed pressure chute will become active. This alarm type is Priority 6.

1.1.5.6. Pulper Screw Feed Chute Pressures

Tag	Equipment	Action
PIT-620-01	Pulper Screw Feed Chute 1 Pressure	See Below
PIT-620-02	Pulper Screw Feed Chute 2 Pressure	See Below

On High High and deviation alarms, the corresponding CV-620-10/20 will be interlocked. On Low Low Alarms, the corresponding CV-620-11/21 will be interlocked. On unavailable or fault alarms, corresponding CV-620-10/20 and CV-620-11/21 will be interlocked. This is a Priority 6 Alarm.

1.1.5.7. Pulper Screw Feed Conveyors Fault

Tag	Equipment	Action
CV-620-11	Pulper Pump 1 Anti Bridge Screw Feeder 1	Raise Alarm
CV-620-12	Pulper Pump 1 Anti Bridge Screw Feeder 2	Raise Alarm
CV-620-21	Pulper Pump 2 Anti Bridge Screw Feeder 1	Raise Alarm

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Rev	Description By Approved D		Date		
С	Updated		DJS		28/09/05
D	Updated – Post Software FAT		JE		30/01/06
Е	Updated – Added Sludge and Updated Inlet Works		DP		05/04/07
F	Updated – Changes to Struvite		DP		01/06/07
G	Updated – changes to service water system		GF		02/02/12

Oxley WRP	
Functional Specification	Customer: Queensland Urban Utilities

CV-620-22	Pulper Pump 2 Anti Bridge Screw Feeder 2	Raise Alarm	
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These alarms shall be generated when the Anti Bridge Feeders loose power or fail to start / stop. This is a Priority 6 Alarm.

1.1.5.8. Pulper Feeder Pumps

Tag	Equipment	Action
PU-620-10	Pulper Feed Pump 1	Interlock with CV-620-11/12
PU-620-20	Pulper Feed Pump 2	Interlock with CV-620-21/22

The pump fault alarms shall be generated when the pumps lose power or fail to start or stop. These alarms types are Priority 6.

1.1.5.9. Pulper Feeder Pumps Pressure Alarms

Tag	Equipment	Action
PAH-620-10	Pulper Feed Pump 1 High Pressure Switch	Interlock with PU-620-10
PAH-620-20	Pulper Feed Pump 2 High Pressure Switch	Interlock with PU-620-20

The high pressure alarm shall be generated if the pump has been running for 30 seconds and the high pressure switch detected a high pressure. These alarms types are Priority 6.

1.1.5.10. Pulper Feed Valves

Tag	Equipment	Action
FCV-620-10	Pulp Feeder Valve 1	Raise Alarm. Interlock with PU-620-10.
FCV-620-20	Pulp Feeder Valve 2	Raise Alarm. Interlock with PU-620-20.

These alarms will be generated if the valves fail to open / close. This is a Priority 6 Alarm.

1.1.5.11. Pulp Feeder Flow Indicator

Tag	Equipment	Action
FIT-620-25	Pulp Feeder Flow Indicator	Interlock with PU-620-10/20

This alarm will be generated when the flow becomes High, Low, invalid or in deviation. The deviation alarm will prompt the interlock action. Pulp feeding will stop. This is a Priority 6 Alarm.

1.1.5.12. Service Water Flow Control Valves

Tag	Equipment	Action
FCV-620-35	Service Water Flow Control Valve	Raise Alarm
FCV-620-41	Pulp Feeder 1 Service Water Valve	Raise Alarm

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С	Updated		DJS			28/09/05
D	Updated – Post Software FAT		JE			30/01/06
E	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
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G	Updated – changes to service water system		GF			02/02/12

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Functional Specification	Customer: Queensland Urban Utilities

FCV-620-42	Pulp Feeder 2 Service Water Valve	Raise Alarm	
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This alarm will be generated when the valve fails to open / close. No further action is required as the flow indicator will interlock when required. This is a Priority 6 Alarm.

1.1.5.13. Instrument Air Flow Control Valve

Tag	Equipment	Action
FCV-620-28	Instrument Air Flow Control Valve	Raise Alarm

This alarm will be generated when the valve fails to open / close. No further action is required. This is a Priority 6 Alarm.

Another alarm will be raised if the control valve is found open in Pulp Diversion Modes 1 (Pulper) or 2 (Digesters). Pulp feeding will stop. This is a priority 6 Alarm.

1.1.5.14. Pulper Feed Valve Irregularity

Tag	Equipment	Action
	Pulper Feed Valve Irregularity	Interlock with FCV-620-10/20

The alarm will be raised if the hand valves (HV-620-30/31/32/17) are not in Mode 3. All pulp feeding will stop when FCV-620-10/20 are closed. This is a Priority 6 Alarm.

1.1.5.15. Dewatered WAS Sump Level Switch

Tag	Equipment	Action
LAH-620-51	Dewatered WAS Sump Level Switch	Raise Alarm

The alarm will be raised after the level switch has been active for 2 seconds. No further action is required. This is a Priority 6 Alarm.

1.1.5.16. THU Water Booster Pumps

Tag	Equipment	Action
PU-660-10	THU Water Booster Pump 1	Raise Alarm, change duty
PU-660-20	THU Water Booster Pump 2	Raise Alarm, change duty

The pump fault alarms shall be generated when the pumps lose power, fail to start or stop or have low flow. The standby pump will start. These alarms types are Priority 6.

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Rev	Description		Ву	Α	pproved	Date
С	Updated		DJS			28/09/05
D	Updated – Post Software FAT		JE			30/01/06
E	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
F	Updated – Changes to Struvite		DP			01/06/07
G	Updated – changes to service water system		GF		•	02/02/12

Oxley WRP	
Functional Specification	Customer: Queensland Urban Utilities

1.1.6. Trend Pages

The following trends shall be displayed on the DWAS Storage Hopper trend page:

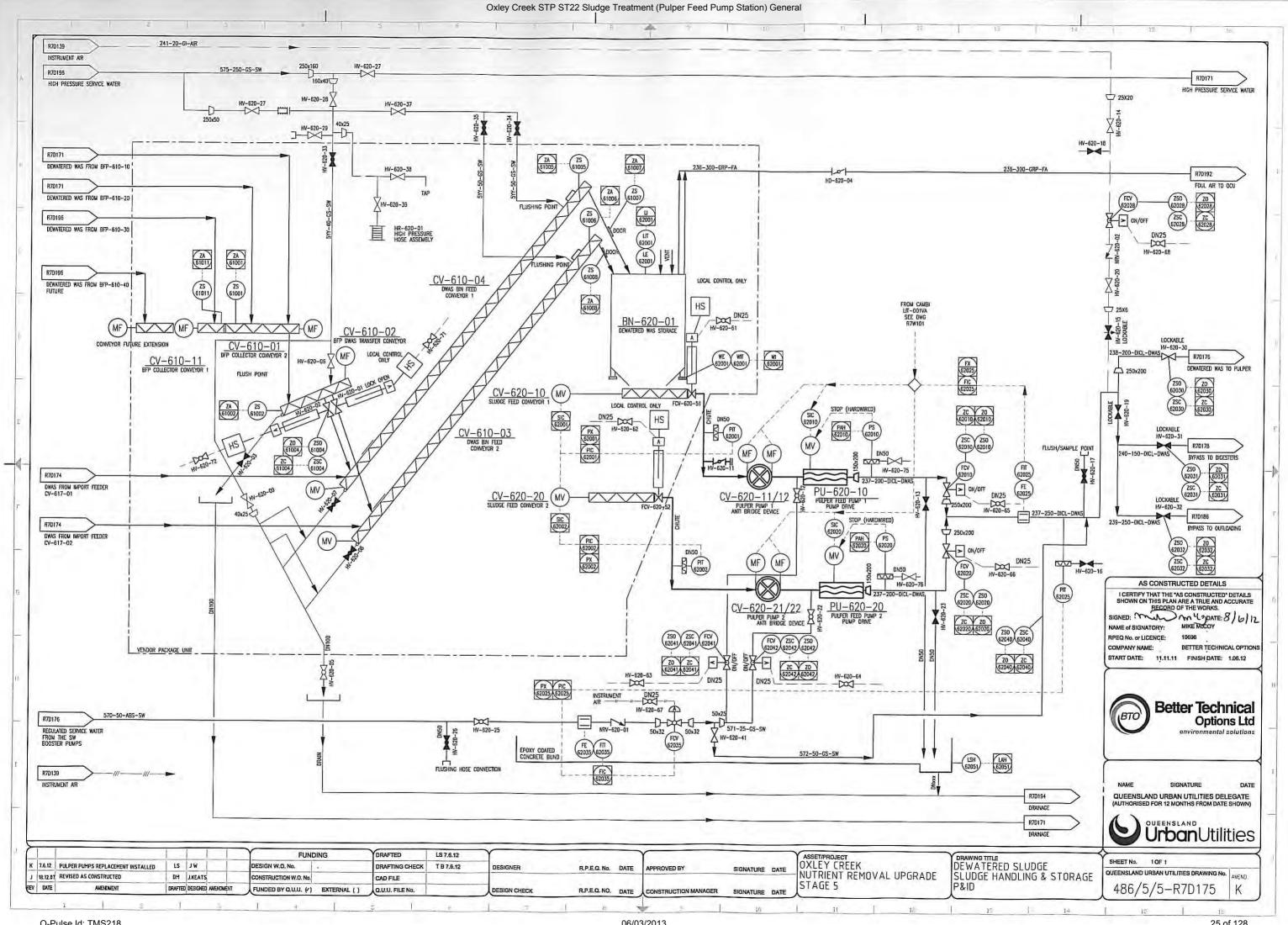
- a. Hopper Level
- b. Hopper Weight
- c. Dewatered WAS Bin feed conveyors CV-610-03/04 Speed [Hz]
- d. Sludge feed conveyors start/stops

The following trends shall be displayed on the DWAS Pulp Feeder trend page:

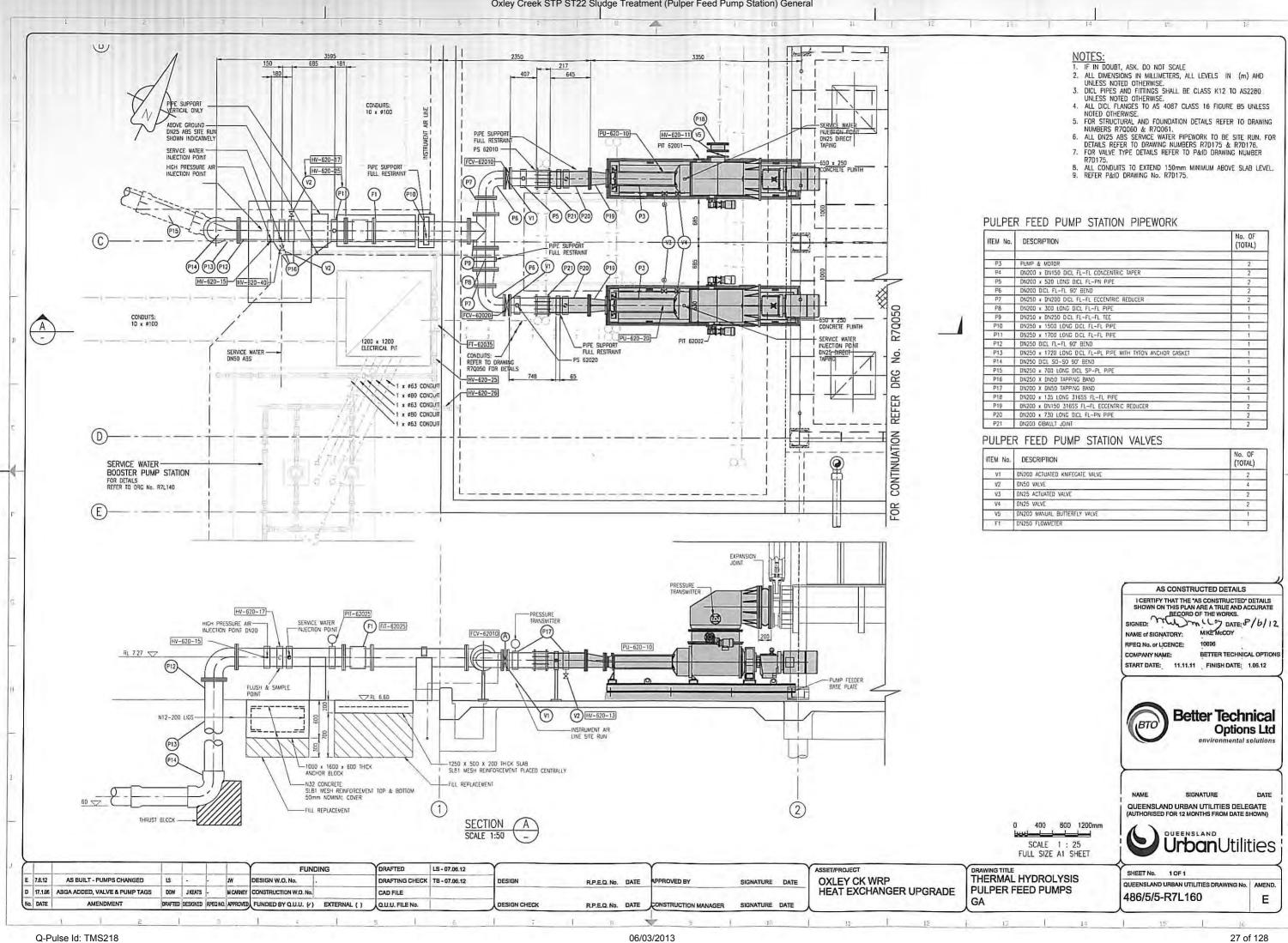
- a. DWAS Flow (FIT-620-25) [L/s]
- b. Pulper Feeder Dilution Water Flow (FIT-620-35) [L/s]
- c. Pulper Feed Pump Speeds [L/s]
- d. Dewatered WAS Discharge Pressure (PIT-620-25) [kPa]

	OJ\QLD\NR-Proj\Oxley WWTP\NEW FILING SYSTEM\COMMISSIONING\Functional cation\Updated Pulper Feed Pump Station Functional Description.doc	Pag	ge 19 of 19)	Author: Joh	nn Edwards
Rev	Description		Ву	Α	pproved	Date
С	Updated		DJS			28/09/05
D	Updated – Post Software FAT		JE			30/01/06
Ε	Updated – Added Sludge and Updated Inlet Works		DP			05/04/07
F	Updated – Changes to Struvite		DP			01/06/07
G	Updated – changes to service water system		GF			02/02/12

1.2. P&ID



1.3. Mechanical Drawings



2. Quality Assurance

- 2.1. Inspection & Test Plans, Handover Register
- & Compliance Register

O.P.	INSPECTION AND TEST PLAN		Document Title	DIII DED EE	DIII DED EEED DIIMDE OVEDALL ITD
ITP No:	8452-008-Pt II PER	Dratace	When Mind D	יסבו בוויו ב	ED TOMIES OVERALL III
	0102 000-1 OEL EN	rroject:	Uxley WRP Flood Recovery	Inspection Key: W -	Responsibility Key: SV- Supervisor SV-
Revision:	A	Project Number:	8542	Witness, H - Hold, S -	
Date of Issue:	25.05.12	Approved by:	Tate Brammer	Surveillance	Superintendent PM- Project Manager
			Verifying	Verify or Test by	
Item No.	Activity Details	Procedure	Penort Inclichant	JHG	QUU Remarks/Records
			sheet number. Key	Resp. Sign/Date Key	Sign/Date
1.01	Ensure Civil Installation Check Sheets are complete		Refer to handover register.	XA	
2.01	Mechanical Pump Installation 2.01 Check Sheets are complete (PU.		Refer to handover register.	3/6 840	PUMP CURVES AND STUFFING
	620-10 & PU-620-20)		Refer to handover register.	0/2 2/6	BOXES TO BE SET ON SUIDLE
2.02			Refer to handover register.	TH 5/6	
7.03	Mechanical Instrument 2.03 Installation Check sheets are complete		Refer to handover register.	JF8 5/6	
2.04	Mechanical Pipework Installation Complete incl: All pipes aligned, bolted, tightened and supports installed and grouted.		Refer to handover register.	3/5 240	HYDRASTANT TEST SHEET INCLUDED
3.01	Electrical Check Sheets Complete	Refer to reference Electrical.	Refer to handover register.	9/5 M	
4.01	4.01 Energisation of equipment	Refer to engergisation procedure.	Refer to handover register.	378	
5.01	5.01 Control System FAT complete		Insert commissioning ITP reference.	3/08 BID	
6.01	HANDOVER from Construction to 6.01 Commissioning Register Complete		Refer to handover register.	000	
29 of 12	Pre-commissioning Checks Complete		Insert commissioning ITP reference.	TH 5/6	

	INSPECTION AND TE	ST PLAN	Document Title	PULPER F	EED PUMPS OVERALL ITP	
ITP No:	8452-008-PULPER	Project:	Oxley WRP Flood Recovery	Inspection Key: W -	Responsibility Key: SV- Supervisor, SV-	John
Revision:	A	Project Number:	8542	Witness, H - Hold, S -	Surveyor, PE - Project Engineer Sup-	HOIIGNG
Date of Issue:	25.05.12	Approved by:	Tate Brammer	Surveillance	Superintendent PM- Project Manager	

			Verifying			Verify or Te	st by		
Item No.	Activity Details	Reference Procedure	Document of Report incl check		JHO			QUU	Remarks/Records
		riocedule	sheet number.	Key	Resp.	Sign/Date	Key	Sign/Date	
8.01	Control System SAT complete		Insert commissioning ITP reference.			OPS	6		

		FINAL APPROVAL FOR CLOSE OUT OF ITP	
	NAME	SIGNATURE	DATE , ,
JH	TATE BRAMMER	Mhu	7/6/12.

