

Project: Malagrotta 1

Client: CO.LA.RI. - E. Giovi s.r.l.

Note:

Subject: Equipments list

Doc Number: MG1-MEC-AA0-003

Revision: 01

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Client approval:

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
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Functional Area: **CR2 => Solid Combustible handling – Cranes**

CR2-1J0-000	BRIDGECRANE								CR2-001
CR2-1H1-000	BRIDGECRANE -BRIDGE-					CPM Carnovali			CR2-001
CR2-1H2-000	BRIDGECRANE -WAGON-								CR2-001
CR2-1H3-000	BRIDGECRANE -HOIST-								CR2-001
CR2-1H4-000	BRIDGECRANE -GRAB-								CR2-001
CR2-3J0-000	CONVEYOR								CR2-001
CR2-3H2-000	DISTRIBUTION CONVEYOR					Sorain			CR2-001
CR2-3H3-000	CONVEYOR WAGON								CR2-001
CR2-3H4-000	DISCHARGE CONVEYOR								CR2-001

Functional Area: **CR3 => Solid Combustible handling – Cochlear feeders**

CR3-1H1-000	SCREW TYPE FEEDER HIGH					Di Matteo			CR3-001
CR3-1M1-000	FEEDER MOTOR								CR3-001
CR3-1H2-000	SCREW TYPE FEEDER HIGH								CR3-001
CR3-1M2-000	FEEDER MOTOR								CR3-001
CR3-1H3-000	SCREW TYPE FEEDER HIGH								CR3-001
CR3-1M3-000	FEEDER MOTOR								CR3-001
CR3-1H4-000	SCREW TYPE FEEDER HIGH								CR3-001
CR3-1M4-000	FEEDER MOTOR								CR3-001
CR3-1H5-000	SCREW TYPE FEEDER HIGH								CR3-001
CR3-1M5-000	FEEDER MOTOR								CR3-001
CR3-2H1-000	SCREW TYPE FEEDER MIDDLE					Di Matteo			CR3-001
CR3-2M1-000	FEEDER MOTOR								CR3-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
CR3-2H2-000	FEEDER ROTARY POCKET					DMN			CR3-001
CR3-2M2-000	FEEDER MOTOR								CR3-001
CR3-2H3-000	FEEDER ROTARY POCKET					DMN			CR3-001
CR3-2M3-000	FEEDER MOTOR								CR3-001
CR3-3H1-000	SCREW TYPE FEEDER LOW					Di Matteo			CR3-001
CR3-3M1-000	FEEDER MOTOR								CR3-001
Functional Area: DL1 => Compressed air production									
DL1-0F9-000	OIL FILTER					Atlas Copco			DL1-001
DL1-1A1-000	AIR COMPRESSION STATION	550Nm³/h 8bar 55 KW	V02			Atlas Copco			DL1-001
DL1-2A1-000	AIR COMPRESSION STATION	550Nm³/h 8bar 55 KW	V02			Atlas Copco			DL1-001
DL1-3A1-000	AIR COMPRESSION STATION	550Nm³/h 8bar 55 KW	V02			Atlas Copco			DL1-001
DL1-4A1-000	AIR COMPRESSION STATION	200÷750Nm³/h 8bar 55 KW	V01			Atlas Copco			DL1-001
DL1-5F3-000	AIR FILTER					Atlas Copco			DL1-001
DL1-6F1-000	AIR FILTER					Atlas Copco			DL1-001
DL1-6A2-000	AIR DRYER					Atlas Copco			DL1-001
DL1-6F3-000	AIR FILTER					Atlas Copco			DL1-001
DL1-6F5-000	AIR FILTER					Atlas Copco			DL1-001
DL1-6A6-000	AIR DRYER					Atlas Copco			DL1-001
DL1-6F7-000	AIR FILTER					Atlas Copco			DL1-001
Functional Area: DL2 => Instrument air production									
DL2-1F1-000	AIR FILTER					Atlas Copco			DL2-001
DL2-1A2-000	AIR DRYER					Atlas Copco			DL2-001
DL2-1F3-000	AIR FILTER					Atlas Copco			DL2-001
DL2-1F5-000	AIR FILTER					Atlas Copco			DL2-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
DL2-1A6-000	AIR DRYER					Atlas Copco			DL2-001
DL2-1F7-000	AIR FILTER					Atlas Copco			DL2-001
DL2-2A2-000A	INSTRUMENT AIR BOOSTER	280-140Nm³/h 8-16bar	V03			Atlas Copco (Festo)			DL2-001
DL2-2A2-000B	INSTRUMENT AIR BOOSTER	280-140Nm³/h 8-16bar	V03			Atlas Copco (Festo)			DL2-001
DL2-2A4-000	INSTRUMENT AIR EMERGENCY VESSEL	25m³ 16bar PN20				Sabawerk			DL2-001
DL2-2A5-000	INSTRUMENT AIR EMERGENCY VESSEL	25m³ 16bar PN20				Sabawerk			DL2-001
Functional Area: GC1 => Syngas compressors									
GC1-1M1-000	COMPRESSOR MOTOR								GC1-001
GC1-1V1-000	SYNGAS COMPRESSOR	8000Nm³/h 1bar DN350 - VENT DN250				RKR			GC1-001
GC1-2M1-000	COMPRESSOR MOTOR								GC1-001
GC1-2V1-000	SYNGAS COMPRESSOR	8000Nm³/h 1bar DN300				RKR			GC1-001
GC1-3M1-000	COMPRESSOR MOTOR								GC1-001
GC1-3V1-000	SYNGAS COMPRESSOR	8000Nm³/h 1bar DN300				RKR			GC1-001