PULPER FEED PUMP STATION

Date: 16/05/2012

Rev:

		1	AG		MECH	HANICAL		EL	ECTRICAL		EN	ERGISATIO	N		
Item	P&ID	Prefix	Number	Description	Mech Complete Sign off	LOT. No.	Date	Elec Complete Sign off	Doc. No.	Date	Equipment Energised	Doc.	Date	Handover to Commissioning	Date
1	R7D175	PU	620-10	Pulper feed pump 1 feed drive	8542-M-PULPER-001	OFB	5/6	Done	8542-E-F	1-001	THO	NA	22/5/12	TRB	22/5/12
2	R7D175	PU	620-20	Pulper feed pump 2 feed drive	8542-M-PULPER-002	11	11	tr.	it	22/5	11	NA	11	"/	111
3	R7D175	FCV	620-10	Pulper Feed Pump 1 - ON/OFF Discharge Isolation Valve	8542-M-PULPER-101	41	11	В	H	11	11	1/	11	(/	10
4	R7D175	FCV	620-20	Pulper Feed Pump 2 - ON/OFF Discharge Isolation Valve	8542-M-PULPER-102	4	11	n	11	11	11	- 1/	11	11	(1
5	R7D175	FCV	620-28	Pulper Feed Pumps Compressed Air - ON/OFF Isolation Valve	8542-M-PULPER-103	11	11	17	11	1 I	11	11	11	1/	l,
6	R7D175	FCV	620-35	SW to feed pumps flow control valve	8542-M-PULPER-104	U	11,	ii .	ц	ıl	11 0	11	11	11	lr ,
7	R7D175	FCV	620-41	Pulper Feed Pump 1 SW - ON/OFF Isolation Valve	8542-M-PULPER-103	STE	5/6		8542-E-	24-001	OFB	11	72/5/ra	JB	22/5/12
8	R7D175	FCV	620-42	Pulper Feed Pump 2 SW - ON/OFF Isolation Valve	8542-M-PULPER-103	11	51	11	н	22/5	11	61	1/	H	2/
9	R7D176	FCV	660-01	Town water to SW supply skid flow control valve	8542-M-PULPER-103	11	11	11	11	4	11	11	11	1/	11
10	R7D175	FIT	620-25	Dewatered WAS to Pulper Flow	8542-M-PULPER-201	11	11	t f	NIA	11	11	1	11	11	11
11	R7D175	FIT	620-35	Pulper Feed Dilution Service Water Flow	8542-M-PULPER-202	11	11	1L	NA	ιſ	11	41	(1	11	11
12	R7D175	PIT	620-01	Pulper Feed Pump 1 Inlet Pressure	8542-M-PULPER-203	61	111	*	NVA	11	1.	"	И,,	11	4.
13	R7D175	PIT	620-02	Pulper Feed Pump 2 Inlet Pressure	8542-M-PULPER-204	SPB	5/6		8942€	PU-001	JISS	11	22/5/18	15	22/5/12
14	R7D175	PIT	620-25	Dewatered WAS to Pulper Discharge Pressure	8542-M-PULPER-205	11	11	"	ıt	22/5	11	11	11/	[]	1/
15	R7D176	RPZ	660-01	Town water feed to SW pumps non-return valve	8542-M-PULPER-401	11	13	NA	NA	NA.	NA	_	-/	h	4
16	R7D175	PS	620-10	Pulper Feed Pump 1 Discharge Pressure switch	8542-M-PULPER-601	11	61	A L	85424E-PU	22/5	OFO	11	22/5/12	61	11
17	R7D175	PS	620-20	Pulper Feed Pump 2 Discharge Pressure switch	8542-M-PULPER-601	11	61	(U)	-001	12	4	C/	11/	rt.	61
18	R7D175	LSH	620-51	Bund high level switch	8542-M-PULPER-601	1	41	(A)	NIA	Υ	1/	11	1)	11	67 / /
19	R7D176	FSL	660-01	SW to booster pumps flow switch	8542-M-PULPER-601	OPS	5/6	all	NIA	Ħ	11	9	1/	RB	22/5/12
20	R7D176	PI	660-01	SW booster pumps discharge pressure indicator	8542-M-PULPER-601	AJA	NA	WA	WA	NA	NA	11	(1	x114.	NA

2.1.1. Mechanical/Pre-commissioning Checksheets

Date of Issue: ...12 Page 1 of 2

Revis : A Approved By: Tate Brammer

	AIR ACTUATED VALVE > DN50 INSTALLATION CHECK SHEET	I CHECK SHEET	AREA:		PULP	ER FEE	PULPER FEED PUMP STATION		
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Recovery	y Inspection Key: W			Responsibility Key	SV. Supervisor SV.	John
Checksheet No.:	8542-M-PULPER-101	Project Number:	8542	Witness, H - Hold, S Surveillance	· 0		Surveyor, PE – Project Engineer Sup- Superintendent PM- Project Manager	ect Engineer Sup- Project Manager	Holland
	EQUIPMENT DESCRIPTION:	Pulper Feed Pump 1	Pulper Feed Pump 1 Discharge Isolation ON/OFF Valve	Valve			Tag Number:		FCV-620-10
			REFERENCE	Verify (Verify or Test by				
Item No.	Activity Details			S/C		Ŧ		Remarks/Records	lecords
			DRAWINGS Key	Resp. Sign/Date	Key	Resp.	Sign/Date		
1.0(1.00 Record Actuator nameplate data - record any variances to below	record any variances	to below						
	Supplier: Valveco						7		
1.01	1 DN: 200 knifegate SS316					₩ V	H.		
	With Air Actuator and Limit Switch Box	×			_		21/8/81		
2.00	2.00 Valve installation						4		
2.01	1 Check internal pipework and clear any debris	y debris	NA		S	SV	K		
2.02	2 Confirm gasket type (3mm insertion rubber)	rubber)	NA		S	NS N	R		
7.03/2011	Check installation direction of valves and ensure it is as per vendor manual or arrow on valve body.	and ensure it is as body.	NA		S	PE	Gravisi	1/2	
2.04	Confirm flange alignment and install valve making sure of correct bolting sequence and torques.	alve making sure of	NA		S	\s	1		
2.05	Ensure bolts are well lubricated before torquing up.	e torquing up.	NA		S	SS	1		
2.0	2.06 Tighten all bolts.		NA		S	SV	N		
	3 Actuator Installation						0		
3.01	3.01 Verify silences/speed adjustments are installed.	e installed.	NA		S	SV/PE	OF WINISHEN	CONT NO SOCE	d adjustment
3.02	Flush out compressed air line with air before connecting to Valve, to ensure line is clean.		NA		S	S	TR 21/5/12		
3.03	Connect compressed air and ensure isolated. Do not pressurise until pre-commissioning.	solated. Do not	NA		S	SV/PE	1		
3.04	3.04 Equipment lables are in place and consistent with P&ID.	nsistent with P&ID.	486/5/5-R7D175		*	PE	328		
3.05	3.05 MECH INSTALLATION COMPLETE		NA		I	SV	AS .		

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AIR ACTU	ATED VALVE >DN50 INSTALLA	TION CHECK SHEET	AREA:				PULI	PER FE	ED PUMP S	STATION		TEL BOWLE
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibi	lity Key: SV- Superv	isor SV-	John
Checksheet No.:	8542-M-PULPER-101	Project Number:	8542			s, H - Hold,			Surveyor, F	E - Project Enginee dent PM- Project Ma	er Sup-	John Holland
EQUIPMENT D	ESCRIPTION:	Pulper Feed Pump 1	Discharge Isolation	ON/OFF V	/alve				Tag Numbe	er:		FCV-620-10
			REFERENCE			Verify o	r Test	by	7			
Item No.	Activity De	etails	DOCUMENT/		S/C			JI	1		Remarks/R	lecords
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date	-		
4.00	Pre-commissioning											
4.01	Energise compressed air and ac pressure (Verify Max Compres 150PSI)	ljust regulator to correct sed air Allowed of	NA				н	PE	THE	21/5/12.		
4.02	Energise valve electrically follow procedure.	ring energisation	NA				w	PE	THE		 -	
4.03	Stroke the valve with air manual operating normally. Adjust stroke	ly and ensure actuator is and speed if required.	NA				w	PE (THE 21/	5/12 -		
4.04	Check for damage and leave are discipline.	ea tidy and clean for next	NA				w	PE	THE	-		
				APPR	OVAL							
		NAME		SIGNA		,					DATE	
JH	TATE BRY	mmel.		0	The						5/2	6/12.

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AIR ACTU	ATED VALVE >DN50 INSTALL	ATION CHECK SHEET	AREA:				PULF	PER FE	ED PUMP	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	-		Responsibi	lity Key: SV- Supervisor, SV-	John Holland
Checksheet No.:	8542-M-PULPER-102	Project Number:	8542		Witnes Surveil	ss, H - Hold, S llance	3 -		Surveyor, F	PE - Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	Pulper Feed Pump 2	Discharge Isolation (ON/OFF V	/alve				Tag Numb	er:	FCV-620-20
			REFERENCE			Verify or	Test	by	rag Italiib		FCV-620-20
Item No.	Activity	Details	DOCUMENT/		S/C			JH		Remarks/F	Paparda
			DRAWINGS	Key	Resp.	Sign/Date	Kev	7	Sign/Date	(Veillaiks/I	Records
1.00	Record Actuator nameplate	data - record any variance	s to below			J. G. J. J. L. C.	itoy	тоор.	CiginDate		
	Supplier: Valveco				T -			T	T -	<u> </u>	
1.01	DN: 200 knifegate SS316						w	PE	M	11/2/4	
	With Air Actuator and Limit Sw	vitch Box	 	-			**	-	72	14/5/12.	
2.00	Valve installation					<u> </u>		Ц	<u> </u>		
2.01	Check internal pipework and c	lear any debris	NA	T	T	I	S	sv			
2.02	Confirm gasket type (3mm ins	sertion rubber)	NA	_		 	s s	sv	0		
2.03	Check installation direction of per vendor manual or arrow or	valves and ensure it is as	NA				s	PE	FB	21/5/12	
2.04	Confirm flange alignment and i correct bolting sequence and to	install valve making sure of orques.	NA				s	sv	A		
2.05	Ensure bolts are well lubricated	d before torquing up.	NA				s	sv	4		
	Tighten all bolts.		NA				s	sv	UA		
3	Actuator Installation								1/-		
3.01	Verify silences/speed adjustme	ents are installed.	NA				s	SV/PE	JFB 131	3/12 Sitencers no	speed adjus
3.02	Flush out compressed air line v Valve, to ensure line is clean.	with air before connecting to	NA				s	sv	1.		7
3.03	Connect compressed air and e pressurise until pre-commissio		NA				s	SV/PE	1		
3.04	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE	AB		
3.05	MECH INSTALLATION COMP	PLETE	NA				H	sv	1		

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AIR ACTUATED VALVE > DN50 INSTALLATION CHECK SHEET AREA: PULPER FEED PUMP STATION ITP ref. No: 8542-008-PULPER Oxley WRP Flood Recovery Project: Inspection Key: W -Responsibility Key: SV- Supervisor, SV-Witness, H - Hold, S -Checksheet Surveyor, PE - Project Engineer Sup-8542-M-PULPER-101 **Project Number:** 8542 Surveillance No.: Superintendent PM- Project Manager **EQUIPMENT DESCRIPTION:** Pulper Feed Pump 1 Discharge Isolation ON/OFF Valve Tag Number: FCV-620-10 Verify or Test by REFERENCE Item No. **Activity Details** DOCUMENT/ S/C JH Remarks/Records **DRAWINGS** Kev Resp. Sign/Date Kev Resp. Sign/Date 1.00 Record Actuator nameplate data - record any variances to below Supplier: Valveco 1.01 DN: 200 knifegate SS316 lρE With Air Actuator and Limit Switch Box 2.00 Valve installation 2.01 Check internal pipework and clear any debris lnα sv 2.02 Confirm gasket type (3mm insertion rubber) lnα sv Check installation direction of valves and ensure it is as IΝΑ S PE 21/5/12 per vendor manual or arrow on valve body. Confirm flange alignment and install valve making sure of NA sv S correct bolting sequence and torques. 2.05 Ensure bolts are well lubricated before torquing up. lnα ls sv 2.06 Tighten all bolts. NA S sv 3 Actuator Installation Izlah Silencers, no speed 3.01 Verify silences/speed adjustments are installed. NΑ s SV/PE Flush out compressed air line with air before connecting to NA s sv Valve, to ensure line is clean. Connect compressed air and ensure isolated. Do not NA SV/PE pressurise until pre-commissioning. 3.04 Equipment lables are in place and consistent with P&ID. 486/5/5-R7D175 W lΡΕ 3.05 MECH INSTALLATION COMPLETE NA

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AIR ACTU	ATED VALVE >DN50 INSTALL	ATION CHECK SHEET	AREA:		4		PULF	PER FE	ED PUMP	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood I	Recovery	Inspec	tion Key: W -			Responsibi	lity Key: SV- Supervisor, SV-	John Holland
Checksheet lo.:	8542-M-PULPER-102	Project Number:	8542			s, H - Hold, S			Surveyor, F	PE - Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	Pulper Feed Pump 2	2 Discharge Isolation	ON/OFF \	/alve				Tag Numb	er#	FCV-620-20
			REFERENCE			Verify or	Test I	by		T-0100	104-020-20
Item No.	Activity	Details	DOCUMENT/	_	S/C			JH		Remarks/F	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date	T TO THE ITEM	.000145
1.00	Record Actuator nameplate	data - record any variance	es to below								
	Supplier: Valveco										
1.01	DN: 200 knifegate SS316						w	PE	M	14/2/19	
	With Air Actuator and Limit Sw	vitch Box			1		• •	ļ. <u>-</u>	V12)	14/5/16.	
2.00	Valve installation										
2.01	Check internal pipework and c	lear any debris	NA	T	T	I	s	sv		T	
2.02	Confirm gasket type (3mm ins	sertion rubber)	NA				s	sv	0		
2.03	Check installation direction of per vendor manual or arrow or	valves and ensure it is as navalve body.	NA				s	PE	FB	21/5/12	
2.04	Confirm flange alignment and correct bolting sequence and t	install valve making sure of orques.	NA				s	sv	1		
2.05	Ensure bolts are well lubricate	d before torquing up.	NA				s	sv	4		
	Tighten all bolts.		NA				S	sv	UA		
3	Actuator Installation								U		
3.01	Verify silences/speed adjustme	ents are installed.	NA				s	SV/PE	SFR 131	3/12 Sitencers, no	speed adia
3.02	valve, to ensure line is clean.		NA NA				s	sv	1.	yne	7
3.03	Connect compressed air and e pressurise until pre-commission	ensure isolated. Do not oning.	NA				 S	SV/PE	1		
3.04	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175				N	PE	JHS		
3.05	MECH INSTALLATION COMP	PLETE	NA			,		sv	1		

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AIR ACTU	ATED VALVE >DN50 INSTALL	ATION CHECK SHEET	AREA:				PUL	PER FE	ED PUMP S	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibil	lity Key: SV- Supervisor,	sv- Holland
hecksheet lo.:	8542-M-PULPER-102	Project Number:	8542			s, H - Hold,			Surveyor, F	PE - Project Engineer Su dent PM- Project Manage	p- er Holland
QUIPMENT D	DESCRIPTION:	Pulper Feed Pump 2	Discharge Isolation (ON/OFF \	/alve			1	Tag Numbe	er	FCV-620-20
Item No.	Activity	Details	REFERENCE DOCUMENT/		S/C	Verify o	r Test	by Jh		Rem	narks/Records
			DRAWINGS	Key		Sign/Date	Key		Sign/Date	1	idiks/Necotus
4.00	Pre-commissioning										
4.01	Energise compressed air and a pressure (Verify Max Compre 150PSI)		NA				н	PE	THE	21/5/12	
4.02	Energise valve electrically folic procedure.	wing energisation	NA				w	PE	STO		-
4.03	Stroke the valve with air manu operating normally. Adjust stro	ally and ensure actuator is ke and speed if required.	NA				w	PE	SFB	21/5/12.	
4.04	Check for damage and leave a discipline.	rea tidy and clean for next	NA				w	PE	SPB		
				ΔΡΡΙ	ROVAL						
		NAME			TURE					DA	TE
iн	THIE BRAN	NMER			TH	lu					5/6/12

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Date c _____sue: 13.02.12

Air Actuated \	Valves ON/OFF <50mm INST SHEET	TALLATION CHECK	AREA:				PULPER FEED P	UMP STATIC	DN	lohn
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery				Responsibilit	ty Key: SV- Supervisor, SV-	John Holland
Checksheet No.:	8542-M-PULPER-103	Project Number:	8542		Hold, S - Su	ey: W - Witnes rveillance	s, H -	Surveyor, PE	E – Project Engineer Sup- ent PM- Project Manager	Holland
QUIPMENT	ESCRIPTION:	PULPER FEED PU	JMP MISC AIR ACTU	ATED VALVE	S				1	
Tag Number	Description	Manufacturer/ Supplier	Details	Teflon tape used	Installed as per O&M	Air connected and flushed	Tags in place as per P&ID	Test Operation with air	Remarks	Records
FCV-620-28	Pulper Feed Pumps Compressed Air - ON/OFF Isolation Valve	Valveco	DN20 air actuated ball valve	176	118	#821/5/	SHS	AS2	1/5/17	
FCV-620-41	Pulper Feed Pump 1 SW - ON/OFF Isolation Valve	Valveco	DN25 air actuated ball valve	TIB .	THS .	FB 21/51	42 THS	THE 21/3	7/12	
FCV-620-42	Pulper Feed Pump 2 SW - ON/OFF Isolation Valve	Valveco	DN25 air actuated ball valve	#25	SFB (#21/5/12	OFS.	#82/5	(12	
FCV-660-01	Town water to SW supply skid flow control valve	Valveco	DN50 air actuated ball valve	118	18	JPB 2/5/1	2773	178 zu/5	inner installed of	pposite,
						,				
		NAME			APPROV	AL				
		NAME		SIGNATURE		/			DATE	1.1
11	TATE BRI	4MMER			THE	·				5/6/12

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AIR	ACTUATED FLOW CONTROL	VALVE (<50mm)	AREA:				PULI	PER FE	ED PUMP S	STATION	ne -
P ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W		i		lity Key: SV- Supervisor, SV-	John Holland
hecksheet o.:	8542-M-PULPER-104	Project Number:	8542		Witnes Surveil	s, H - Hold, llance	S-			PE - Project Engineer Sup- dent PM- Project Manager	Holiana
QUIPMENT D	ESCRIPTION:	SW to feed pumps f	low control valve						Tag Numbe	er:	FCV-620-35
			REFERENCE			Verify o	r Test	by			1 01 020-00
Item No.	Activity [Details	DOCUMENT/		S/C			JH		Remarks/I	Records
	L		DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
1.00	Record Actuator nameplate of	lata - record any variance	s to below								
	Manufacturer: Tyco Flow Contr	ol - Keystone						T		REFER TO ATTH	CHED PHOTE
1.01	Valve Model: F79U 006 Single	Acting 550kPa Fail Close	NA				l _w	PE (THE	THE TO HE !!!	circa rigore
	DN: 50mm	-	7'''				1"		13/5/12		-
	Positioner: Siemens Sipart PS2	2	1				1		12/10/16		
2.00	Valve installation				1						
2.01	Check internal pipework and cl	ear any debris	NA	T	Г		s	sv	1	<u> </u>	
2.02	Confirm thread tape, teflon blue	e or yellow type.	NA	1			s	sv	1		
2.03	Check installation direction of volume per vendor manual or arrow on		Tyco Keyston Manual				s	sv	1		
3	Actuator Installation							1			
3.01	Verify silences/speed adjustme	nts are installed.	NA				s	SV/PE	NA	Unit is fitted	with siewer
3.02	Flush out compressed air line v Valve, to ensure line is clean.	vith air before connecting to	NA NA				s	sv	TFB	positioner	
3.03	Connect compressed air and en pressurise until pre-commission		NA				s	SV/PE	THE	Air presume se	f to 2 500
3.04	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE	M	/ = -	
3.05	MECH INSTALLATION COMP	LETE	NA				н	sv	4.		
4.00	Pre-commissioning						E 201				
4.01	pressure (Verify max pressure	on actuator)	NA				н	PE	SFA 1	5/5/12	
4.02	Energise valve electrically follow procedure.	wing energisation	NA				w	PE 7	ME	5/5/12	

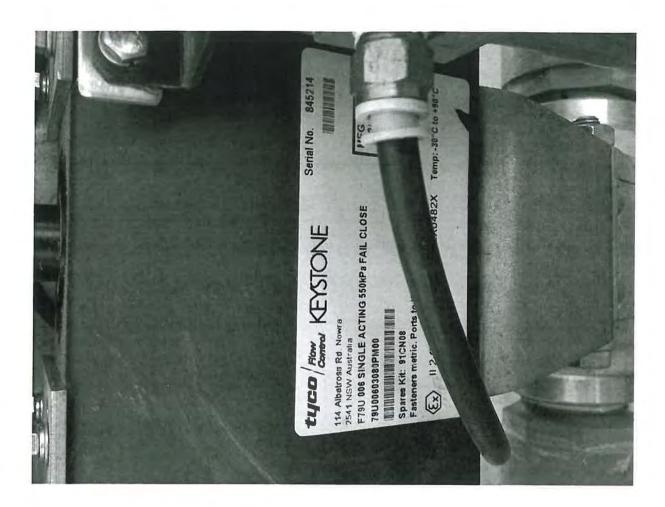
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AIR	ACTUATED FLOW CONTROL	VALVE (<50mm)	AREA:				PULF	PER FE	ED PUMP S	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	covery	Inspec	tion Key: W	_		Responsibil	ity Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-104	Project Number:	8542			s, H - Hold,			Surveyor, F	PE – Project Engineer Sup- dent PM- Project Manager	Holland
EQUIPMENT D	ESCRIPTION:	SW to feed pumps f	low control valve						Tag Numbe	er:	FCV-620-35
			REFERENCE			Verify o	r Test I	by		100	
Item No.	Item No. Activity Details		DOCUMENT/	S/C						Remarks/I	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
4.03	Run auto setup for sipart posit and attach to this checksheet.	tioners and record settings	Siemens Sipart PS2 PA Manual				w	PE	THS	25/5/12.	
4.04	Stroke the valve manually and normally. Adjust stroke and sp	ensure gearbox operating peed if required.	NA				w	PE	THEZ	5/5/12.	
4.05	Check for damage and leave a discipline.	area tidy and clean for next	NA			-	w	PE	JAS		-