GC1-9V0-000A	COMPRESSOR ROOM VENTILATOR	SEE VENTILATION DRAWING							GC1-001
GC1-9V0-000B	COMPRESSOR ROOM VENTILATOR	SEE VENTILATION DRAWING							GC1-001
Functional Area: GD1 => Syngas treatment – De-dusting scrubber									
GD1-1B1-000	De-DUSTING SCRUBBER					EWK			GD1-001
GD1-1M2-000A	PUMP MOTOR								GD1-001
GD1-1P2-000A	De-DUSTING SCRUBBER PUMP	216m³/h 4bar 41°C DN150/125	P03	FRIATEC	RCNKU 125/400	Glynwed	Impeller: PP	Impeller Ø350	GD1-001
GD1-1M2-000B	PUMP MOTOR								GD1-001
GD1-1P2-000B	De-DUSTING SCRUBBER PUMP	216m³/h 4bar 41°C DN150/125	P03	FRIATEC	RCNKU 125/400	Glynwed	Impeller: PP	Impeller Ø350	GD1-001
GD1-1W3-000A	De-DUSTING SCRUBBER HEAT EXCHANGER	Tp: 41/35 °C - Ts: 33/38 °C DN150	W03	GEA	NT150L B-10	GEA Ecoflex	Plate: 254 SMO		GD1-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
GD1-1W3-000B	De-DUSTING SCRUBBER HEAT EXCHANGER	Tp: 41/35 °C - Ts: 33/38 °C DN150	W03	GEA	NT150L B-10	GEA Ecoflex	Plate: 254 SMO		GD1-001
Functional Area: GE1 => Security Stack – Burners, Air and Syngas									
CR1-9F1-000	RDF-BUNKER AIR FILTER					?			GE1-001
GE1-0A1-000	SECURITY STACK					Presezzi			GE1-001
GE1-1A1-000	SECURITY STACK MAIN BURNER					Friedrich Ley GmbH			GE1-001
GE1-1A2-000	SECURITY STACK MAIN BURNER					Friedrich Ley GmbH			GE1-001
GE1-1A3-000	SECURITY STACK MAIN BURNER					Friedrich Ley GmbH			GE1-001
GE1-1A4-000	SECURITY STACK MAIN BURNER					Friedrich Ley GmbH			GE1-001
GE1-2A1-000	SECURITY STACK PILOT BURNER					Friedrich Ley GmbH			GE1-001
GE1-2A2-000	SECURITY STACK PILOT BURNER					Friedrich Ley GmbH			GE1-001
GE1-2A3-000	SECURITY STACK PILOT BURNER					Friedrich Ley GmbH			GE1-001
GE1-2A4-000	SECURITY STACK PILOT BURNER					Friedrich Ley GmbH			GE1-001
GE1-3M1-000	FAN MOTOR								GE1-001
GE1-3V1-000	SECURITY STACK MAIN BURNER FAN	8900Nm³/h 44mbar							GE1-001
GE1-3M2-000	FAN MOTOR								GE1-001
GE1-3V2-000	SECURITY STACK MAIN BURNER FAN								GE1-001
GE1-3M3-000	FAN MOTOR								GE1-001
GE1-3V3-000	SECURITY STACK MAIN BURNER FAN								GE1-001
GE1-3M4-000	FAN MOTOR								GE1-001
GE1-3V4-000	SECURITY STACK MAIN BURNER FAN								GE1-001
GE1-9M1-000	FAN MOTOR								GE1-001
GE1-9V1-000	SECURITY STACK FAN	70000Nm³/h 5mbar				Reitz			GE1-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
Functional Area: GQ1 => Syngas treatment – Quench cooler									
GQ1-1A1-000	QUENCH					GEA Jet Pumps			GQ1-001
GQ1-1A2-000	QUENCH JOINT								GQ1-001
GQ1-1A3-000	SYNGAS CYCLONE SEPARATOR								GQ1-001
GQ1-1A4-000	DISCHARGE TANK					?			GQ1-001
GQ1-1V5-000	QUENCH JET PUMP					Koerting			GQ1-001
Functional Area: GQ2 => Syngas treatment – Quench water circuit									
GQ2-1B1-000	QUENCH WATER SEDIMENTATION					Plasticon			GQ2-001
GQ2-1M2-000A	PUMP MOTOR								GQ2-001
GQ2-1P2-000A	QUENCH WATER PUMP	212m³/h 4.6bar 85°C DN150/125	P01	FRIATEC	RCNKU 125/400	Glynwed	Impeller: PVDF	Impeller Ø380	GQ2-001
GQ2-1M2-000B	PUMP MOTOR								GQ2-001
GQ2-1P2-000B	QUENCH WATER PUMP	212m³/h 4.6bar 85°C DN150/125	P01	FRIATEC	RCNKU 125/400	Glynwed	Impeller: PVDF	Impeller Ø380	GQ2-001
GQ2-1P3-000	QUENCH EMERGENCY PUMP	22m³/h DN80	P81	SANDPIPER	S30 Metallic	Asco	Wet parts: Alloy C		GQ2-001
GQ2-1P4-000	QUENCH EMERGENCY PUMP	22m³/h DN80	P81	SANDPIPER	S30 Metallic	Asco	Wet parts: Alloy C		GQ2-001
GQ2-2M2-000	PUMP MOTOR								GQ2-001
GQ2-2P2-000	QUENCH SLUDGE PUMP	DN65	P51	LAROX	LPP 65	Larox			GQ2-001
GQ2-2P3-000	QUENCH SLUDGE EMERGENCY PUMP	DN80	P81	SANDPIPER	S30 Metallic	Asco	Wet parts: Alloy C		GQ2-001
GQ2-2W4-000A	QUENCH SLUDGE HEAT EXCHANGER	DN80	W07			Ecoflex			GQ2-001
GQ2-2W4-000B	QUENCH SLUDGE HEAT EXCHANGER	DN80	W07			Ecoflex			GQ2-001
Functional Area: GQ3 => Syngas treatment – Acid water scrubber									
GQ3-1B1-000	ACID SCRUBBER	%%C2500				Gea Jet Pumps			GQ3-001
GQ3-1M2-000A	PUMP MOTOR								GQ3-001