			APPROVAL	
		NAME	SIGNATURE	DATE
ł	TATE	BRAMMER	Thomas	5/6/12

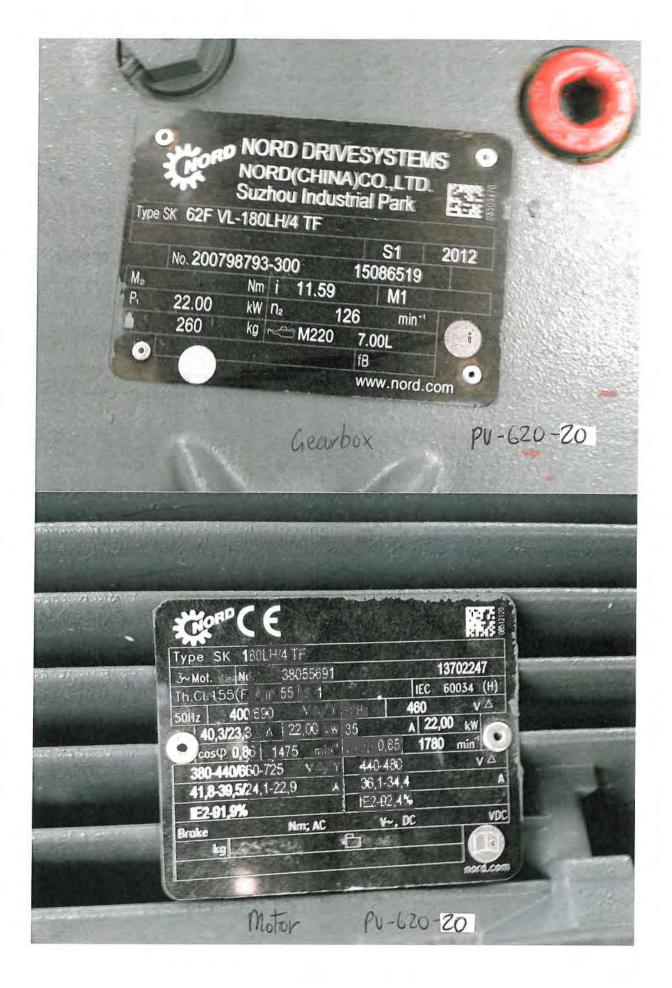


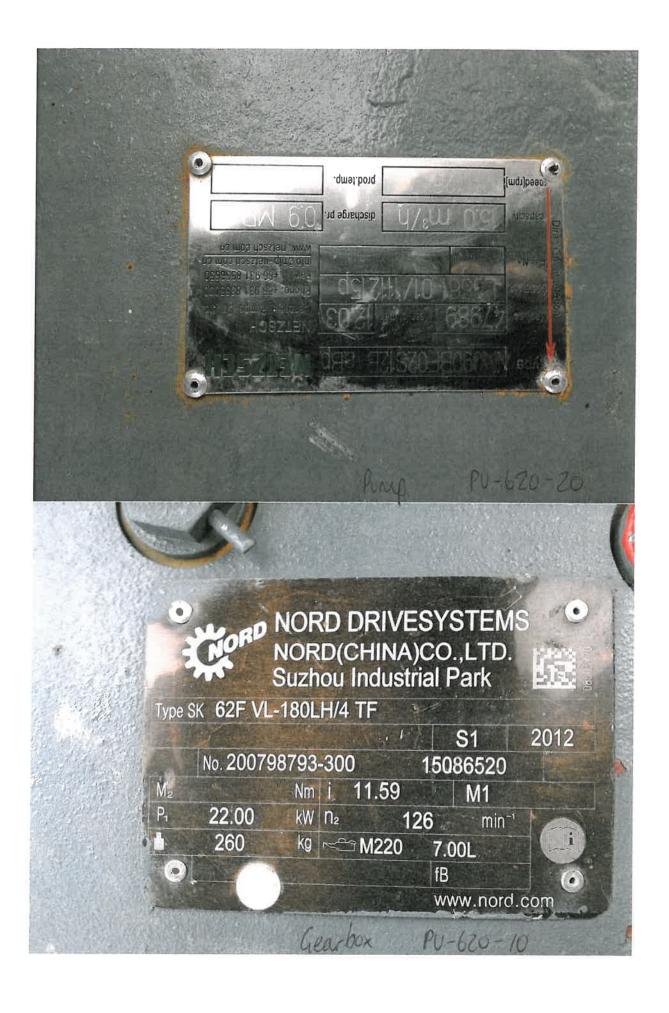
Approved By: Tate Brammer

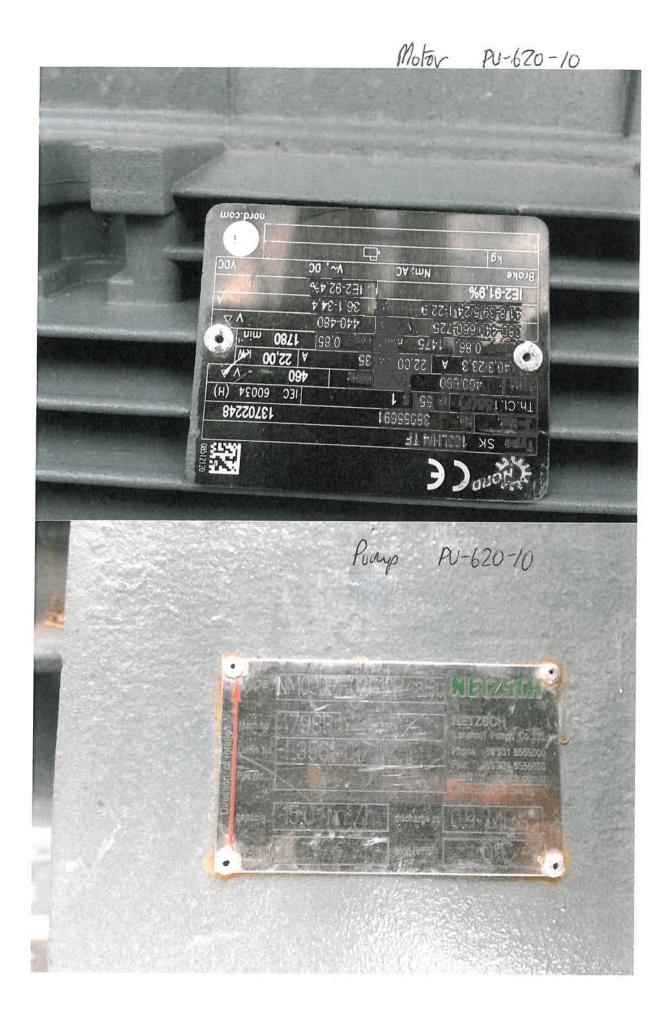
Date o. ...ue: 13.02.12

-PRESSU	FRE RELIEF VALVE INSTALLA	TION CHECK SHEET	AREA:				PUL	PER FE	ED PUMP	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibi	lity Key: SV- Supervisor, S	John
hecksheet lo.:	8542-M-PULPER-401	Project Number:	8542			s, H - Hold, S		4.	Surveyor, F	PE - Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	Town Water Feed to	SW Pumps non-retu	rn valve					Tag Numb	er:	RPZ-660-0
			REFERENCE			Verify or	Test	by			
Item No.	Activity [Details	DOCUMENT/		S/C			JH		Remark	s/Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
1.00	Verify Name Plate Data										
1.01	Manufacturer: Tyco Flow Contr	ol	NA				w	PE	TIL	21/5/12.	
	Model: RP03 DN50mm SS316		NA				VV	ILE	VIO	//	
	Bareting Disk Breparation	RPZ VALVE									
	1 Check internal pipework and cl	ear any debris	NA				S	sv	1		
2.02	Confirm thread tape - teflon		NA	4 1 - 1			S	sv	111		
2.03	Confirm flange alignment and in correct bolting sequence and to	nstall valve making sure of orques.	NA				s	sv	1		
2.04	Check installation direction of voter per vendor manual or arrow on	ralves and ensure it is as valve body.	NA				s	sv	y		
2.05	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D176				w	PE	115	71/5hZ	
2.06	Check for damage and leave and discipline.	rea tidy and clean for next	NA				w	PE	OFF	21/5/12	<u> </u>
2.07	MECH INSTALLATION COMP	LETE	NA				Н	sv	1		j.
10 KW 4 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C				APPI	ROVAL						
		NAME		SIGNA	TURE	A				DATE	1 i
Н	THIE BR	AMMER			OF	Elm					1/3/12

DATA PLATES.







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	PUMP INSTALLATION CHEC	K SHEET	AREA;				PULI	PER FE	ED PUMP S	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W	-			lity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-002	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	S-		Surveyor, F	PE - Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	ESCRIPTION:	PULPER FEED PUI	MP 2					<u> </u>	Tag Numbe	ar:	DIL 620 20
			REFERENCE			Verify o	r Test	by	Tag Italiio		PU-620-20
Item No.	Activity D	Details	DOCUMENT/		S/C			JH		Remarks/F	Records
450			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
	Pump Storage										*
2.01	Pump delivered as specified		NA				Н	PE	V10 2	1/2/12-	
2.02	Clean and free of debris		NA				s	sv	1		
2.03	Visual inspect pump and ensure no oil leaks. Record notes.	e there is no damage and	NA				w	sv	01.		
3.00	Record nameplate data:								1//		
	Pump - Record any variances to	o below			-				<u></u>		
	Manufacturer: NETZSCH		T							00 00 00 00 00 00 00 00 00 00 00 00 00	
0.04	Pump type: NM090		T _{NA}		-		1			MACH NO. 97989 COM NO. L3561-01/1	
3.01	Model No.: NM090BF02S12B/a	Bn	- ''		+		w			COM NO. 23561-01/1	112150.
	Duty Flow: 15m3/h		-		+		ļw	PE	THO ,		
	Duty Pressure Point: 0.9mPa		-		+		-		21/9	//2	
_	Motor						<u></u>				
	Manufacturer: NORD		1	_				_		A 655 M . W. C	
	Type: 180LH/4 TF		┥	-	-			1		SEE ATTACHED PHO	705.
3.02	Phase: 3		┨		-				125		
0.02	Frequency: 50Hz		⊢NA				w	PE	VIE	1	
	Protection: IP55		4						1 4/9	//2	
	Power: 22 kW		-	-	_			1	/		
4.00	Pump Installation				4.		<u> </u>		<u></u>		
	Remove Existing Pumps.	· <u> </u>	INA		т -		-	Io.		0.000	1 1
		at with a data a state of	110	-	-		S	SV		200 Kemoses Be	or Investiga
4.02	Install pump and align pump inle Anchor using M16 anchors as p recommendations use jacking n pipework.	er suppliers	Netzsch - Nemo - Pump NMBF O&M				S	sv	A		/
4.03	Confirm gasket type (3mm inse	rtion rubber)	NA				s	sv	1		
4.04	Modify discharge pipework to ac pump and variance in height.	ccommodate for longer	NA					sv	M		

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	eet		AREA:				PUL	PER FE	ED PUMP S	STATION	
P ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	ecovery		tion Key: W			Responsibil	ity Key: SV- Supervisor, SV-	John Holland
hecksheet o.:	8542-M-PULPER-002	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	S -		Surveyor, P Superintend	E – Project Engineer Sup- dent PM- Project Manager	Dollana
QUIPMENT D	ESCRIPTION:	PULPER FEED PUM	P 2					1	Tag Numbe	er:	PU-620-20
			REFERENCE			Verify or	r Test	by		0.00	
Item No.	Activity	Details	DOCUMENT/		S/C			JH		Remarks/F	Records
	4		DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
4.05	Ensure bolts are torqued up in		NA				s	sv	1		
4.06	Install anti bridging chute and manual.	devices as per supplier	Netzsch - Nemo - Pump NMBF O&M				w	PE	ANZ.	19/12	
4.07	Modify existing SS316 chute to increased height of pump. Insp	o accommodate for pect welds and passivate.	NA				s	sv	4	//	
4.08	Install existing modified chute.		NA				s	sv	Al	<u> </u>	
4.09	tixtures are tightened		NA				s	sv	1		
4.1	Form plinth for pump as per te SikaGrout - Deep pour.	chnical data sheet for	TDS for SikaGrout - Deep Pour				w	PE Z			
4.11	Check oil levels in gearbox and lower edge of the oil level hole 4mm below oil level hole). Ver Manufacturer.	(NB: Minimum oil level is	Netzsch - Nemo - Pump NMBF O&M				w	PE/SV	M. OHD	24/5/12	
4.12	Check alignment of pump and	gearbox.	Netzsch - Nemo - Pump NMBF O&M				w	sv	1		
4.13	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175				w	PE	JFB		
	MECH INSTALLATION COM	PLETE	NA				Н	sv	M		
5.00	Pump Pre-com Mech								-		
5.01	Remove gearbox breathers as with project engineer.	per NORD Manual - verify	Nord Motor dive Manual B1000-GB- 2511				w	PE	TB	24/5/12	
5.02	Verify that pump is energised. for specific area.	Check energisation register	Project 8542 AMS15				н	PE	OFB	24/5/12	

Revis ...: A

Approved By: Tate Brammer

Date of Issue: 1 2.12

	PUMP INSTALLATION CHECK S	HEET	AREA:		1		PUL	PER FE	ED PUMP	STATION	
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	covery		tion Key: W			Responsibi	lity Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-002	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	S-	Š	Surveyor, F	PE – Project Engineer Sup- dent PM- Project Manager	Holland
EQUIPMENT D	ESCRIPTION:	PULPER FEED PUN	1P 2						Tag Numb	er:	PU-620-20
			REFERENCE			Verify o	r Test	by			
Item No.	Activity Detai	ls	DOCUMENT/		S/C			JH		Remarks/I	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
5.03	Ensure pump is filled with liquid and pumps (Anti-clockwise gives inlet at		NA				w	PE	JAS	24/5/12.	
5.04	Check direction of rotation of anti-bi Confirm direction with supplier man	ridging devices. uals.	aBP- Module Netzsch O&M Manual				w	PE	THS	Z5/5/12 ·	
5.05	Test PS-620-20 hardwired interlock pressure is 10bar Pump should be i	to pump. When nterlocked out.	NA				w	PE	THE	75/5/12 AT 10	INTER LOCKED
	Stuffing Box Set up - Finger tighte leakage rate should be permitted (5 During the 30min running in time the should be tightened at 1/6th of turn. not rise above about 20 -60degC.	0-200drops/min). e stuffing box bolts	Netzsch - aBP- Module O&M Manual				w	PE	70	BE COMPLETED SLUBGE.	ON
5.07	Complete 30min running in time at 4 stuffing box temperature and leakage	40% speed monitoring ge rate as per manual.	Netzsch - aBP- Module O&M Manual				w	PE	THS	Puny has been I	not sludge
5.08	Complete Pump Flow Check- Run p speeds and record flows, pressure, values are within 10% of manufactu	kW and Amps ensure	NA				w	PE	70	SE COMPLETED SLUDGE.	ON
5.09	Check for damage to pump and lead for next discipline.	ve area tidy and clean	NA				w	PE	STO		

		APPROVAL	
	NAME	SIGNATURE	DATE
JH	TAKE BRAMMER	The	5/6/12

Rev : A

Approved By: Tate Brammer

Date of Issue: 1-2.12

	PUMP INSTALLATION CHE	CK SHEET	AREA:				PULF	PER FEI	ED PUMP S	STATION	
P ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W -			Responsibil	lity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-001	Project Number:	8542		Witnes Surveil	s, H - Hold, S lance	3 -			PE - Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	PULPER FEED PUI	MP 1				-		Tag Numbe	er	PU-620-10
			REFERENCE	-	-	Verify or	Test	by			F 0-020-10
Item No.	Activity	Details	DOCUMENT/ DRAWINGS		S/C			JH		Remarks/F	Records
2.00	Pump Storage		DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
	Pump delivered as specified		Thia		T	1		1	1		
2.0	The delivered as specified		NA	+	-	 	Н	PE	JFA 21	14/12.	
2.02	Clean and free of debris		NA				S	sv	19	/	
2.03	Visual inspect pump and ensu no oil leaks. Record notes.	re there is no damage and	NA				w	sv	ATT 2	19/12.	
3.00	Record nameplate data:			-	<u>.</u>	<u> </u>			102	4/10	
	Pump - Record any variances	to below									
	Manufacturer: NETZSCH			T				_		MA/U 10. A 7000	
0.04	Pump type: NM090		\dashv_{NA}	_					/	MACH NO. 47988 COM NO. L3561-011	11.715
3.01	Model No.: NM090BF02S12B/	aBp	-		_	 	w	PF	PE #	WIN NO. 233 61-01/	111 6130
	Duty Flow: 15m3/h	_				\vdash	••	l. –	VKL /	,	
	Duty Pressure Point: 0.9mPa				-				21/4	//2 · 	
	Motor										
	Manufacturer: NORD	-		1	T					SEE ATTACHED	Dilata P
	Type: 180LH/4 TF							1		THINCHED !	110100.
3.02	Phase: 3		∃		1			-	17/		
	Frequency: 50Hz		-NA				W	PE '	12/	1/2	
	Protection: IP55							1	1 77	7	
	Power: 22 kW										
4.00	Pump Installation					•		*	1		
4.01	Remove Existing Pumps.		NA				S	sv	M	QNUKEND NED K	elove invest
4.02	Install pump and align pump in Anchor using M16 anchors as recommendations use jacking pipework.	per suppliers	Netzsch - Nemo - Pump NMBF O&M				s	sv	d	,	
4.03	Confirm gasket type (3mm ins	ertion rubber)	NA				s	sv	M		
4.04	Modify discharge pipework to a pump and variance in height.	accommodate for longer	NA				s	sv	M	•	

Approved By: Tate Brammer

	PUMP INSTALLATION CHE	CK SHEET	AREA:		1		PULF	PER FEE	ED PUMP S	STATION	
P ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	ecovery		tion Key: W			Responsibil	lity Key: SV- Supervisor, SV-	John Holland
hecksheet o.:	8542-M-PULPER-001	Project Number:	8542		Witnes Surveil	s, H - Hold, S llance	S -			PE – Project Engineer Supdent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	PULPER FEED PUM	IP 1						Tag Numbe	er:	PU-620-10
			REFERENCE			Verify or	Test	бу			1 0-020-10
Item No.	Activity	Details	DOCUMENT/		S/C			JH		Remarks/I	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
4.05	Ensure bolts are torqued up in	correct sequence.	NA				S	sv	11		
4.06	Install anti bridging chute and manual.	devices as per supplier	Netzsch - Nemo - Pump NMBF O&M				s	sv	M		-
4.07	Modify existing SS316 chute to increased height of pump. Ins	o accommodate for pect welds and passivate.	NA				s	sv	N		
4.08	Install existing modified chute.		NA				S	sv	of		<u> </u>
4.09	Check all nuts, bolts, securing fixtures are tightened	flanges and base mounting	NA				s	sv	M		
4.1	Form plinth for pump as per te SikaGrout - Deep pour.	echnical data sheet for	TDS for SikaGrout - Deep Pour				s	sv	A		
4.11	Check oil levels in gearbox an lower edge of the oil level hole 4mm below oil level hole). Ver Manufacturer.	e (NB: Minimum oil level is	Netzsch - Nemo - Pump NMBF O&M				w	PE/SV	A A-B	24/5/12.	
4.12	Check alignment of pump and	gearbox.	Netzsch - Nemo - Pump NMBF O&M				w	sv	M		
4.13	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175				w	PE	THE		
	MECH INSTALLATION COM	PLETE	NA				Н	sv	TES		
5.00	Pump Pre-com Mech										44.1.1
5.01	Remove gearbox breathers as with project engineer.	per NORD Manual - verify	Nord Motor dive Manual B1000-GB- 2511				w	PE	AB :	24/5/12	

Revi : A

Approved By: Tate Brammer

	PUMP INSTALLATION CHEC	CK SHEET	AREA:				PULP	ER FE	ED PUMP S	STATION	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	covery		tion Key: W				ity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-001	Project Number:	8542		Surveil	s, H - Hold, lance	8-			E – Project Engineer Sup- dent PM- Project Manager	HOllding
QUIPMENT D	DESCRIPTION:	PULPER FEED PUM	1P 1						Tag Numbe	er:	PU-620-10
			REFERENCE			Verify o	r Test t	ру			
Item No.	Activity I	Details	DOCUMENT/		S/C			JH		Remarks/	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
5.02	for specific area.		Project 8542 AMS15				н	PE •	JE 24	1/2/12	
5.03	Ensure pump is filled with liquid pumps (Anti-clockwise gives in	d and check rotation of nlet at drive end)	NA				w	PE	JTB 25	12/12	
5.04	Check direction of rotation of a Confirm direction with supplier	inti-bridging devices. manuals.	Netzsch - aBP- Module O&M Manual				w	PE ,	TIDZ	5/2/1Z	
5.05	Test PS-620-10 hardwired inte pressure is 10bar Pump should	rlock to pump. When d be interlocked out.	NA				w	PE 7	JF6 75	PUMP WAS	
5.06	Stuffing Box Set up - Finger to leakage rate should be permitted During the 30min running in time should be tightened at 1/6th of not rise above about 20 -60deg	ted (50-200drops/min). me the stuffing box bolts f turn. Temperature should	Netzsch - aBP- Module O&M Manual				w	PE	70 8	E COMPLETED SLUDGE	oN D
5.07	Complete 30min running in tim stuffing box temperature and le	e at 40% speed monitoring eakage rate as per manual.	Netzsch - aBP- Module O&M Manual				w	PE	THE	Pump how been 30 mins on wat	run far but not s
5.08	Complete Pump Flow Check- F 8 speeds and record flows, press values are within 10% of manu	sure, kW and Amps ensure	NA				w	PE	TO BE	SCUDGE.	V
5.09	Check for damage to pump and for next discipline.	d leave area tidy and clean	NA				w	PE	TH		

Approved By: Tate Brammer

	PUMP INSTALLATION CHEC	CK SHEET	AREA:			P	ULP	ER FEED PUMP STAT	ON	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood R	Recovery	Inspection K	ev: W -		Responsibility Key	y: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-001	Project Number:	8542		Witness, H - Surveillance	Hold, S		Surveyor, PE - Pi	roject Engineer Sup- M- Project Manager	Holland
EQUIPMENT I	DESCRIPTION:	PULPER FEED PU	MP 1					Tag Number:		PU-620-10
			REFERENCE		V	erify or T	est b	у	مجا	
Item No.	Activity I	Details	DOCUMENT/		S/C			JH	Remarks/R	ecords
			DRAWINGS	Key	Resp. Sign	/Date K	еу	Resp. Sign/Date		
				APPRO	OVAL					
		NAME		SIGNAT	URE				DATE	
lН	TATE 6	RAMMER		V	Klum				5/	6/12

Approved By: Tate Brammer

Date c ue: 13.02.12

IN	ISTRUMENT INSTALLATION C	HECK SHEET	AREA:					PULPER	R FEED PU	IMPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood I	Recovery	Inspec	ion Key: W			Responsib	ility Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-201	Project Number:	8542			s, H - Hold,			Surveyor, I	PE – Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	DESCRIPTION:	Dewatered WAS to F	Pulper FIT						Tag Numb	er:	FIT-620-25
			REFERENCE			Verify or	r Test	by		1.600	F11-020-25
Item No.	Activity I	Details	DOCUMENT/		S/C			JH		Remarks/I	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date	=	
1.00	Record nameplate data - rec	ord any variances to belo	W					1/4			
	Manufacturer: Endress & Haus	er									
4.04	Model: Promag W		E & H Promag W				1		-0		
1.01	Order Code: 50W2F-UD0B1Ak	(2KAAH	O&M				W	PE	VIA	,	
	Size: DN250 with PN10 DIN		1		_		1		13/3	X12	
1.02	Instrument issued as per speci	fications/ purchase order	NA				w	PE	TH		
2.00	Instrument installation						<u></u>	-	0.0		
2.01	Check internal pipework and cl	ear any debris	NA	I	T		s	sv	d	<u> </u>	
2.02	Install the instrument upstream tees, elbows etc. and ensure the run is maintained as follows: Inlet run: ≥ 5xDN and Outlet r	ne correct inlet and outlet	E & H Promag W O&M				s	SV/PE	S		
2.03	Install instruments with correct insertion)	gaskets. (3mm rubber	E & H Promag W O&M				s	sv	1		
2.04	Ensure bolts are cleaned and v torquing.	vell lubricated before	NA				s	sv	N.		
2.05	Ensure bolts are torqued up as methodology and torque rating 94 Nm for 12 bolts) Mark all b torquing completed.	(Approx Torque per bolt	E & H Promag W O&M				s	sv	1.		
2.06	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE	THS	215/12.	
	Roll up and fasten the cable rea	•	NA				s	sv	1.		
2.08	Check for damage and leave and discipline.	ea tidy and clean for next	NA				w	PE	Sign	7/5/2	

Approved By: Tate Brammer

IN.	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:				Ī	PULPER	FEED PUM	PS	PLYS CHURT
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood R	Recovery	Inspec	tion Key: W	_		Responsibility	y Key: SV- Supervisor, SV-	ndo <u>l</u>
Checksheet No.:	8542-M-PULPER-201	Project Number:	8542			s, H - Hold,			Surveyor, PE	- Project Engineer Sup- ent PM- Project Manager	Holland
EQUIPMENT I	DESCRIPTION:	Dewatered WAS to	Pulper FIT						Tag Number		FIT-620-25
			REFERENCE			Verify o	r Test	by			
Item No.	Activity	Details	DOCUMENT/		S/C	;		JH		Remarks/F	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.09	9 MECH INSTALLATION COM	PLETE	NA				Н	sv	1		
00 KN 40 G 20 2				and the second of	ROVAL	- 1					
		NAME		SIGN	TURE					DATE	, ,
JH	TATE I	SAMMER			TH	fl.				5/6	1/12
						ı'					<u> </u>

Approved By: Tate Brammer

Date c ue: 13.02.12

IN	ISTRUMENT INSTALLATION (CHECK SHEET	AREA:				F	PULPER	R FEED PU	MPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W			Responsibil	ity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-202	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	\$ -		Surveyor, P	E – Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	ESCRIPTION:	Pulper Feed Dilution	Service Water Flow	Meter					Tag Numbe	er:	FIT-620-35
			REFERÊNÇE			Verify o	r Test I	by			111-020-33
Item No.	Activity	Details	DOCUMENT/		S/C			JH		Remarks/F	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
1.00	Record nameplate data - rec		OW .								
	Manufacturer: Endress & Haus	ser									
1.01	Model: Promag P		E & H Promag P]	l ,	1		
1.01	Order Code: 50P50-E50A1AK	2KAAH	O&M				dw	PE	115		
	Size: DN50 with PN16 DIN		7				1		71/5/1	2 .	
1.02	Instrument issued as per spec	ifications/ purchase order	NA				w	PE	AR		
2.00	Instrument installation						.L		10/20		
2.01	Check internal pipework and c	lear any debris	NA	T	T	I	Is	sv	A		
2.02	Install the instrument upstream tees, elbows etc. and ensure the run is maintained as follows: Inlet run: ≥ 5xDN and Outlet in	he correct inlet and outlet	E & H Promag P O&M				s	SV/PE	NA	As per existing instable -	rg
2.03	Install instruments with correct insertion)	t gaskets. (3mm rubber	E & H Promag P O&M				s	sv	1		
2.04	Ensure bolts are cleaned and volume.	well lubricated before	NA				s	sv	y		
2.05	Ensure bolts are torqued up as methodology and torque rating 65 Nm for 4 bolts) Mark all bocompleted.	(Approx Torque per bolt					s	sv	8		
2.06	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175				w	PE	SHO	21/5/12.	
2.07	Roll up and fasten the cable re	eady for electrical installation	n NA				s	sv	1.		
2.08	Check for damage and leave a discipline.	rea tidy and clean for next	NA				w	PE	THE		·

Approved By: Tate Brammer

II	NSTRUMENT INSTALLATION C	HECK SHEET	AREA:					PULPER	R FEED PUM	IPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibilit	ty Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-202	Project Number:	8542			s, H - Hold,			Surveyor, PE	E – Project Engineer Sup- ent PM- Project Manager	Holland
EQUIPMENT	DESCRIPTION:	Pulper Feed Dilution	n Service Water Flow I	Meter					Tag Number	:	FIT-620-35
			REFERENCE			Verify o	r Test	by			
Item No.	Activity I	Details	DOCUMENT/		S/C)		JH		Remarks/R	ecords
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.0	9 MECH INSTALLATION COMP	PLETE	NA				Н	sv	A		
				400	YOUAL	*			1		
		NAME		SIGNA	TURE					DATE	
JH	TATE BRA	MOR			The	h				5/	16/17
JH	THIE BRA				7/1/5	h-					6/12

Approved By: Tate Brammer

Date (ue: 13.02.12

IN	STRUMENT INSTALLATION CHE	CK SHEET	AREA:				F	PULPER	R FEED PU	MPS	- /= =
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspect	ion Key: W	-			lity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-203	Project Number:	8542		Surveil	s, H - Hold, lance	S -			PE – Project Engineer Sup- dent PM- Project Manager	HOlidind
QUIPMENT D	ESCRIPTION:	Pulper Feed Pump 1	Inlet Pressure Trans	mitter			-		Tag Numb	er:	PIT-620-01
			REFERENCE		Mari	Verify of	Test	by			111 020 0
Item No.	Activity Deta	ils	DOCUMENT/ DRAWINGS	16	S/C			Jł		Remarks/F	Records
1.00	Record nameplate data - record	any variances to below		Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
	Manufacturer: Endress & Hauser		T		1	i	_	Т		Hartad wicon	MARTIT IN
1.01	Model: PMC51 - WFW9/0 PMC4	11-GLZIPIRIINI	Cerabar M, E&H		 		w	PE	TB	RECALIBRATED WI	TH NEW
1.02	Instrument issued as per specifical verify instrument is not damage	tions/ purchase order -	Instructions.				w	PE	TFB	DIAPHRAGM.	111 /00-0
2.00	Instrument installation										
2.01	Remove existing instrument.		NA				s	sv	1/1		
2.02	Inspect and clean existing flanges, fasteners.	pipework and	NA				s	sv	9		
	Ensure the following is following	during installation:		 			_	+	NA		
2.03	Do not touch or clean the diaphrag pointed objects.		Cerabar M, E&H				s	sv	A		
	Do not remove the protection on the before installation.	e diaphragm until just	Instructions.						OPS		
2.04	Connect PIT to measuring location (3mm insertion rubber)	s using correct gaskets.	NA				s	sv	1		
2.05	Ensure bolts are cleaned and well torquing.	lubricated before	NA				s	sv	1		
2.06	Tighten all bolts.		NA				s	sv	10/		
	Post Installation Checks:		Cerabar M, E&H						NA		
2.07	Are all screws firmly tightened.		Operating				lw	PE	08		
	Are the housing covers screwed do		Instructions.				l''	ľ	SPB		
	Are all locking screws and vent val	ves firmly tightened.							95		
2.08	Equipment lables are in place and	consistent with P&ID.	486/5/5-R7D175				w	PE	VB		
2.09	Roll up and fasten the cable ready	for electrical installation	NA				s	sv	1	4	·

Approved By: Tate Brammer

II.	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:					PULPER	R FEED PUM	PS	
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W		1	Responsibility	y Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-203	Project Number:	8542			s, H - Hold,			Surveyor, PE	- Project Engineer Sup- ent PM- Project Manager	Holland
EQUIPMENT (DESCRIPTION:	Pulper Feed Pump 1	Inlet Pressure Trans	mitter					Tag Number	:	PIT-620-01
			REFERENCE			Verify o	r Test	by			
Item No.	Activity	Details	DOCUMENT/		\$/0			JF	1	Remarks/R	ecords
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.10	O Check for damage and leave a discipline.	area tidy and clean for next	NA				w	sv	A		
2.1	1 MECH INSTALLATION COM	PLETE	NA				н	sv	2/		
				APP	ROVAL						
		NAME		SIGNA		/				DATE .	
JH	TATE	BRAMMER			Trak	7	_			5/4	1/2
	1 31 -	71477111111		$\overline{}$	1000						12

Approved By: Tate Brammer

Date c :ue: 13.02.12

IN	ISTRUMENT INSTALLATION C	HECK SHEET	AREA:				P	PULPER	R FEED PU	MPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		ion Key: W			Responsibi	lity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-204	Project Number:	8542		Witnes	s, H - Hold, lance	S -		Surveyor, F Superintend	PE – Project Engineer Sup- dent PM- Project Manager	Foliana
QUIPMENT D	ESCRIPTION:	Pulper Feed Pump 2	2 Inlet Pressure Trans	mitter					Tag Numb	er:	PIT-620-02
			REFERENCE			Verify o	r Test b	by		351 f	111-020-02
Item No.	Activity I	Details	DOCUMENT/		S/C			JH	l	Remarks/F	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
1.00	Record nameplate data - rec	ord any variances to belo	OW .								
1.01	Manufacturer: Endress & Haus									EXISTING INSTRU	MENIT MIAS
1.01	Model: PMC51 WFW9/0 PN	1041-GLZIPPRILNI	Cerabar M, E&H				W	PE	(J))	EXISTING INSTRUI RECALIBRATED N	1114 4117
4.00	Instrument issued as per speci	ifications/ ourchase order -	Operating Instructions.	_	+		_	+	-		TIM NEW
1.02	verify instrument is not dama				1		w	PE	VIS	DIAPHRAGM.	
	Instrument installation							-			
2.01	Remove existing instrument.		NA				s	sv	1		
2.02	Inspect and clean existing flang fasteners.	ges, pipework and	NA				s	sv	P		
-	Ensure the following is follow	wing during installation:					_	 	NA		
2.03	Do not touch or clean the diaph pointed objects.		Cerabar M, E&H Operating				s	sv	TH		
	Do not remove the protection of before installation.	on the diaphragm until just	Instructions.				Ĭ		SPB		
2.04	Connect PIT to measuring loca (3mm insertion rubber)	ations using correct gaskets	3. NA				s	sv	THE		
2.05	Ensure bolts are cleaned and votorquing.	well lubricated before	NA				s	sv	UTB		
2.06	Tighten all bolts.		NA				S	sv	NES		
	Post Installation Checks:		Cerabar M, E&H						NA		
2.07	Are all screws firmly tightened.		Operating				l _w	PE	THE.		
2.01	Are the housing covers screwe		Instructions.				''	l' -	OFB		
<u> </u>	Are all locking screws and vent	t valves firmly tightened.			-				NA		
2.08	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE	JES		
2.09	Roll up and fasten the cable re	ady for electrical installation	n NA				s	sv	STO		

Approved By: Tate Brammer

ll ll	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:				P	ULPER	FEED PUMP	S	
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood R	Recovery	Inspec	tion Key: W	_		Responsibility	Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-204	Project Number:	8542			s, H - Hold,			Surveyor, PE -	- Project Engineer Sup- t PM- Project Manager	Holland
EQUIPMENT	DESCRIPTION:	Pulper Feed Pump	2 Inlet Pressure Transi	mitter					Tag Number:		PIT-620-02
			REFERENCE			Verify o	r Test k	ру			
Item No.	Activity	Details	DOCUMENT/		S/C			JH		Remarks/R	Records
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.1	Oheck for damage and leave a discipline.	area tidy and clean for next	NA				w	sv	THE		
2.1	1 MECH INSTALLATION COM	PLETE	NA				Н	sv	THE		

		APPROVAL	
	NAME	SIGNATURE	DATE / /
JH	TATE BRAMMER	There	5/6/12

Approved By: Tate Brammer

Date (Nue: 13.02.12

IN	STRUMENT INSTALLATION C	HECK SHEET	AREA:				F	PULPER	FEED PU	MPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W			Responsibil	lity Key: SV- Supervisor, SV-	John Holland
Checksheet No.:	8542-M-PULPER-205	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	S-		Surveyor, F	PE – Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	ESCRIPTION:	Dewatered WAS to I	Pulper Discharge Pres	sure					Tag Numbe	er:	PIT-620-2
			REFERENCE		-	Verify o	r Test	bv			F11-020-23
Item No.	Activity I	Details	DOCUMENT/		S/C			JH		Remarks/I	Records
			DRAWINGS			Resp. Sign/Date		Resp.	sp. Sign/Date		
1.00	Record nameplate data - rec	ord any variances to belo	W			-20	**				
1.01	Manufacturer: Endress & Haus	er							/		
1.01	Model: PMC51 - AA31JI1SGB0	CXJA +71	Cerabar M, E&H				lw	PE '	1725	2/5/12	
1.02	Instrument issued as per speci	fications/ purchase order -	Operating Instructions.				14/	-	10	4/5/12	
	verify instrument is not dama	aged.					W	PE	10	2/5/12	
	Instrument installation										
2.01	Remove existing instrument.		NA				S	SV			
2.02	Inspect and clean existing flang fasteners.	ges, pipework and	NA				s	sv	0		
	Ensure the following is following during installation:			+	+			-	ONA		
2.02	Do not touch or clean the diaph pointed objects.		Cerabar M, E&H						4		
2.00	Do not remove the protection o before installation.	n the diaphragm until just	Operating Instructions.				S	SV	TIB		
2.04	Connect PIT to measuring loca (3mm insertion rubber)	tions using correct gaskets	NA				s	sv	9		
2.05	Ensure bolts are cleaned and v torquing.	vell lubricated before	NA				s	sv	4		
2.06	Tighten all bolts.			-			s	sv	1		
	Post Installation Checks:		Caraban M. Esti						ONA		
2.07	Are all screws firmly tightened.		Cerabar M, E&H Operating				w	PE	AB		
,	Are the housing covers screwe		Instructions.]**	ارد	NA		
	Are all locking screws and vent	valves firmly tightened.							NA		
2.08	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE Y	ITB,	21/5/12	
2.09	Roll up and fasten the cable rea	ady for electrical installation	NA				s	sv	A		