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GQ3-1P2-000A	ACID SCRUBBER PUMP	612m³/h 5.4bar DN250/200	P02	FRIATEC	RCNKU 200/400	<i>Glynwed</i>	Impeller: PP		GQ3-001
GQ3-1M2-000B	PUMP MOTOR								GQ3-001
GQ3-1P2-000B	ACID SCRUBBER PUMP	612m³/h 5.4bar DN250/200	P02	FRIATEC	RCNKU 200/400	<i>Glynwed</i>	Impeller: PP		GQ3-001
GQ3-1W3-000A	ACID SCRUBBER HEAT EXCHANGER	Tp: 72/48 °C - Ts: 40/66 °C DN250	W02			<i>Ecoflex</i>			GQ3-001
GQ3-1W3-000B	ACID SCRUBBER HEAT EXCHANGER	Tp: 72/48 °C - Ts: 40/66 °C DN250	W02			<i>Ecoflex</i>			GQ3-001
GQ3-1W3-000C	ACID SCRUBBER HEAT EXCHANGER	Tp: 72/48 °C - Ts: 40/66 °C DN250	W02			<i>Ecoflex</i>			GQ3-001
GQ3-1F4-000	ACID SCRUBBER CYCLONE					<i>Gea Jet Pumps</i>			GQ3-001
Functional Area: GS1 => Syngas treatment – De-sulphuration scrubber									
GS1-1B1-000	De-SULPHURATION SCRUBBER					<i>GTP</i>			GS1-001
GS1-1M2-000A	PUMP MOTOR								GS1-001
GS1-1P2-000A	De-SULPHURATION PUMP	380m³/h 2bar DN250/200	P04	FRIATEC	RCNKU 200/315	<i>Glynwed</i>	Impeller: PP		GS1-001
GS1-1M2-000B	PUMP MOTOR								GS1-001
GS1-1P2-000B	De-SULPHURATION PUMP	380m³/h 2bar DN250/200	P04	FRIATEC	RCNKU 200/315	<i>Glynwed</i>	Impeller: PP		GS1-001
GS1-1W3-000	De-SULPHURATION SCRUBBER HEAT EXCHANGER	DN200	W04	GEA	FA184 CDL-6	<i>Ecoflex</i>	Plate: 254 SMO		GS1-001
GS1-1W4-000	De-SULPHURATION SCRUBBER HEAT EXCHANGER	DN200	W04	GEA	FA184 CDL-6	<i>Ecoflex</i>	Plate: 254 SMO		GS1-001
GS1-2B1-000	De-SULPHURATION SCRUBBER DEMISTER					<i>GTP</i>			GS1-001
SC1-3M6-000	PUMP MOTOR								GS1-001
SC1-3P6-000	De-SULPHURATION COOLING PUMP	110m³/h 3.0 bar DN100/80	P09	GRUNDFOS	NK 80-315	<i>Grundfos</i>	Impeller: Cast iron		GS1-001
Functional Area: HG1 => Gasification Chamber									
HG1-0D1-000	GASIFICATION CHAMBER					<i>Presezzi</i>			HG1-001
Functional Area: HG2 => Gasification Chamber – Jacket cooling									
HG2-1B1-000	JACKET COOLING TANK	30m³				<i>Kurotec</i>			HG2-001