Approved By: Tate Brammer

II	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:					PULPER	R FEED PUM	PS	tan a
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W			Responsibility	y Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-205	Project Number:	8542		Witness, H - Hold, S - Surveillance				Surveyor, PE	- Project Engineer Sup- ent PM- Project Manager	Holland
EQUIPMENT (JIPMENT DESCRIPTION: Dewatered WAS to			ssure			Tag Number		PIT-620-25		
			REFERENCE		Verify o	r Test	by	lar a			
Item No.	Activity	Activity Details			S/C			JH		Remarks/R	Records
				Key	Resp.	Resp. Sign/Date		Resp.	Sign/Date		
2.10	Check for damage and leave a discipline.	area tidy and clean for next	NA				w	sv	4		
2.1	1 MECH INSTALLATION COM	PLETE	NA				Н	sv	00		
				ADD	ROVAL				"()		
		NAME			ATURE					DATE	
JH	THIE BR.	AMMER			THE					5/8	1/17
	THE DUTINITY										712

Approved By: Tate Brammer

Date c sue: 13.02.12

INSTR	UMENT INSTALLATION CHI	ECK SHEET	AREA:				PULPER FEED I	PUMP STAT	ION		
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	ecovery				Responsibili	ity Key: SV- Supervisor, SV- E – Project Engineer Sup-		
Checksheet No.:	8542-M-PULPER-601	Project Number:	8542		Inspection K Hold, S - Su		ness, H	Surveyor, PE – Project Engineer Sup- Superintendent PM- Project Manager			
EQUIPMENT D	DESCRIPTION:	PULPER FEED PU	JMP STATION SWITC	HES							
Tag Number	Description	Manufacturer	Model	Serial No.	Installed as per O&M	Set point	Additional Parameters Set & Attached	Test Operation	Remarks/Records		
PSH-620-10	Pulper Feed Pump 1 Discharge Pressure Switch	United Electrics	12SHSM5D K	691779-1	OB	10.8ar	XIA	JEhn	25/5/12		
PSH-620-20	Pulper Feed Pump 2 Discharge Pressure Switch	United Electrics	12SHSM5D KI6	91779-2	THE	10Bar	KA.	THE	25/5/12.		
LSH-620-51	Bund High Level Switch	Multitrode	O. Z/I LIQUID LEVEL SENSING PROSE.	193793	THE	/	NA	THE	5/6/12		
FSL-660-01	Service Water Booster Pumps Flow Switch	1FM	S15010	SIDIOAD BFPKG/US	THS.		NA	OTO	5/6/12		
PI-660-01	Pressure indicator Discharge of Service Water booster pumps	NA	NA	NA	XIA	XA	XIA	X64.	NOT PART OF TH SCORE		
	T	NAME		SIGNATURE	APPROVA	L					
JH	TATE BU	mmer		J.	-//		· · · · · ·		5/6/12		

Approved By: Tate Brammer

Date c ue: 13.02.12

IN	ISTRUMENT INSTALLATION (CHECK SHEET	AREA:	4 -4 -			Pl	ULPER	FEED PU	MPS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspection K	ev: W -			Responsibi	lity Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-201	Project Number:	8542		Witness, H - Surveillance		•		Surveyor, F	PE – Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	ESCRIPTION:	Dewatered WAS to	Pulper FIT						Tag Numb	er:	FIT-620-25
			REFERENCE		Ve	rify or T	est by		and the state of t	<u> </u>	F11-020-25
Item No.	Activity	Details	DOCUMENT/ DRAWINGS		S/C		JH			Remarks/F	ecords
1.00	Record nameplate data - rec	cord any variances to hale		Key	Resp. Sign	p. Sign/Date Key Res		Resp. Sign/Date			
1.00	Manufacturer: Endress & Haus		JW		T - 1				11	T	
	Model: Promag W		-		-				-		
1.01	Order Code: 50W2F-UD0B1A	KSKVVI	E & H Promag W O&M		 		V PE		778		
	Size: DN250 with PN10 DIN		-						13/3	1/12	
	DIZO. DIAZOO WILII FIA IO DIN								- / /		
	Instrument issued as per spec	ifications/ purchase order	NA			w	/	PE	178		
	Instrument installation										
2.01	Check internal pipework and c		NA			s		SV	14		
2.02	Install the instrument upstream tees, elbows etc. and ensure to run is maintained as follows: Inlet run: ≥ 5xDN and Outlet in	he correct inlet and outlet	E & H Promag W O&M			s		SV/PE	A		
2.03	Install instruments with correct insertion)	gaskets. (3mm rubber	E & H Promag W O&M			s		sv	#		
2.04	Ensure bolts are cleaned and votorquing.	well lubricated before	NA			s		sv	N.		
2.05	Ensure bolts are torqued up as methodology and torque rating 94 Nm for 12 bolts) Mark all b torquing completed.	(Approx Torque per bolt	E & H Promag W O&M			s		SV	1.		
2.06	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175			w		PE	THS	21/5/12.	
2.07	Roll up and fasten the cable re		NA NA			s		sv	1.		
2.08	Check for damage and leave a discipline.	rea tidy and clean for next	NA			w		PE	June 1	_ / /	

Approved By: Tate Brammer

II.	NSTRUMENT INSTALLATION	CHECK SHEET	AREA:				1	PULPER	R FEED PUMP	S		
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibility	Key: SV- Supervisor, SV-	John Holland	
Checksheet No.:	8542-M-PULPER-201	Project Number:	8542	05.40			Witness, H - Hold, S - Surveillance			Surveyor, PE – Project Engineer Sup- Superintendent PM- Project Manager		
EQUIPMENT I	DESCRIPTION:	Dewatered WAS to									FIT-620-25	
			REFERENCE			Verify o	r Test	by				
Item No.	Activity Details		DOCUMENT/		S/C	S/C				Remarks/F	Records	
				Key	Resp.	Sign/Date	Key	Resp.	Sign/Date			
2.09	9 MECH INSTALLATION COM	PLETE	NA				н	sv	A			
				- Carrier Contract Co	ROVAL							
		NAME		SIGNA	TURE	1				DATE	, ,	
JH	TATE BLAMMER			OFfline						5/6	1/12	
						1′—			-			

Approved By: Tate Brammer

Date c ue: 13.02.12

IN	INSTRUMENT INSTALLATION CHECK SHEET		AREA:					PULPER	FEED PUI		
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W			Responsibil	ity Key: SV- Supervisor, SV-	John Holland
Checksheet lo.:	8542-M-PULPER-202	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	\$ -		Surveyor, P	E – Project Engineer Sup- dent PM- Project Manager	HOllana
QUIPMENT D	ESCRIPTION:	Pulper Feed Dilution	Service Water Flow I	Meter					Tag Numbe	er:	FIT-620-35
				I	-	Verify o	r Test	by	Timevalue		111-020-33
Item No.	Activity I	Details	REFERÊNCE DOCUMENT/	NT/				JH		Remarks/F	Records
			DRAWINGS	Resp.	Resp. Sign/Date Key		Resp.	Sign/Date			
1.00	Record nameplate data - rec		w								
	Manufacturer: Endress & Haus	ser									
4.04	Model: Promag P		E & H Promag P				1	Ι.			
1.01	Order Code: 50P50-E50A1AK2	2KAAH	O&M				√w	PE '	VHS		
	Size: DN50 with PN16 DIN		1		1		1		7/5/	7	
1.02	Instrument issued as per speci	ifications/ purchase order	NA	_	+		w	PE	0/5/10		
2.00	Instrument installation	· · · · · · · · · · · · · · · · · · ·			1		Ι''	<u> </u>	MB		
	Check internal pipework and c	lear any dehris	NA	T :	T	I	Is	sv			
2.02	Install the instrument upstream tees, elbows etc. and ensure the run is maintained as follows: Inlet run: ≥ 5xDN and Outlet r	he correct inlet and outlet	E & H Promag P O&M				s	SV/PE	NA	As per existing install.	rg
2.03	Install instruments with correct insertion)	gaskets. (3mm rubber	E & H Promag P O&M				s	sv	1		
2.04	Ensure bolts are cleaned and votorquing.	well lubricated before	NA				s	sv	y		
2.05	Ensure bolts are torqued up as methodology and torque rating 65 Nm for 4 bolts) Mark all bo completed.	(Approx Torque per bolt	E & H Promag P O&M				s	sv	1		
2.06	Equipment lables are in place	and consistent with P&ID.	486/5/5-R7D175				w	PE	SHO	21/5/12.	
2.07	Roll up and fasten the cable re	ady for electrical installation	NA NA				s	sv	1.		
2.08	Check for damage and leave a discipline.	rea tidy and clean for next	NA				w	PE	TH		-

Approved By: Tate Brammer

ll.	NSTRUMENT INSTALLATION C	HECK SHEET	AREA:				F	PULPER	R FEED PUMI	PS	45 24
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood R	Recovery	Inspec	tion Key: W	_		Responsibility	Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-202	Project Number:	0540		Witnes	Witness, H • Hold, S - Surveillance			Surveyor, PE	- Project Engineer Sup- nt PM- Project Manager	Holland
QUIPMENT I	DESCRIPTION:	Pulper Feed Dilution	n Service Water Flow Meter Tag N						Tag Number:		FIT-620-35
			REFERENCE			Verify o	Test	by			
Item No.	Activity Details		DOCUMENT/	S/C			J			Remarks/R	ecords
			DRAWINGS	Key	Resp.	Sign/Date Key	Key	Resp.	Sign/Date		
2.0	9 MECH INSTALLATION COMP	LETE	NA				н	sv	A		
									1.		
		NAME			ROVAL						
		NAME		SIGNA	TURE	1				DATE	1 ,
IH	TATE BRA	MERZ			TIB	h-				5/	6/12

Approved By: Tate Brammer

Date (ue: 13.02.12

IN	STRUMENT INSTALLATION CHEC	K SHEET	AREA:				F	PULPER	R FEED PU	MPS	
P ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspect	ion Key: W	-		Responsibi	lity Key: SV- Supervisor, SV-	John Holland
hecksheet lo.:	8542-M-PULPER-203	Project Number:	8542		Witnes	s, H - Hold, ance	S -		Surveyor, F Superinten	PE – Project Engineer Sup- dent PM- Project Manager	Holland
QUIPMENT D	ESCRIPTION:	Pulper Feed Pump 1	Inlet Pressure Trans	mitter		· · · · · · · · · · · · · · · · · · ·	-		Tag Numb	er:	PIT-620-01
		· · · · · · · · · · · · · · · · · · ·	REFERENCE		Maria	Verify o	r Test	by		2000	111 020-01
Item No.	Activity Detail	ls	DOCUMENT/ DRAWINGS		S/C			JH	· · · · · · · · · · · · · · · · · · ·	Remarks/F	Records
1.00	Record nameplate data - record a	nv variances to belo		Key	Resp. Sign/Date Key Res		Resp.	Sign/Date			
	Manufacturer: Endress & Hauser	ary variations to bolo			1	·	1	Т-		Handa de la coma	1448414 100
1.01	Model: PMC51 - WFW9/0 PMC4	1-GLZIPIRIINI	Cerabar M, E&H	_			w	PE	TH	RECALIBRATED W	MEN WH
1.02	Instrument issued as per specification	ons/ purchase order -	Operating Instructions.				w	PE	TER	DIAPHRAGM.	IH NEW
2.00	Instrument installation		1						012		
	Remove existing instrument.		NA	T	T		s	sv	1	T	
2.02	Inspect and clean existing flances in	pipework and	NA				s	sv	0		
	Ensure the following is following during installation:		 	+ -				+	NA		
2.03	Do not touch or clean the diaphragm pointed objects.		Cerabar M, E&H Operating				s	sv	K		
	Do not remove the protection on the before installation.	diaphragm until just	Instructions.			-		4	OPS		
2.04	Connect PIT to measuring locations (3mm Insertion rubber)	using correct gaskets.	NA				s	sv	1		
2.05	Ensure bolts are cleaned and well lutorquing.	ubricated before	NA				s	sv	1		
2.06	Tighten all bolts.		NA				s	SV	1		
	Post Installation Checks:		Cerabar M, E&H						NA		
2.07	Are all screws firmly tightened.		Operating				l _w	PE	078		
	Are the housing covers screwed dov		Instructions.				1"	ļ	JPB		
	Are all locking screws and vent valve	es firmly tightened.				_			925		
2.08	Equipment lables are in place and co	onsistent with P&ID.	486/5/5-R7D175				w	PE	VIB		
2.09	Roll up and fasten the cable ready fo	or electrical installation	NA				s	sv	1	4	-

Approved By: Tate Brammer

IN:	STRUMENT INSTALLATION (CHECK SHEET	AREA:				- 1	PULPER	R FEED PUMP	PS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W	_		Responsibility	Key: SV- Supervisor, SV-	John
Checksheet No.:	8542-M-PULPER-203	8542			s, H - Hold,			Surveyor, PE - Superintender	Holland		
EQUIPMENT D	ESCRIPTION:	Pulper Feed Pump 1	Inlet Pressure Trans	mitter					Tag Number:		PIT-620-01
			REFERENCE			Verify o	r Test	by			
Item No.	Activity Details		DOCUMENT/ DRAWINGS		S/C	S/C				Remarks/R	ecords
		Key		Resp.	Sign/Date	Key	Resp.	Sign/Date			
2.10	Check for damage and leave a discipline.	rea tidy and clean for next	and clean for next NA				W	sv	A		
2.11	MECH INSTALLATION COM	PLETE	NA				н	sv	4		
				AOD	ROVAL				11		
		NAME			ATURE	_				DATE .	
JH	TATE	BRAMMER			TTOK	5				5/6/	17

Approved By: Tate Brammer

Date c :ue: 13.02.12

IN			AREA:	-				PULPER	FEED PU			
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		ion Key: W				lity Key: SV- Supervisor, SV-	John Holland	
Checksheet No.:	8542-M-PULPER-204	Project Number:	8542		Witnes Surveil	s, H - Hold, lance	S-		Surveyor, F Superinten	PE – Project Engineer Sup- dent PM- Project Manager	Holiana	
EQUIPMENT D	DESCRIPTION:	Pulper Feed Pump 2	Inlet Pressure Trans	mitter					Tag Numb	er:	PIT-620-02	
			REFERENCE	- -		Verify o	r Test	bv		34	P11-020-02	
Item No.	Activity D	Details	DOCUMENT/		1			JH		Remarks/F	Records	
			DRAWINGS	Key	Resp.	Resp. Sign/Date Key Resp.		Resp.	Sign/Date			
1.00	Record nameplate data - rec		W									
1.01	Manufacturer: Endress & Hause		0				l _w	PE	m	EXISTING INSTRUI	WENT WAS	
	Model: PMC51 WFW9/0 PW	1041-GLZIPPRIINI	Cerabar M, E&H Operating				1 ^{vv}	ILE	(12)	EXISTING INSTRUI RECALIBRATED M	ITH NETW	
1.02	Instrument issued as ner specif	fications/ purchase order -	Instructions.				w	PE	JIB	DIAPHRAGM.	7,00	
2.00	Instrument installation								1.0		·····	
2.01	Remove existing instrument.		NA	T	T		s	sv	1	T		
2.02	Inspect and clean existing flang fasteners.	ges, pipework and	NA				s	sv	O p		<u> </u>	
	Ensure the following is follow	ving during installation:	 				-	_	NA		 	
2.03	Do not touch or clean the diaph pointed objects.		Cerabar M, E&H Operating				s	sv	TH			
	Do not remove the protection of before installation.	n the diaphragm until just	Instructions.					J	SPB			
2.04	Connect PIT to measuring local (3mm insertion rubber)	tions using correct gaskets	. NA				s	sv	THE			
2.05	Ensure bolts are cleaned and worduing.	vell lubricated before	NA				s	sv	THE			
2.06	Tighten all bolts.		NA				s	sv	ME			
	Post Installation Checks:		Cerabar M, E&H		L.				NA			
2.07	Are all screws firmly tightened.		Operating				l _w	PE	THE.			
	Are the housing covers screwed		Instructions.]"	l, -	OFB			
	Are all locking screws and vent	valves firmly tightened.							NA			
2.08	Equipment lables are in place a	and consistent with P&ID.	486/5/5-R7D175				w	PE	STES			
2.09	Roll up and fasten the cable rea	ady for electrical installation	NA NA				s	sv	STB			

Approved By: Tate Brammer

Date of Issue: 13.02.12

ll ll	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:				F	PULPER	FEED PUMP	S	
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood R			Inspection Key: W -			Responsibility I	Key: SV- Supervisor, SV-	John Holland
Checksheet No.:	8542-M-PULPER-204	Project Number:	8542		Witness, H - Hold, S Surveillance			Surveyor, PE - Proj		- Project Engineer Sup- t PM- Project Manager	
EQUIPMENT I	DESCRIPTION:	Pulper Feed Pump 2	Inlet Pressure Transi	mitter	<u></u>		-		Tag Number:		PIT-620-02
			REFERENCE		Verify or Test by						
Item No.	Activity	Activity Details		S/C			JH	JH Remarks/		Records	
				Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.1	O Check for damage and leave a discipline.	area tidy and clean for next	NA				w	sv	STE		
2.1	1 MECH INSTALLATION COM	PLETE	NA				Н	sv	THE		

		APPROVAL	
	NAME	SIGNATURE	DATE /)
JH	THIE BRAMMER	There	5/6/12

Approved By: Tate Brammer

Date (Nue: 13.02.12

IN	INSTRUMENT INSTALLATION CHECK SHEET		AREA:				F	PULPER	FEED PU	MPS		
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery		tion Key: W			Responsibil	lity Key: SV- Supervisor, SV-	John Holland	
Checksheet No.:	8542-M-PULPER-205	Project Number:	8542		Witness, H - Hold, S - Surveillance				Surveyor, F Superintend	PE – Project Engineer Sup- dent PM- Project Manager	Holiand	
QUIPMENT D	ESCRIPTION:	Dewatered WAS to I	Pulper Discharge Pressure					Tag Numbe	er:	PIT-620-25		
			REFERENCE			Verify o	r Test	by			F11-020-23	
Item No.	Activity I	Details	DOCUMENT/		S/C			JH		Remarks/I	Records	
			DRAWINGS	Key	Resp.	Sign/Date	Key	Resp.	Sign/Date			
1.00	Record nameplate data - rec		W			- 20	11					
1.01	Manufacturer: Endress & Haus	er					l		5-/			
1.01	Model: PMC51 - AA31JI1SGB0	CXJA +71	Cerabar M, E&H				W	PE '	772	2/5/12		
1.02	Instrument issued as per speci verify instrument is not dama	fications/ purchase order -	Operating Instructions.				w	PE	STE	2/3/12		
2.00	Instrument installation		<u> </u>	Щ		<u> </u>		<u> </u>	170	4/3/12		
	Remove existing instrument.		ĪNA	T	Т		s	Isv		<u> </u>		
	Inspect and clean existing flant	age pinework and	N/A	+	-		3	- SV	1			
2.02	Inspect and clean existing flanges, pipework and fasteners.		NA				s	sv	M			
	Ensure the following is follow	wing during installation:							NA			
2.03	Do not touch or clean the diaph pointed objects.	nragm seals with hard or	Cerabar M, E&H Operating				s	sv	4			
	Do not remove the protection obefore installation.	on the diaphragm until just	Instructions.					J.V	TIB			
2.04	Connect PIT to measuring loca (3mm insertion rubber)	ations using correct gaskets	NA				s	sv	1			
2.05	Ensure bolts are cleaned and v torquing.	vell lubricated before	NA				s	sv	9			
2.06	Tighten all bolts.			-			s	sv	1			
	Post Installation Checks:		Combanda 5811						ONA			
2.07	Are all screws firmly tightened.		Cerabar M, E&H Operating				w	PE	AB			
. 2.07	Are the housing covers screwe		Instructions.]**		NA			
	Are all locking screws and vent	t valves firmly tightened.							NA			
2.08	Equipment lables are in place and consistent with P&ID.		486/5/5-R7D175				w	PE 1	ITB,	21/5/12		
2.09	Roll up and fasten the cable ready for electrical installation		NA NA				S	sv	A			

Approved By: Tate Brammer

Date of Issue: 13.02.12

II	NSTRUMENT INSTALLATION (CHECK SHEET	AREA:					PULPER	R FEED PUM	PS	
TP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood F	Recovery	Inspec	tion Key: W			Responsibility Key: SV- Supervisor, SV-		John
Checksheet No.:	8542-M-PULPER-205	Project Number:	8542		Witness, H - Hold, S Surveillance				Surveyor, PE	Project Engineer Sup- nt PM- Project Manager	Holland
EQUIPMENT DESCRIPTION: Dewatered WAS to		ulper Discharge Pressure					Tag Number:		PIT-620-25		
						Verify o	r Test	by			
Item No.	Activity Details		DOCUMENT/ DRAWINGS	S/C JH			JH Remarks		Records		
				Key	Resp.	Sign/Date	Key	Resp.	Sign/Date		
2.10	Check for damage and leave a discipline.	area tidy and clean for next	NA				w	sv	4		
2.1	1 MECH INSTALLATION COM	PLETE	NA				Н	sv	00		
				ADD	ROVAL				0		
W W . L. W . W . W .		NAME			ATURE					DATE	
JH	THIE BRI	AMMER	·		THE		_	-		5/6	//Z

Approved By: Tate Brammer

Date c sue: 13.02.12

INSTR	UMENT INSTALLATION CHI	ECK SHEET	AREA:		PULPER FEED PUMP STATION							
ITP ref. No:	8542-008-PULPER	Project:	Oxley WRP Flood Re	ecovery				Responsibili	ity Key: SV- Supervisor, SV-			
Checksheet No.:	8542-M-PULPER-601	Project Number:	8542		Inspection K Hold, S - Su		ness, H	Responsibility Key: SV- Supervisor, SV- Surveyor, PE – Project Engineer Sup- Superintendent PM- Project Manager				
EQUIPMENT D	DESCRIPTION:	PULPER FEED PU	JMP STATION SWITC	HES								
Tag Number	Description	Manufacturer	Model	Serial No.	Installed as per O&M	Set point	Additional Parameters Set & Attached	Test Operation	Remarks/Records			
PSH-620-10	Pulper Feed Pump 1 Discharge Pressure Switch	United Electrics	12SHSM5D K	691779-1	OB	10.8ar	XIA	JEhn	25/5/12			
PSH-620-20	Pulper Feed Pump 2 Discharge Pressure Switch	United Electrics	12SHSM5D KI6	91779-2	THE	10Bar	KA.	THE	25/5/12.			
LSH-620-51	Bund High Level Switch	Multitrode	O. Z/I LIQUID LEVEL SENSING PROSE.	193793	THE	/	NA	THE	5/6/12			
FSL-660-01	Service Water Booster Pumps Flow Switch	1FM	S15010	SIDIOAD BFPKG/US	THS.		NA	OTO	5/6/12			
PI-660-01	Pressure indicator Discharge of Service Water booster pumps	NA	NA	NA	XIA	XA	XIA	X64.	NOT PART OF TH SCORE			
	I	NAME		SIGNATURE	APPROVA	L						
JH	TATE BU	gmmek		J.	-//		· · · · · ·		5/6/12			

Form: 8531 – HTR - 003

Revision: 0

HYDRO STATIC TESTING RECORD

PRESSURE PIPELINES DICL, GRP, PVC



Australian Standard R		AS 2566.2:2002 App M4		Line No:	238-200-	DKL-DWAS
	ulper Feed Line					
Zille littereller:	OICL and PE			Line Size:	DN200	1
Hydro Test Medium:	Potable Wat					
Hydro test Equipment	t: Motorised	Test Pump				
Pipe Test Pressure (K			_	00KPA		
Hold Test for 12 hour		<u> </u>	Yes			
Allowable Make-up V	Vater Quantit	$\text{ty} (Q \le 0.14 \text{LDH})(\text{L/hr})$	0.1	3 L/hr		
Measured Make-up W	ater Quantit	y (L/hr)	0		-	
Ambient	Start of Tes	st	240			
Temperature:	Completion	of Test	20			-
Water Temperature:	1		200			
Hydro Test Complies:			Yes			
If Hydro Test Fails At	tach Sketch	of Repaired Section:				
Test Water Dumped (1	location):		Sev	ver		1
Pipeline is	□ fi	t for service	□ ne	ot fit for ser	vice	
John Holland Supervis	sor	Name: Don Pill			-	
		Signature:			-	
	<u> </u>	Date: 29/4/12				1
JHG Engineer:		Name: Tate Brammer			-	
		Signature:			-	
		Date: 20/4/12				
Client's Representative	e	Name:				
		Signature:				
		Date:				

2.1.2. Electrical Checksheets



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OXLEY WWTP

FLOOD RECOVERY ZONE 3

Pulper Area

Electrical Installation Test Sheet

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D	ocument Control							
	Project Name	Oxley Flood	Recovery Zone 3					
	Job No.	19216						
tion	Document Title	Pulper Area	Electrical Installation Test Sheet					
dentification	Associated Documents							
lde	Document Number							
	Client Reference							
	Path\File Name							
ج (Written by	C.X	Control Systems Engineer					
Authority	Authorised by	D.D	Project Manager					
4	Client Authorisation							
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Pulper Area Electrical Installation Test Sheet
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4.	Tests Summary	6
	Test Completion Acceptance	
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1. Objectives

This document describes the process of testing the electrical equipment and installation to ensure that they conform to the standards and with the design drawings, are electrically safe, function as designed and interface with the PLC controls as required.

Tests include:

- Ensuring that the correct equipment is installed as defined in the design drawings
- · Completing a point to point test of all wiring to ensure conformity with the design drawings
- Conducting a visual check to ensure conformity with Australian Standards
- Conducting a check to ensure connections are secure
- Measuring the insulation resistance of the switchboard to ensure conformance with Australian Standards

2. Equipment Requirements

The following Tools and Equipment will be needed to conduct the FAT:

- 1- Majortech MT550 insulation resistance tester
- 2- Fluke 175 multimeter, Next Test Due
- 3- Fluke 787 process meter
- 4- Safety barrier tape
- 5- Project drawings
- 6- Flashing amber light

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3. Methodology

The following steps are to be carried out on each section of the electrical equipment listed above.

- 1- Referring to the drawings, confirm that the correct equipment is installed and is placed in the correct position.
- 2- Referring to the drawings, use the multimeter to carry out point to point tests and confirm that all wiring conforms with the design drawings.
- 3- Conduct a visual check to ensure conformity with Australian Standards.
- 4- Using appropriate tools, check at least 30% of connections to ensure that connections are secure.
- 5- Using the insulation resistance tester, measure the insulation resistance of the switchboards and circuits to ensure conformance with Australian Standards.
- 6- Where required, adjust circuit breakers, motor overloads and timer to appropriate settings
- 7- Complete the documentation as inspections and tests are carried out
- 8- Ensure that all items that were disconnected for insulation resistance testing, have been reconnected.



4. Tests Summary

ELECTRICAL FITOUT	N/A	Pass	Comments
6mm SDI (Minimum)fitted to line side of			
control fuses for high fault level takeoffs		<u> </u>	
Check surge arrestor line side cabling size			
Check cable size with cable schedule		اسما	
Check cable size with rating of CB			
All control wiring ferruled as required			
All control wiring numbers and colours as per drawings			
Wiring looms to doors incorporates suitable slack			
All terminal numbers fitted			
Terminals randomly checked for tightness			
Check contactors, O/L's and CB's are correct for particular operation			
Check fuses for continuity			
Check fuses for correct current rating	-		
All indicators correct colour and voltage			
All pushbuttons correct colour			-
abels correct sizes, colours and wording			
All labels secured with screws			
All internal equipment labelled			
Ammeters and CT's correct range			
CT test block fitted			
/oltmeters correct range			
Bolts fitted to incoming terminations	-		
Phase separators and shrouds provided		/	
it fuse cartridges			
Sample check tightness of connections		V	
Il protective covers in place		/	
Il duct lid fitted		V	
Il pole fillers fitted		V	
ighting operation correct	-		
oor limit switches operational	_		
Il doors are earthed			
Il escutcheons are earthed			
.T secondary's earthed		-	-
Il transformer secondaries are earthed			
Il power supplies 0 Volts are earthed	1	7	
heck correct screen connections of analog and VSD cable		V	
djust O/L settings to motor current or minimum	1		
djust timers to correct values			
djust CB settings	+ +	V	
djust RCD settings	Grant I		
pint to point wiring check completed	 	V	
<u> </u>	+-+	-	

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			INSULATION	RESISTA	NCE T	EST	S		
Before performing ti	he in	sulation	resistance tests	s, disconi	nect or	isola	ate the MEN link, RCD	earths	and
neutrals, surge arres	stors	and any	equipment that	could be	dama	aed b	by the tests. Carry out the	ne tests	with
the test instrument or	n the	1000 Vo	olt range.		•		,	,0 10010	******
				NCE TES	TS - P	ASS (CRITERIA IS > 1 MΩ		
Red – White	OC.		White - Blue		00	МΩ	Red - Blue	00	MΩ
Red - Neutral	00	MΩ	White - Neutral		000	МΩ	Blue - Neutral	00	MΩ
Red – Earth	00	MΩ	White - Earth		~	МΩ	Blue - Earth	00	МΩ
Neutral - Earth		MΩ						1	
DISTR	RIBUT	ION INS	JLATION RESIST	TANCE TE	STS -	PASS	CRITERIA IS > 1 MΩ	1	
Red – White	æ	D MΩ	White - Blue	∞		МΩ	Red - Blue	00	MΩ
Red - Neutral	~	γ ΜΩ	White - Neutral	~		ΜΩ	Blue - Neutral	00	МΩ
Red Earth	00	ΜΩ	White - Earth	8		МΩ	Blue - Earth	00	MΩ
Neutral - Earth		MΩ							
N/A:		Pass:	YES	Init:	7.	<u>.</u>	Date: 21/5	1/12	
	Re	<u>conne</u> ct	all equipment	isolated	for the	insu	lation tests		

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5. Test Completion Acceptance

NAME	COMPANY	LIC/REG NO	SIGNATURE	DATE
J.Jordan	MPA	PGE233425		2/5/12

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6. APPENDIXES

AREA	CABLE ID	CABLE RUN FROM	CABLE RUN TO	CABLE TEST DATE	RED/WHITE	RED/BLUE	WHITE/BLUE	RED/EARTH	WHITE/EARTH	BLUE/EARTH	CONTROL CABLE MULTI- CORE	ANALOG CABLE	TEST SUMMARY	COMMENT
ribec	62010 ca	SLUCKE	SLUGGE	17/5							~			3n n/ /
	62020-CO)	Koom	SLUBE Russel Alex	11							~			pressure switch
	660-10	mac		11		~				~				pressure switch
	40-20	11		lr	~	7	~							
	620-10	ę t	11	U	V	7	~		~					
	620-70	(1		11	<u></u>	~		-	V					
	620-11	11	10	14	~	~	/		~					
	CV (20-21	11	11	(r	レ	_	V	~	L	~				
	62040	11	11	1(
	FCV 62041	11	(,	11							~			
_	FCV 62042 FCV 62028 FCV	11	15	te										
	FCU 62028	11	77	11							~			
_	66001	(1	11	le										
	-													

⁻ Rev 00

2.1.3. Control System FAT Documents



OXLEY WRP

FLOOD RECOVERY ZONE 3

Factory Acceptance Test – PLC & SCADA **Pulper Feed Pumps Anti-Bridge Feeders** CV-620-11/12 CV-620-21/22

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Do	ocument Control		
	Document Title	Factory Accep	tance Test- PLC & SCADA
ation	Document Subtitle	Oxley WRP Zo	ne3 - Pulper Feed Pumps Anti-Bridge Feeders
dentification	Document Number	MPA-19216-FA	AT
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	Path\File Name		
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Authority	Authorised by		
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1. INTRODUCTION

1.1 General

The tests described below are designed to test the control and indication of the PLC & SCADA (control system). As the test will be done with simulation, and also on the switchboard, all the conditions could not be achieved. Problems may arise while conducting the tests as described; which may necessitate conducting of further tests not described herein. Any subsequent tests or notes should be documented in the space provided.

Any abnormalities with the operation of function of any of the equipment being tested shall be noted, even if not specifically covered by the test procedure. All devices shall be checked thoroughly for correct installation. Any items that may warrant attention must be noted in the space provided on each item's test plan.

1.2 Objectives

The Objective of this document is to provide a structured and detailed methodology to allow the Testing Officer to fully and methodically test the functionality of the Oxley WRP – Sludge PLC – Pulper Pumps Anti-Bridge Feeders. In addition this document is used to record all the results that are observed during the execution of this protocol. Completion of these test sequences verifies the basic unit functionality of each inspected device as well as the higher level automation that ties together the devices as a collective as detailed.

1.3 Scope

The scope of this document is the testing of device standard operational/status aspects in the PLC/SCADA. Higher level automation of each plant module as required for the process control including process set-points and alarms will be tested on site and appropriate SAT document will be provided.

1.4 Reference Table

Name	Details
Oxley WRP FDS	Functional Description

1.5 Defect Notice

Non-conforming items should be rectified immediately if possible. If the defect is not the responsibility of the tester, then a defect notice should be provided to the appropriate person(s). A defect notice template is supplied in the next section.

A copy of the defect report shall be given to the manufacturer, supplier or subcontractor and they shall take corrective action in time for the date of re-inspection or advise in writing that the defect report is disputed and include the reason(s).

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1.6 Defect Notice Template

***	I tue	I Bet	I D. C. J. D	
Sect. No.	Insp. No.	Date	Defect Description	Corrected Date
0.	110.	30/5/12	UPDATE SCADA GRAPHIC OF ANTI-BEIDGEDO CHECK CODE FOR ALTERNATE TOGGLE. AUTO PERMISSIVE FOR OPPOSITE VALVE STATU	& Signature
		30/5/12	CHECK CONE FOR ALTERNATE TOGGLE	Wice.
		30/5/12	AUTO PERMISSIVE FOR OPPOSITE VALVE STATUS	
- 3				
_				
-				
_				
-	-			
	/ENDATIC			

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2. TEST SUMMARY

2.1 Test Method Description

The following sections describe the method of testing the system. The tests procedures are described in a numerically logical order, but do not necessarily have to be performed in this order, and several testing points can be combined and conducted at the same time.

Prior to conducting the test, it's very important to check all Electrical and Mechanical test sheet(s) and/or check list(s) that should indicate the readiness of all installed equipment. (In case the test are for installed equipment)

During the test, it's a common practice to start looking for ways that the code could be improved, and for areas that could be a source of potential problems; in order to optimize the operation — as such cannot be achieved to fullest at design and programming stages.

2.2 I/O Test:

Devices should be activated/driven to give the corresponding I/O's. When it's not possible, it should be simulated. Either way, the PLC corresponding I/O should be noted for correct configuration, tagging and description.

Alarm and fault digital statuses are fail-safe wherever applicable. Hence, input should be ON to indicate healthy status. Analogue scaling values (minimum and maximum) should be logged in the PLC and recorded here.

2.2.3 Digital Inputs:

Address	Symbol	Description	Test	Test comment
128.0	SLG01CV62011diThermFault	Thermistor Fault		
128.1	SLG01CV62011diRunning	Running Feedback		
128.2	SLG01CV62011diFCReady	Field Circuit Ready		
128.3	SLG01CV62021diThermFault	Thermistor Fault		
128.4	SLG01CV62021diRunning	Running Feedback		
128.5	SLG01CV62021diFCReady	Field Circuit Ready		

2.2.4 Digital Outputs:

Address	Symbol	Description	Test	comment
Q5.0	SLG01CV62011doRun	Run Output		
Q5.1	SLG01CV62021doRun	Run Output		

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2.3 Pulper Pump 1 Anti-Bridge Feeder CV-620-11/12

No.	Pre-condition	Action	Response	PLC Check	SCADA Check	Client	Comment
1	Device Available	Simulate a Fault	Device Unavailable	A	CHECK	13	
2	Control Supply available alarm enabled	Sim Control Supply – Unavailable	After delay time, Control Supply alarm is raised Alarm (Latched), requires Operator Reset Device Unavailable Auto Remote	1	1	JB	
3	Over Temperature alarm enabled	Sim Over Temperature - Fault	After delay time, Thermal O/L alarm is raised Alarm (Latched), requires Operator Reset	/	V	JB	
4	Field Circuit alarm enabled	Sim Drive Field Circuit - Fault	After delay time, Field Circuit alarm is raised Alarm (Latched), requires Operator Reset	/	~	JB	
5	Return to Remote, No Fault Conditions Set Fail 2 Start/Stop Timer (5s)	Manual Start Command	Running – Run Minutes increase No. of Starts Increases / Speed O/P scaled correctly	V	/	JB	
6	Set Fail 2 Start/Stop Timer (5s)	Manual Stop Command	Device Stops / Run Minutes freeze	1/	1/	78	
7	Fail 2 Start/Stop Timer: (5s)	Manual Start Command Running feedback Inactive	Failed to Start / Stop Fault after a delay time Alarm (Latched), requires Operator Reset	/		1B	
8	Fail 2 Start/Stop Timer: (5s)	Manual Stop Command Running Input Active	Failed to Start / Stop Fault after a delay time Alarm (Latched), requires Operator Reset	/	/	JB	
9							
10							
11							
12							
13							

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Note:

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2.4 Pulper Pump 2 Anti-Bridge Feeder CV-620-21/22

No.	Pre-condition	Action	Response	PLC Check	SCADA Check	Client	Comment
1	Device Available	Simulate a Fault	Device Unavailable	Cricck	CHECK	16	
2	Control Supply available alarm enabled	Sim Control Supply – Unavailable	After delay time, Control Supply alarm is raised Alarm (Latched), requires Operator Reset Device Unavailable Auto Remote	~	1	JB	
3	Over Temperature alarm enabled	Sim Over Temperature - Fault	After delay time, Thermal O/L alarm is raised Alarm (Latched), requires Operator Reset	1	1	JB	
4	Field Circuit alarm enabled	Sim Drive Field Circuit - Fault	After delay time, Field Circuit alarm is raised Alarm (Latched), requires Operator Reset	1	/	J8	
5	Return to Remote, No Fault Conditions Set Fail 2 Start/Stop Timer (5s)	Manual Start Command	Running – Run Minutes increase No. of Starts Increases / Speed O/P scaled correctly	/	1	JB	
6	Set Fail 2 Start/Stop Timer (5s)	Manual Stop Command	Device Stops / Run Minutes freeze	1		33	
7	Fail 2 Start/Stop Timer: (5s)	Manual Start Command Running feedback Inactive	Failed to Start / Stop Fault after a delay time Alarm (Latched), requires Operator Reset	1	/	DB	
8	Fail 2 Start/Stop Timer: (5s)	Manual Stop Command Running Input Active	Failed to Start / Stop Fault after a delay time Alarm (Latched), requires Operator Reset	V	~	Jb	
9							
10							
11							
12							
13							

Note:

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2.5 Automatic Control

The purpose of this section is to verify that correct function is given by all equipment in accordance with the control philosophy. It involves testing/running the equipment in Automatic Mode, including Duty/Standby control in normal and abnormal operation.