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HG2-1M2-000A	PUMP MOTOR								HG2-001
HG2-1P2-000A	JACKET COOLING PUMP	365m³/h 2bar 45°C ONE PUMP RUNNING: 550m³/h 1.5bar 45°C	P07	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		HG2-001
HG2-1M2-000B	PUMP MOTOR								HG2-001
HG2-1P2-000B	JACKET COOLING PUMP	365m³/h 2bar 45°C ONE PUMP RUNNING: 550m³/h 1.5bar 45°C	P07	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		HG2-001
HG2-3M1-000	FAN MOTOR								HG2-001
HG2-3V1-000	AIR COOLER FAN								HG2-001
HG2-3M2-000	FAN MOTOR								HG2-001
HG2-3V2-000	AIR COOLER FAN								HG2-001
HG2-3W3-000	AIR COOLER	Tp: 50/45 °C - Ts: 32/46 °C	W21			Gea, scambiatori di calore S.r. L.			HG2-001
HG2-3W4-000	AIR COOLER	Tp: 50/45 °C - Ts: 32/46 °C	W21						HG2-001
Functional Area: HG3 => Gasification Chamber – Inner cooling									
HG3-0M2-000A	PUMP MOTOR								HG3-001
HG3-0P2-000A	BURNERS COOLING PUMP	55m³/h 2.5bar 40°C ONE PUMP RUNNING: 105m³/h 2.0bar 55°C	P05	GRUNDFOS	NK 80-250	Grundfos	Impeller: Cast iron		HG3-001
HG3-0M2-000B	PUMP MOTOR								HG3-001
HG3-0P2-000B	BURNERS COOLING PUMP	55m³/h 2.5bar 40°C ONE PUMP RUNNING: 105m³/h 2.0bar 55°C	P05	GRUNDFOS	NK 80-250	Grundfos	Impeller: Cast iron		HG3-001
HG3-0W4-000	BURNERS COOLING HEAT EXCHANGER	Tp: 45/36 °C - Ts: 33/40 °C DN100	W05	GEA	NT100M CDL-10	Ecoflex	Plate: AISI316		HG3-001
HG3-0W5-000	BURNERS COOLING HEAT EXCHANGER	Tp: 45/36 °C - Ts: 33/40 °C DN100	W05	GEA	NT100M CDL-10	Ecoflex	Plate: AISI316		HG3-001
HG3-7A1-000	GASIFICATION CHAMBER KNEE COOLING	DWG HG1-001				Cover			HG3-001
HG3-7A2-000	GASIFICATION CHAMBER CASTING OUTLET	DWG HG1-001				Cover			HG3-001
HG3-9B1-000	BURNERS COOLING COMPENSATION VESSEL	0,5 m³	B15			Sabawerk			HG3-001