No.	Pre-condition	Action	Response	PLC Check	SCADA Check	Client	Comment
1	- All associated devices are available: CV62010/20 CV62011/12/21/22 PU62010/20 FCV62010/20 PIT62001/02 LIT62001 WIT62001 - The Diversion Hand Valves set to Pulper Feed - The level in the DWAS Storage Bin is greater than the low-low level setpoint - The Pressure in feed line 1 & 2 are greater than the low-low setpoint	- All the devices set to remote/Auto - Set Pulper Feed Control mode to Flow Control - Simulate the Actual Flow (FIT62025) less than the setpoint; - Select Line 1 as Duty	1. Sludge Feed Conveyor 1 Shall Start (If Chute Pressure is lower than low setpoint) 2. Discharge valve 1 shall be opened 3. The Pulper Feed Pump 1 and Anti-Bridge Feeder 11/12 Shall start 4. The Pulper Feed Pump 1 shall attempt to touch the Flow setpoint	Check	Check		AS PER EXISTING CODE 30/5/12
2	Same as Item 1	- Keep the actual flow at less than the flow setpoint	- The Pulper Feed Pump 1 shall reach to %100 and stay at this speed - After Flow Deviation Alarm Time Setpoint (8 Min) if the Flow Deviation is more than Deviation Setpoint (%15), Then the Flow Deviation Alarm Comes up and Stops Line one Line 2 shall start automatically				AS PEL EXISTING 30/5/12
3	Same as Item 1	Rest the Flow Deviation Alarm	- Line 2 shall Stop and Line 1 Start				AC ADOLE TO SILILIA
4	Same as Item 1	Simulate a Fault in Line 1 (Line 1 Unavailable)	- Line one shall stop and Line 2 Start	/			AS ABOVE JB 30/5/12
5	Same as Item 1	Simulate a Fault in Line 2 (Line 2 Unavailable)	- Line 2 shall stop and after Setpoint Time the Flow Deviation Alarm Come up	/	/		
6	Same as Item 1	- All the devices set to remote/Auto - Set Pulper Feed Control mode to Flow Control - Simulate the Actual Flow (FIT62025) less than the setpoint; - Select Line 2 as Duty	1. Sludge Feed Conveyor 2 Shall Start (If Chute Pressure is lower than low setpoint) 2. Discharge valve 2 shall be opened 3. The Pulper Feed Pump 2 and Anti-Bridge Feeder 21/22 Shall start 4. The Pulper Feed Pump 2 shall attempt to touch the Flow setpoint				AS PER LINE HEM NO. 1 JB 30/5/12

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Comment		Client	SCADA Check	PLC Check	Response	Action	Pre-condition	No.
2 TEM NO 1 30/5/12	AS PE	Crieck	CHECK	CHECK	- The Pulper Feed Pump 2 shall reach to %100 and stay at this speed - After Flow Deviation Alarm Time Setpoint (8 Min) if the Flow Deviation is more than Deviation Setpoint (%15), Then the Flow Deviation Alarm Comes up and Stops Line two Line 1 shall start automatically	- Keep the actual flow at less than the flow setpoint	Same as Item 1	7
BOVE JB 30/5/	AS A				- Line 1 shall Stop and Line 2 Start	Rest the Flow Deviation Alarm	Same as Item 1	8
					- Line 2 shall stop and Line 1 Start	Simulate a Fault in Line 2 (Line 2 Unavailable)	Same as Item 1	9
								10
								11
								12
								13
								14
								15
-	-10, Fi	620-	FCV-	us (P DISCHARGE VALVES STAIN CLOSED POSITION BEFO	MISSIVE ON PUMP	NEW AUTO PER	

19216 – Oxley Flood Recovery Zone 3

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2.5.1 SCADA Alarms

No.	Description	SCADA Tag	PLC Check	SCADA Check	Client	Comment
1	Pulper Pump 1 Anti-Bridge Feeders Fail To Start/Stop	ST022DWAS1CV62012dsF2Start		~	GIRCON	
2	Pulper Pump 1 Anti-Bridge Feeders Field Circuit Fault	ST022DWAS1CV62012dsFCFault	V	V		
3	Pulper Pump 1 Anti-Bridge Feeders Control Supply N/A	ST022DWAS1CV62012dsPowerOff	V	V		
4	Pulper Pump 1 Anti-Bridge Feeders Thermistor Fault	ST022DWAS1CV62012dsThermistor	V	V		
5	Pulper Pump 1 Anti-Bridge Feeders Fail To Start/Stop	ST022DWAS1CV62022dsF2Start	V	V		
6	Pulper Pump 1 Anti-Bridge Feeders Field Circuit Fault	ST022DWAS1CV62022dsFCFault	V	V		
7	Pulper Pump 1 Anti-Bridge Feeders Control Supply N/A	ST022DWAS1CV62022dsPowerOff	V	1		
8	Pulper Pump 1 Anti-Bridge Feeders Thermistor Fault	ST022DWAS1CV62022dsThermistor	1/	/		
9				7 7 7 7		
10						
11						
12						
13						
14						
15						
Note:		-				

19216 - Oxley Flood Recovery Zone 3

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2.5.2 SCADA Trends

No.	Description	SCADA Tag	PLC Check	SCADA Check	Client Check	Comment
1	ST022DWAS1CV62011dsRunning	ST022DWAS1CV62012dsRunning	V	1		
2	ST022DWAS1CV62021dsRunning	ST022DWAS1CV62022dsRunning	V	/		
3					THE ST	
4						
5						
Note						

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3. TEST COMPLETION ACCEPTANCE

NAME	POSITION	COMPANY	SIGNATURE	DATE
JANE BEECHER	COMMISSIONING ENGINEER	JHG	Jan Beeche	30/5/12
Scott Avisms	Que control sistem	Qu	Ber	30/5/12

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1.4

2.1.4. Control System SAT Documents



OXLEY WRP

FLOOD RECOVERY ZONE 3

PLC & SCADA PROGRAM UPDATING PROCEDURE
Pulper Feed Anti-Bridge Feeders

THE ENGINEERS, THE IDEAS, THE SOLUTIONS

www.mpaeng.com.au

HEAD OFFICE 221 446 IPSWICH TOWNSVILLE SYDNEY MELBOURNE Unit 3/22-24 Strathwyn St Brendale Qld 4500

Tel: 07 3881 0722

Fax: 07 3881 0723 Breakdown Service: 0411

117 Toongarra Rd Ipswich Qld 4305 14 Chaimberlane Crt Kirwan Qld 4817 8 Charles St St Marys NSW 2760 Unit 10/64 Oakover Rd Preston Vic 3072

Tel: 07 3813 7100 Tel: 07 4723 6882 Tel: 02 9623 7066 Tel: 03 9480 8006

Fax: 07 3813 7199 Fax: 07 4723 6585 Fax: 02 9623 7166 Fax: 07 9416 8591



Do	ocument Control					
	Document Title	PLC Program updating Procedure				
ion	Document Subtitle	Pupler Anti-Bridge Feeders				
Identification	Document Number	MPA-19216-PLC Program Updating Procedure				
lde	Client Reference					
	Path\File Name					
	Written by	M Garrosi	Control Systems Engineer			
Authority		P Ganjavi	Control Systems Engineer			
Auth	Authorised by	A Zahra	Engineering Manager			
	Client Authorisation					
qi	Copyright	Copyright © MPA Engineering Pty Ltd. ABN 77 011 069 533				
Ownership	Intellectual Property	MPA Engineering Pty Ltd asserts ownership of the intellectual property contained herein, and claims copyright and authorship MPA Engineering Pty Ltd has and retains all rights of ownership and use of the material herein in its on-going business.				

		Revision History					
Rev	Date	Ву	Remarks	Checked			
0.0	15 May 2012	MG					
0.1	16 May 2012	MG					
1.0	16 May 2012	MG		ВВ			

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CONTENTS

1.	Introduction4
2.	Primary Check List4
3.	PLC program Updating Procedure5
	SCADA Project Updating Procedure6
	Test Completion Details



1. INTRODUCTION

The objective of this document is to provide a structured and detailed procedure for updating PLC & SCADA program of an existing and operational system. In addition this document is used to record all the results that are observed during the execution of this Procedure.

2. PRIMARY CHECK LIST

The following items should be checked before starting the main procedure

	Item	Status	Initial	Date
1	Electrical Installation Test Sheet completed (if applicable).	V		//
2	Factory Acceptance Test Sheet completed (if applicable).	V		
3	Task Risk Assessment prepared.			
4	Site Work Permit prepared.	~		
5	Lockout Procedure completed (if applicable).	V		
6	Availability of standby system determined (If applicable).	NA		
7	List of program blocks to be replaced prepared.	V		
8	Check data communication between PLC with the other intelligent modules. Determine if PLC interruption will disturb other systems.			
9	Check for version control procedure (If applicable).			
10				
Note				



3. PLC PROGRAM UPDATING PROCEDURE

	Item	Done	Initial	Date
1	Compare the original backup (before modification) with online code to determine version compatibility and identify potential external interference issues.	1		
2	Take a full backup from online code including data blocks and system configuration.	1		
3	Check the current status of PLC and status LED's. If there is any fault, check the diagnostic buffer to identify the source of problem Take a backup from diagnostic buffer for records.	/		
4	Check the current communication status. Prepare a list of interrupted communications before downloading the new configuration.	-		
5	Check status of backup battery or UPS.	/		
6	Perform RAM to ROM command to store all current setpoints in PLC MMC.	/	MG	5-16/12
7	Shutdown the process (Site Operator).	/ ((A)	4/1/5
8	Download new hardware configuration (If applicable).	NIA	18	1010
9	Download new/modified Data Blocks and Code Blocks.	1/		
10	Remove deleted/obsolete blocks from online project.	NIA		
11	Run CPU (If it is in stop mode)	NIA		
12	Check the LED Status and check the diagnostic buffer for errors. Determine source and fix errors (if applicable).	/		
13	Check Communication Status.	-		
14	Compare modified project with online (Should be identical).	/		
15	Check the PLC code is not in test mode.	V.		
16	Confirm process setpoints in SCADA.	/		V .
17	Start the process (Site Operator).	19=		
18	Confirm the functionality of the modified part of process and any critical process.			
19				
20				
Note:	Modified blocks: Fe115, Fe220, Fe2 Fe228, Fe229, Fe Fc426 New blocks: DB243, DB244			

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4. SCADA PROJECT UPDATING PROCEDURE

	Item	Done	Initial	Date
1	Copy (Transfer) the new SCADA Program on the Server (.ctz file).	1	1	
2	In "Citect editor" /Servers/Network Addresses record the networks name and address.	NA		
3	Determine the current running project Address on the server.			
4	Run the computer wizard on the server for current project and make a note of the settings there, generally the settings will not be changed.	N/A		
5	Find and keep the current Data Folder address on the Server.	NIA		
6	Backup the running Project on the server.	/	_	
7	Make a copy of DATA folder (with date and time).	NA	(0)	11.
8	Shutdown the running project.		, May	3 6,12
9	Delete current copy of Project in Citect Explorer.	NIA	7	-/-/-
10	Restore the new Scada Program in the same address and same name as recorded in step 2.	1		
11	In "Citect editor" set the "Network addresses" same as previous.	NIA		
12	Check the Included projects they should be :bwInclude and bwGlobal , if they are present, include them.	V		
13	Compile the project.	V		
14	Run the computer wizard and confirm the settings same as recorded previously, perform modifications where required.	NA		
15	Run the project.	V.		
16	Confirm functionality is correct.	V		
17	Check the trends are recording and displaying.	/		
18	Confirm alarming system.	/		
19				
20				

19216 - Oxley Flood Recovery Zone 3

Page 6 of 7

Pulper Anti-Bridge Feeders - Factory Acceptance Testing - Procedure and Results Rev 1.0 Copyright © MPA Engineering Pty Ltd. All Rights Reserved.



5. TEST COMPLETION DETAILS

Post-Approvals					1/2-
Title	1 1	Name	Date	Signa	ture
Control S	noteune De	Laullah	m San	2012	
COMMISSIONING	ENGINEER	JANE BEECUS	R S JUNG	2012 Tare	Recelias
	300				0- 00

Page 7 of 7

Pulper Anti-Bridge Feeders - Factory Acceptance Testing - Procedure and Results Rev 1.0 Copyright © MPA Engineering Pty Ltd. All Rights Reserved.

2.2. Certificates of Compliance

耐驰(兰州)泵业有限公司 NETZSCH LANZHOU PUMPS CO.,LTD.



Add地址: 兰州高新技术产业开发区刘家滩506号

506 Liu Jiatan, Lanzhou New and High Technology Industrial Development Zone

Tel 电流 (+86) - 0931- 8555000

Fax传真: (+86) - 0931- 8552775 Post code部编: 730010

E-mail: info@netzsch.com.cn Web http://www. netzsch.com.cn

Version:0 NLP/QB-7,6-01

产品合格证明书

CERTIFICATE OF QUALITY AND FINAL INSPECTION

产品名称 Product

NEMO ® PUMP 奈莫泵

产品型号 Type

NM090BF02S12B

装配编号

Machine No:

47988

经核实,上述产品已按耐驰(兰州)泵业有限公司质量标准生产、测试、检验合格。 Herewith we confirm, that a.m. pump is manufactured, tested and inspected according to QUALITY SPECIFICATION OF NETZSCH LANZHOU PUMPS CO., LTD.

质量控制

QC

41

日期 Date 2012-3-31

Q-Pulse Id: TMS218 06/03/2013 113 of 128

耐驰(兰州)泵业有限公司 NETZSCH LANZHOU PUMPS CO.,LTD.



Add进址: 兰州高新技术产业开发区刘家滩506号

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Tel 电话: (+86) - 0931- 8555000

Fax传真: (+86) - 0931- 8552775 Post code邮编: 730010

E-mail: info@netzsch.com.cn Web http://www.netzsch.com.cn

Version:0 NLP/QB-7, 6-01

产品合格证明书

CERTIFICATE OF QUALITY AND FINAL INSPECTION

产品名称 Product

NEMO ® PUMP 奈莫泵

产品型号 Type

NM090BF02S12B

装配编号

Machine No:

47989

经核实,上述产品已按耐驰(兰州)泵业有限公司质量标准生产、测试、检验合格。 Herewith we confirm, that a.m. pump is manufactured, tested and inspected according to QUALITY SPECIFICATION OF NETZSCH LANZHOU PUMPS CO., LTD.

质量控制 QC 心質

日期 Date 2012-3-31

Quality pays for Itself

Q-Pulse ld: TMS218 06/03/2013 114 of 128

Flow Calibration with Adjustment

40074332-2684414

52740842

Purchase order number

AU-3004769169-20 / Endress+Hauser Flowtec AG

Order N°/Manufacturer

50P25-EA0A1AA0KFAH

Order code

PROMAG 50 P DN25

Transmitter/Sensor

EC012420000

Serial Nº

FIT-625-005

Tag Nº

TOD	/ 5	
H('P.	-6 F	١
T CIT	-U.L	,

Calibration rig

2.45437 1/s

 $(\triangleq 100\%)$

Calibrated full scale

Service interface

Calibrated output

0.7426

Calibration factor

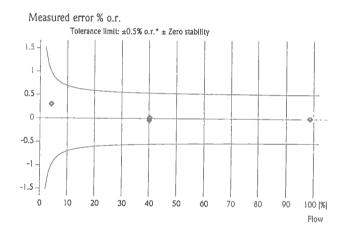
10

Zero point

27.7 °C

Water temperature

	Flow	Flow [1/s]	Duration [s]	V target	V meas.	∆ o.r.* [%]	
	4.0	0.098	60.1	5.9180	5.9362	0.31	
	40.0	0.983	60,1	59.089	59.070	-0.03	ŀ
	40.2	0.987	60.1	59.362	59.373	0.02	
	98.8	2.42	60.2	145.843	145.857	0.01	
ĺ	_	-	-	-	_	-	
	-	-	-	-	_	_	
	-	-	-	-	-	-	
	-	-	-	-	-	-	
	-	-	-	-	-	-	
	-	-	-	-	_	-	
'n	o.r.: of rate						



For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics.

Traceability to the national standard for all test instruments used for the calibration is guaranteed.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

16/12/2011
Date of calibration

Balaji Kallepwar

Operator

Certified acc. to ISO 9001

Page 1 / 1

Parameter Setting

40076544-2684414

52740842

Purchase order number

3004769169-20 / Endress+Hauser Flowtec AG

Order N°/Manufacturer

50P25-EA0A1AA0KFAH

Order code

EC012420000

Serial Nº

PROMAG 50 P

Transmitter/Sensor

DN25

Nominal diameter

FIT-625-005

Tag Nº

The below parameters are set according to your order.

Please refer to the Operating Manual for any parameters not mentioned.

Communication type

Device software

Device revision

Units

Unit volume flow

Unit volume

User interface

Assign line 1

Assign line 2

Totalizer

Unit volume totalizer 1

Assign totalizer 1

Unit volume totalizer 2

Assign totalizer 2

PROFIBUS PA

V3.06.01

ID 0x1525

dm³/min dm³

Volume flow

Totalizer 1

 dm^3

Volume flow

dm³

Volume flow

16/12/2011

Date Endress+Hauser Flowtec (India) Pvt. Ltd. M-171 - M-176, Waluj MIDC Aurangabad - 431 136, India

Flow Calibration with Adjustment

40074694-2684411

52740842 Purchase order number AU-3004769169-70 / Endress+Hauser Flowtec AG Order Nº/Manufacturer 50W2F-UD0B1AK2KAAH Order code PROMAG 50 W DN250

Transmitter/Sensor

EC012120000

Serial Nº

FIT-620-25

Tag Nº

*o.r.: of rate

Flow [%]	Flow [I/s]	Duration [s]	V target	V meas.	Δ o.r.* [%]
4.0	8.88	120.1	1064.97	1068.61	0.34
44.4	98.1	60.1	5893.20	5894.36	0.02
44.5	98.1	60.1	5894.02	5892.85	-Q.02
98.8	218.2	60.1	13102.6	13111.1	0.06
-	-	-	_	-	-
-	_	- i	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	_	-
-	-	-	-	-	- [

FCP-7.1.D		
Calibration rig		
220.8 l/s		(≙ 100%)
Calibrated full scale		
Service interface	382-	
Calibrated output,		
1.2260	40	
Calibration factor		
2		
Zero point		
29.4 °C		
Water temperature		

Meası	ired er	ror % (o.r.							
	Tole	erance III	nIt: ±0.2	% о.г.* :	± Zero st	ability				
1.5							1	İ		1
0.5	1						j			
0.5	. `	-							_ [İ
0	+		-							•
-0.5 -										
-1 -								İ		
-15-										
0	10	20	30	40	50	60	70	80	90	100 [%]
										Flow

For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics.

Traceability to the national standard for all test instruments used for the calibration is guaranteed.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

23/12/2011 Date of calibration

Balaji Kallepwar Operator Certified acc. to ISO 9001

Parameter Setting

40076944-2684411

52740842

Purchase order number

3004769169-70 / Endress+Hauser Flowtec AG

Order N°/Manufacturer

50W2F-UD0B1AK2KAAH

Order code

EC012120000

Serial Nº

PROMAG 50 W

Transmitter/Sensor

DN250

Nominal diameter

F1T-620-25

Tag Nº

The below parameters are set according to your order.

Please refer to the Operating Manual for any parameters not mentioned.

Communication type

Device software

Device revision

Units

Unit volume flow

Unit volume

User interface

Assign line 1

Assign line 2

Totalizer

Unit volume totalizer 1

Assign totalizer 1

Unit volume totalizer 2

Assign totalizer 2

PROFIBUS PA

V3.06.01

ID 0x1525

m³/hr

 m^3

Volume flow

Totalizer 1

 m^3

Volume flow

 m^3

Volume flow

23/12/2011

Endress+Hauser Flowtec (India) Pvt. Ltd. M-171 - M-176, Walui MIDC Aurangabad - 431 136, India

Flow Calibration with Adjustment

40074514-2684413

52740842 Purchase order number AU-3004769169-30 / Endress+Hauser Flowtec AG Order N°/Manufacturer 50P50-E50A1AK2KAAH

Order code

PROMAG 50 P DN50

Transmitter/Sensor

EC012320000

Serial Nº

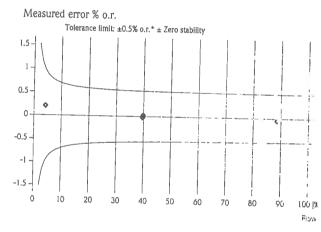
FIT-620-35

Tag N°

FCP-0.D	
Calibration rig	
9.81748 l/s	(≙ 100%)
Calibrated full scale	The second secon
Service interface	
Calibrated output	
0.8727	
Calibration factor	
8	
Zero point	
27.5 °C	
Water temperature	

Flow [%]	Flow [I/s]	Duration [s]	V target [1]	V meas. [!]	△ o.r.* [%]	
4.1	0.399	60.1	23.983	24.033	0.21	
39,6	3.89	30.1	117.142	117.118	-0.02	
39.7	3.90	30.1	117.509	117.542	0.03	
88.7	8.71	30.1	262.387	262.281	-0.04	
_	~	-	-	-	_	
-	-	-	-	_	_	
-	-	~	~	-	_	
-	-	-	_	~	_	
-	-	-	-	-	_	
-	~	-	-	-	~	

*o.r.: of rate



For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics.

Traceability to the national standard for all test instruments used for the calibration is guaranteed.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

20/12/2011 Date of calibration

Balaji Kallepwar Operator

Certified acc. to ISO 9001



Parameter Setting

40076743-2684413

52740842

Purchase order number

3004769169-30 / Endress+Hauser Flowtec AG

Order Nº/Manufacturer

50P50-E50A1AK2KAAH

Order code

EC012320000

Serial Nº

PROMAG 50 P

Transmitter/Sensor

DN50

Nominal diameter

FIT-620-35

Tag Nº

The below parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

Communication type

Device software

Device revision

PROFIBUS PA V3.06.01 ID 0x1525

Units

Unit volume flow

Unit volume

dm³/min dm³

User interface

Assign line 1

Assign line 2

Volume flow Totalizer 1

Totalizer

Unit volume totalizer 1

Assign totalizer 1

Unit volume totalizer 2

Assign totalizer 2

dm³

Volume flow

 dm^3

Volume flow

20/12/2011

Date

Endress+Hauser Flowtec (India) Pvt. Ltd. M-171 - M-176, Waluj MIDC Aurangabad - 431 136, India Endress+Hauser India Autom.Instrum. M-192, MIDC, Walui Aurangabad - 431136 India

Final Inspection Report Endprüfprotokoll

The manufacturer confirms that all measuring equipment used to assure the quality of the products has been calibrated and is traceable to national (e.g. DKD, NIST, NABL, ...) and international standards.

Der Hersteller bestätigt, dass die zu Qualitätsprüfungen des Erzeugnisses eingesetzten Messmittel gültig kalibriert waren und auf nationale (z.B. DKD, NIST, NABL, ...) bzw. internationale Normale rückführbar sind.

Cerabar M

TAG number Messstellen-Nummer PIT-620-01

PMC51-AA31JI1PGBAFJA+Z1 Gerätetyp Device type Serial number Seriennummer EC001221128 Sensor limits Sensor-Messgrenzen -1...10 bar Adjusted measuring range Eingestellter Messbereich 0...10 bar Maximum linearity error Maximal zulässiger Linearitätsfehler + 0.15% PROFIBUS PA Electronic type Elektronik-Tvp 01.00.00 Software version Softwareversion

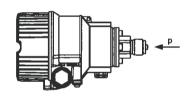
Endress + Hauser PTY, LTD. Unit 8, north RydeLink

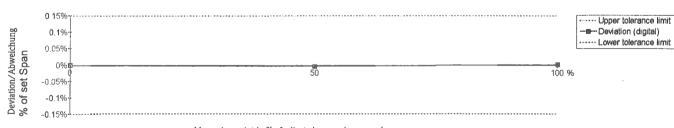
Customer number Kundennummer Auftragsnummer des Kunden 63/52740842/45154173 Customer order number Kommissionsnummer 55016251000110 Sales order number Auftragsbestätigungsnr. 52740842/0110 Order confirmation no.

Ambient temperature Umgebungs-Temperatur 27.1°C (± 1 °C) Ambient humidity Umgebungs-Luftfeuchte 34.1 %rel.F (± 10 %rel.F) Ambient pressure Umgebungs-Luftdruck 954.4 mbar (± 0.2 mbar) Inspection according to fix point method IEC 60770. Prüfung nach Grenzpunktmethode gemäß IEC 60770.

Measuring results Messergebnisse Reference Deviation Deviation Measuring Device Current Current point pressure output (digital) nominal value output current output (IOut calculated) (digital readout) (analog) (analog) (p Ref.) Druck des Messpunkt Messwert Abweichung Sollwert Istwert Abweichung Vergleichsdes Prüflings (digital) Stromausgang Stromausgang Stromausgang normales (Digitalwert) (analog) (analog) (IOut berechnet) (P Ref.) % bar % of Span mA mΑ 0 0.00010 0.00009 -0.00014 50 4.95590 4.95557 -0.00326 100 9.88720 9.88739 0.00187

Test orientation Prüflage





Measuring point in % of adjusted measuring range/ Messpunkt in % vom eingestellten Messbereich

At the time of verification, the measuring points of the device indicated above were within tolerance and in compliance to the published valid technical specification.

Das Gerät entsprach zum Zeitpunkt der Prüfung unter den angegebenen Bedingungen an den aufgeführten Messpunkten den gültigen technischen Spezifikationen.

TI 436P

Geprüft durch/Operator Prüfdatum/Date of inspection 210802 20. Dec 2011



People for Process Automation

71089244/250002797-C

- End of document-

Q-Pulse Id: TMS218 06/03/2013 121 of 128 Endress+Hauser India Autom.Instrum. M-192, MIDC, Waluj Aurangabad - 431136 India

Final Inspection Report Endprüfprotokoll

The manufacturer confirms that all measuring equipment used to assure the quality of the products has been calibrated and is traceable to national (e.g. DKD, NIST, NABL, ...) and international standards.

Der Hersteller bestätigt, dass die zu Qualitätsprüfungen des Erzeugnisses eingesetzten Messmittel

gültig kalibriert waren und auf nationale (z.B. DKD, NIST, NABL, ...) bzw. internationale Normale rückführbar sind. Cerabar M Messstellen-Nummer TAG number

PMC51-AA31JI1PGBAFJA+Z1 Gerätetyp Device type EC001321128 Seriennummer Serial number -1...10 bar Sensor-Messgrenzen Sensor limits 0...10 bar Eingestellter Messbereich Adjusted measuring range ± 0.15% Maximal zulässiger Linearitätsfehler Maximum linearity error PROFIBUS PA Elektronik-Typ Electronic type 01.00.00 Softwareversion Software version

Endress + Hauser PTY LTD Unit 8 north RydeLink

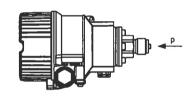
Liluioss · Hausci i II. Lil	7. Offic O, Horar reydolling	
Customer number	Kundennummer	
Customer order number	Auftragsnummer des Kunden	63/52740842/45154173
Sales order number	Kommissionsnummer	55016251000110
Order confirmation no.	Auftragsbestätigungsnr.	52740842/0110
Ambient temperature	Umgebungs-Temperatur	27.3°C (± 1 °C)
Ambient humidity	Umgebungs-Luftfeuchte	33.8 %rel.F (± 10 %rel.F)
Ambient pressure	Umgebungs-Luftdruck	954.0 mbar (± 0.2 mbar)
Inspection according to fix point method IEC 60770.	Prüfung nach Grenzpunktmethode gemäß IEC 60770.	

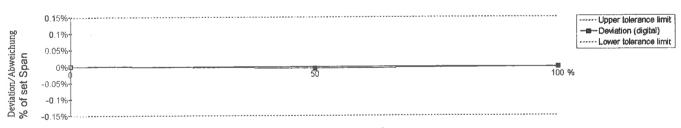
Measuring res	ults		Messergebnisse			
Measuring point	Reference pressure (p _{Ref.})	Device output (digital readout)	Deviation (digital)	Current nominal value (I _{Out} calculated)	Current output (analog)	Deviation current output (analog)
Messpunkt	Druck des Vergleichs- normales (p _{Ref.})	Messwert des Prüflings (Digitalwert)	Abweichung (digital)	$\begin{array}{c} \text{Sollwert} \\ \text{Stromausgang} \\ (l_{Out} \text{ berechnet}) \end{array}$	Istwert Stromausgang (analog)	Abweichung Stromausgang (analog)
%	bar	bar	% of Span	mA	mA	%
0	0.00010	0.00022	0.00121			
50	4.94500	4.94444	-0.00561			
100	9.90200	9.90196	-0.00036			

Prüflage

Test orientation

PIT-620-02





Measuring point in % of adjusted measuring range/ Messpunkt in % vom eingestellten Messbereich

At the time of verification, the measuring points of the device indicated above were within tolerance and in compliance to the published valid technical specification.

Das Gerät entsprach zum Zeitpunkt der Prüfung unter den angegebenen Bedingungen an den aufgeführten Messpunkten den gültigen technischen Spezifikationen.

TI 436P

Geprüft durch/Operator Prüfdatum/Date of inspection 210802 20. Dec 2011



People for Process Automation

Endress+Hauser India Autom.Instrum. M-192. MIDC. Waluj Aurangabad - 431136 India

Final Inspection Report Endprüfprotokoll

The manufacturer confirms that all measuring equipment used to assure the quality of the products has been calibrated and is traceable to national (e.g. DKD, NIST, NABL, ...) and international standards.

Der Hersteller bestätigt, dass die zu Qualitätsprüfungen des Erzeugnisses eingesetzten Messmittel gültig kalibriert waren und auf nationale (z.B. DKD, NIST, NABL, ...) bzw. internationale Normale rückführbar sind.

Cerabar M

PIT-620-25 TAG number Messstellen-Nummer PMC51-AA31JI1PGBAFJA+Z1 Gerätetyp Device type EC001421128 Seriennummer Serial number -1...10 bar Sensor-Messgrenzen Sensor limits 0...10 bar Eingestellter Messbereich Adjusted measuring range + 0.15 % Maximal zulässiger Linearitätsfehler Maximum linearity error PROFIBUS PA Elektronik-Typ Electronic type 01.00.00 Softwareversion Software version

Endress + Hauser PTY, LTD. Unit 8, north RydeLink

Customer number	Kundennummer	
Customer order number	Auftragsnummer des Kunden	63/52740842/45154173
Sales order number	Kommissionsnummer	55016251000110
Order confirmation no.	Auftragsbestätigungsnr.	52740842/0110
Ambient temperature	Umgebungs-Temperatur	27.3°C (± 1 °C)

Ambient temperature Umgebungs-Temperatur 27.3°C (± 1°C)

Ambient humidity Umgebungs-Luftfeuchte 33.8 %rel.F (± 10 %rel.F)

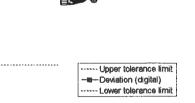
Ambient pressure Umgebungs-Luftdruck 954.0 mbar (± 0.2 mbar)

Inspection according to fix point method IEC 60770.

Measuring resu	ılts	Messergebnisse				
Measuring point	Reference pressure (p _{Ref.})	Device output (digital readout)	Deviation (digital)	Current nominal value (I _{Out} calculated)	Current output (analog)	Deviation current output (analog)
Messpunkt	Druck des Vergleichs- normales (p _{Ref.})	Messwert des Prüflings (Digitalwert)	Abweichung (digital)	Sollwert Stromausgang (l _{Out} berechnet)	Istwert Stromausgang (analog)	Abweichung Stromausgang (analog)
%	bar	bar	% of Span	mA	mA	%
0	0.00010	0.00007	-0.00027			
50	4.94530	4.94492	-0.00382			
100	9.90310	9.90319	0.00089			

)-----**Iva**

Test orientation Prüflage



Measuring point in % of adjusted measuring range/ Messpunkt in % vom eingestellten Messbereich

At the time of verification, the measuring points of the device indicated above were within tolerance and in compliance to the published valid technical specification.

Das Gerät entsprach zum Zeitpunkt der Prüfung unter den angegebenen Bedingungen an den aufgeführten Messpunkten den gültigen technischen Spezifikationen. TI 436P

—**≡** 100 %

Geprüft durch/Operator Prüfdatum/Date of inspection 210802 20. Dec 2011

Endress+Hauser 🖽

People for Process Automation

Deviation/Abweichung % of set Span

0.1%

0.05%

-0.05%

CALIBRATION REPORT

Acceptance Test Certificate 3.1 according to EN 10204

Report on:

PRESSURE TRANSMITTER

Customer:

JOHN HOLLAND PTY LTD

Certificate No:

WS121203

Description:

Make:

ENDRESS+HAUSER

Date Tested:

24-May-12

Type:

PMC41

Date Issued: 24-May-12

Reference Equipment used:

Serial No:

78017601020

SO No:

192254

PWT No:

124091

Serial No:

5422095

Item No: Scale Range: 814.1205082 0/1000 kPa

Serial No:

N/A

Scale Interval:

0.1 kPa

WIKA

Pressure and Temperature Measurement

ABN 49 004 465 936

WIKA Australia Pty Ltd Unit K, 10-16 South Street Rydalmere NSW 2116 Australia

Tel 02 8845 5222 Fax 02 9684 4767 www.wika.com.au

	DEVICE UNDER TEST					
TRUE	INCR	EASING	DECREASING			
PRESSURE	INDICATED	CORRECTION	INDICATED	CORRECTION		
kPa	kPa	kPa	kPa	kPa		
0.0	0.0	+0.0	0.0	+0.0		
250.0	249.7	+0.3	249.7	+0.3		
500.0	499.6	+0.4	499.5	+0.5		
750.0	749.6	+0.4	749.6	+0.4		
1000.0	1000.0	+0.0	1000.0	+0.0		

Conditions of Test:

- 1. Instrument test position: Horizontal
- 2. Medium of test Nitrogen
- 3. Ambient temperature during test 20°C ±2°C

Comments:

TRANSMITTER COMMUNICATES WITH PROFIBUS PA NETWORK.

TAG # PIT62002

Tested by:

MUSTAQ ALI

The tests, calibrations or measurements covered by this document are traceable to Australian National Standards of Measurement.

A Calibration Report may not be published except in full unless permission for the publication of an approved abstract has been obtained from the Secretary, WIKA Australia Pty Ltd.

Q-Pulse Id: TMS218

CALIBRATION REPORT

Acceptance Test Certificate 3.1 according to EN 10204

Report on:

PRESSURE TRANSMITTER

Customer:

JOHN HOLLAND PTY LTD

Certificate No:

WS121204

Description:

Make:

ENDRESS+HAUSER

Date Tested: Date Issued:

24-May-12 24-May-12

Type:

PMC41

Serial No: SO No:

192254

78017701020

PWT No:

124091

Serial No:

5422095

Item No: Scale Range:

0/1000 kPa

814.1205082

Serial No:

N/A

Reference Equipment used:

Scale Interval:

0.1 kPa

Pressure and **Temperature Measurement**

ABN 49 004 465 936

WIKA Australia Pty Ltd Unit K, 10-16 South Street Rydalmere NSW 2116

Australia

Tel 02 8845 5222 Fax 02 9684 4767 www.wika.com.au

	DEVICE UNDER TEST					
TRUE	INCR	EASING	DECREASING			
PRESSURE	INDICATED	CORRECTION	INDICATED	CORRECTION		
kPa	kPa	kPa	kPa	kPa		
0.0	0.0	+0.0	0.0	+0.0		
250.0	249.7	+0.3	249.7	+0.3		
500.0	499.7	+0.3	499.6	+0.4		
750.0	749.7	+0.3	749.7	+0.3		
1000.0	1000.0	+0.0	1000.0	+0.0		

Conditions of Test:

1. Instrument test position: Horizontal

2. Medium of test Nitrogen

3. Ambient temperature during test 20°C ±2°C

Comments:

TRANSMITTER COMMUNICATES WITH PROFIBUS PA NETWORK.

TAG # PIT62001

Tested by:

MUSTAQ ALI

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Q-Pulse Id: TMS218

CERTIFICATE OF COMPLIANCE WITH ORDER DIN50049 EN10204 – 2.2



WIKA Australia Pty Ltd, Private Mail Bag 88, Rydalmere NSW 2116

Customer:

JOHN HOLLAND PTY LTD

Order No.:

8542/000227

Certificate No.:

189929SP/01/12

Page:

1 of 1

Date:

26/04/2012 189929

WIKA reference : Quantity :

1

Type: Range:

12SHDM5C

3.4/10.3 BAR

Pressure and Temperature Measurement WIKA Australia Pty Ltd

ABN 49 004 465 936

Unit N, 10-16 South Street Rydalmere NSW 2116

Australia

Tel 02 8845 5222 Fax 02 9684 4767 www.wika.com.au sales@wika.com.au

Description: 90.27 WIKA DIAPHRAGM SEAL FLANGE TYPE DN 2" CLASS 150LB 316L SS & FIT/FILL TO CUSTOMER PRESSURE SWITCH; SET AT 6 BAR RISING

This is to certify that above measuring instruments / systems have been manufactured in compliance with approved technical standards. Only inspection – passed materials have been used. Ordering specifications are complied with.

Instruments have been tested and set at 6 bar rising pressure.

Quality inspection was successfully passed.

S/N:K1691777-1

WIKA Australia PTY LTD Testing authority

Luckmer Pineda



CERTIFICATE OF COMPLIANCE WITH ORDER DIN50049 EN10204 - 2.2



WIKA Australia Pty Ltd, Private Mail Bag 88, Rydalmere NSW 2116

Customer:

JOHN HOLLAND PTY LTD

Order No.:

8542/000227 189929SP/04/12

Certificate No.: Page :

1 of 1

Date:

16/04/2012

WIKA reference:

189929

Quantity: Type:

12SHDM5C

Range:

6.9/24.1 BAR

Pressure and Temperature Measurement WIKA Australia Pty Ltd

ABN 49 004 465 936

Unit N, 10-16 South Street Rydalmere NSW 2116

Australia

Tel 02 8845 5222 Fax 02 9684 4767 www.wika.com.au sales@wika.com.au

Description: 90.27 WIKA DIAPHRAGM SEAL FLANGE TYPE DN 2" CLASS 150LB 316L SS & FIT/FILL TO CUSTOMER PRESSURE SWITCH; SET AT 10 BAR RAISING

This is to certify that above measuring instruments / systems have been manufactured in compliance with approved technical standards. Only inspection – passed materials have been used. Ordering specifications are complied with.

Instruments have been tested and set at 10 bar raising pressure.

Quality inspection was successfully passed.

S/N:K1691779-2 Tag No: N/A

WIKA Australia PTY LTD Testing authority

Luckmer Pineda



3. Operation & Maintenance Manuals

3.1.	Netzsch Nemo Pump (PU-620-10)	VM151
3.2.	Netzsch Nemo Pump (PU-620-20)	VM151
3.3.	Netzsch Nemo Pump (NMBF) General Operating & Maintenance Instructions (hard copy only)	VM151
3.4.	Endress + Hauser Flowmeter (Promag 50)	VM151
3.5.	Endress + Hauser Pressure Transmitter (Cerabar M)	VM151
3.6.	United Electric Pressure Switch (12 Series)	VM151
3.7.	IFM Proximity Sensor (EVC005 Cable)	VM151

Click relevant section above to open the corresponding vendor manual.