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Functional Area: HG4 => Granulate cooling and discharge

HG4-1B1-000	GRANULATING VESSEL				Presezzi		HG4-001
HG4-2A1-000	GRANULATE SEPARATION DEVICE				Laun		HG4-001
HG4-3H1-000	GRANULATE CONVEYOR SYSTEM				AZA		HG4-001
HG4-3M1-000	CONVEYOR MOTOR						HG4-001

Functional Area: HG5 => Gasification Chamber (Gas and Oxygen)

HG5-1A1-000	GASIFICATION CHAMBER BURNER	BURNER L01	D01		Rivoira		HG5-001
HG5-1A2-000		BURNER L02	D01				HG5-001
HG5-1A3-000		BURNER L03	D01				HG5-001
HG5-1A4-000		BURNER L04	D01				HG5-001
HG5-1A5-000		BURNER L05	D01				HG5-001
HG5-1A6-000		BURNER L06	D01				HG5-001
HG5-1A7-000		BURNER C01	D01				HG5-001
HG5-1A8-000		BURNER C02	D01				HG5-001
HG5-1A9-000		BURNER C03	D01				HG5-001
HG5-1AX-000		SPARE BURNER	D01				HG5-001
HG5-2A1-000		BURNER L07	D01				HG5-001
HG5-2A2-000		BURNER L08	D01				HG5-001
HG5-2A3-000		BURNER L09	D01				HG5-001
HG5-2A4-000		BURNER L10	D01				HG5-001
HG5-2A5-000		BURNER L11	D01				HG5-001
HG5-2A6-000		BURNER L12	D01				HG5-001
HG5-2A7-000		BURNER C04	D01				HG5-001
HG5-2A8-000		BURNER C05	D01				HG5-001

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HG5-2A9-000		BURNER C06	D01						HG5-001
HG5-2AX-000		SPARE BURNER	D01						HG5-001
HG5-3A1-000		BURNER M01	D01						HG5-001
HG5-3A2-000		BURNER M02	D01						HG5-001
HG5-3A3-000		BURNER M03	D01						HG5-001
HG5-3A4-000		BURNER M04	D01						HG5-001
HG5-3A5-000		BURNER M05	D01						HG5-001
HG5-3A6-000		BURNER M06	D01						HG5-001
HG5-4A1-000		BURNER M07	D01						HG5-001
HG5-4A2-000		BURNER M08	D01						HG5-001
HG5-4A3-000		BURNER M09	D01						HG5-001
HG5-4A4-000		BURNER M10	D01						HG5-001
HG5-4A5-000		BURNER M11	D01						HG5-001
HG5-4A6-000		BURNER M12	D01						HG5-001

Functional Area: **KT1 => Cooling towers**

KT1-0M9-000	PUMP MOTOR								KT1-001
KT1-0P9-000	COOLING TOWERS DISCHARGE PUMP		P11	GRUNDFOS	CRN 5-5	Grundfos	Impeller: AISI316		KT1-001
KT1-1B1-000	COOLING TOWERS BASIN								KT1-001
KT1-1M2-000	PUMP MOTOR								KT1-001
KT1-1P2-000	COOLING TOWERS PUMP	967m³/h 1.6bar DN300	P06			Grundfos			KT1-001
KT1-1W3-000	COOLING TOWER HEAT EXCHANGER	DN350	W06	GEA	NT350S B-10	Ecoflex	Plate: AISI316		KT1-001
KT1-1W4-000	COOLING TOWER 1					SPX			KT1-001
KT1-1M5-000	FAN MOTOR								KT1-001
KT1-1V5-000	COOLING TOWER FAN								KT1-001

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KT1-2B1-000	COOLING TOWERS BASIN								KT1-001
KT1-2M2-000	PUMP MOTOR								KT1-001
KT1-2P2-000	COOLING TOWERS PUMP	967m³/h 1.6bar DN300	P06			Grundfos			KT1-001
KT1-2W3-000	COOLING TOWER HEAT EXCHANGER	DN350	W06	GEA	NT350S B-10	Ecoflex	Plate: AISI316		KT1-001
KT1-2W4-000	COOLING TOWER 2					SPX			KT1-001
KT1-2M5-000	FAN MOTOR								KT1-001
KT1-2V5-000	COOLING TOWER FAN								KT1-001
KT1-3B1-000	COOLING TOWERS BASIN								KT1-001
KT1-3M2-000	PUMP MOTOR								KT1-001
KT1-3P2-000	COOLING TOWERS PUMP	967m³/h 1.6bar DN300	P06			Grundfos			KT1-001
KT1-3W3-000	COOLING TOWER HEAT EXCHANGER	DN350	W06	GEA	NT350S B-10	Ecoflex	Plate: AISI316		KT1-001
KT1-3W4-000	COOLING TOWER 3					SPX			KT1-001
KT1-3M5-000	FAN MOTOR								KT1-001
KT1-3V5-000	COOLING TOWER FAN								KT1-001
KT1-9B1-000	COOLING CIRCUIT COMPENSATION VESSEL	5m³				Sabawerk			KT1-002
SC3-0M2-000A	PUMP MOTOR								KT1-002
SC3-0P2-000A	EVAPORATION COOLING PUMP	DN200 / DN150 55KW	P13	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		KT1-002
SC3-0M2-000B	PUMP MOTOR								KT1-002
SC3-0P2-000B	EVAPORATION COOLING PUMP	DN200 / DN150	P13	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		KT1-002
SC4-0M2-000A	PUMP MOTOR								KT1-002
SC4-0P2-000A	AIR SEPARATION COOLING PUMP	DN200 / DN150 55KW	P13	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		KT1-002
SC4-0M2-000B	PUMP MOTOR								KT1-002
SC4-0P2-000B	AIR SEPARATION COOLING PUMP	DN200 / DN150	P13	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		KT1-002
SC4-0M2-000C	PUMP MOTOR								KT1-002
SC4-0P2-000C	AIR SEPARATION COOLING PUMP	DN200 / DN150	P13	GRUNDFOS	NK 150-320	Grundfos	Impeller: Cast iron		KT1-002

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
Functional Area: MC1 => Granulate handling – Common part									
MC1-1B1-000	GRANULATE BASIN								MC1-001
MC1-1M2-000	PUMP MOTOR								MC1-001
MC1-1P2-000A	GRANULATE BASIN PUMP	1bar 11m³/h DN100	P14	GRUNDFOS	SENV.80.100.29.4. 501.R	Grundfoss	Impeller: CF8M AISI	Impeller Supervortex	MC1-001
MC1-1P2-000B	GRANULATE BASIN PUMP	1bar 11m³/h DN100	P14	GRUNDFOS	SENV.80.100.29.4. 501.R	Grundfoss	Impeller: CF8M AISI	Impeller Supervortex	MC1-001
MC1-2H1-000	GRANULATE CRANE					CPM Carnovali			MC1-001
Functional Area: SA1 => Thermal Line Utilities distribution									
SG5-0B3-000	COMPRESSED AIR LINE BUFFER	200l				Cover			SA1-001
Functional Area: SC2 => Cooling System – Gasifier pre-cooling									
SC2-0M2-000A	PUMP MOTOR								SC2-001
SC2-0P2-000A	GASIFIER COOLING PUMP	DN300 / DN250 90KW	P08	GRUNDFOS	NK 250-400	Grundfos	Impeller: Cast iron		SC2-001
SC2-0M2-000B	PUMP MOTOR								SC2-001
SC2-0P2-000B	GASIFIER COOLING PUMP	DN300 / DN250	P08	GRUNDFOS	NK 250-400	Grundfos	Impeller: Cast iron		SC2-001
SC2-1W1-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-1W2-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-1M3-000	FAN MOTOR								SC2-001
SC2-1V3-000	AIR COOLER FAN					Gea, scambiatori di calore S.r. L.			SC2-001
SC2-1M4-000	FAN MOTOR								SC2-001
SC2-1V4-000	AIR COOLER FAN								SC2-001
SC2-2W1-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-2W2-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-2M3-000	FAN MOTOR								SC2-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
SC2-2V3-000	AIR COOLER FAN								SC2-001
SC2-2M4-000	FAN MOTOR								SC2-001
SC2-2V4-000	AIR COOLER FAN								SC2-001
SC2-3W1-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-3W2-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-3M3-000	FAN MOTOR								SC2-001
SC2-3V3-000	AIR COOLER FAN								SC2-001
SC2-3M4-000	FAN MOTOR								SC2-001
SC2-3V4-000	AIR COOLER FAN								SC2-001
SC2-4W1-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-4W2-000	AIR COOLER	Tp: 67/45 °C - Ts: 32/54 °C	W22						SC2-001
SC2-4M3-000	FAN MOTOR								SC2-001
SC2-4V3-000	AIR COOLER FAN								SC2-001
SC2-4M4-000	FAN MOTOR								SC2-001
SC2-4V4-000	AIR COOLER FAN								SC2-001

Functional Area: SH1 => Acid – Storage and distribution

SH1-1B1-000	HCL STORAGE VESSEL	40m³ %C3m					Ticomm & Promaco		SH1-001
SH1-1P2-000A	HCl DISTRIBUTION PUMP	DN25	P83	SANDPIPER	SIF Non metallic	Asco	Polypropilene		SH1-001
SH1-1P2-000B	HCl DISTRIBUTION PUMP	DN25	P83	SANDPIPER	SIF Non metallic	Asco	Polypropilene		SH1-001
SH1-1B3-000	HCl DISTRIBUTION PULSATION DAMPENER						Soldini		SH1-001
SH1-1B9-000	HCL VENTILATION VESSEL						?		SH1-001

Functional Area: SN1 => Caustic – Storage and distribution

SN1-1B1-000	NaOH STORAGE VESSEL	40m³ %C3m					Ticomm & Promaco		SN1-001
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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
SN1-1P2-000A	NaOH DISTRIBUTION PUMP	DN25	P83	SANDPIPER	SIF Non metallic	Asco	Polypropilene		SN1-001
SN1-1P2-000B	NaOH DISTRIBUTION PUMP	DN25	P83	SANDPIPER	SIF Non metallic	Asco	Polypropilene		SN1-001
SN1-1B3-000	NaOH DISTRIBUTION PULSATION DAMPENER					Soldini			SN1-001
Functional Area: SS1 => Process sewer									
SS1-1B1-000	SEWER DECANTER	12 m3				Ticomm & Promaco			SS1-001
SS1-1P2-000	SEWER DECANTER PUMP		P81	SANDPIPER	S30 Metallic	Asco	Wet parts: Alloy C		SS1-001
SS1-2B1-000	SEWER VESSEL	80 m3				Ticomm & Promaco			SS1-001
Functional Area: WB1 => Process water – Buffer – Oxidation									
WB1-1B1-000	WATER TREATMENT BUFFER	115m³				Plasticon			WB1-001
WB1-1P2-000	WATER TREATMENT BUFFER PUMP	DN 80	P81	SANDPIPER	S30 Metallic	Asco	Wet parts: Alloy C		WB1-001
Functional Area: WE1 => Process water – Ion exchangers									
WE1-1J0-000	ION EXCHANGER								WE1-001
WE1-1A1-000	ION EXCHANGE FILTER					Acqua Crystal			WE1-001
WE1-1A2-000	ION EXCHANGE UNIT					Acqua Crystal			WE1-001
WE1-1A3-000	ION EXCHANGE FILTER					Acqua Crystal			WE1-001
WE1-1A4-000	ION EXCHANGE UNIT								WE1-001
WE1-2B1-000	TREATED WATER VESSEL	20m³ %%C2.5m	B08			Ticomm & Promaco			WE1-001
WE1-2M2-000A	PUMP MOTOR								WE1-001
WE1-2P2-000A	TREATED WATER PUMP		P10	GRUNDFOS	CRT 16-4	Grundfos	Impeller: Titanium		WE1-001
WE1-2M2-000B	PUMP MOTOR								WE1-001
WE1-2P2-000B	TREATED WATER PUMP		P10	GRUNDFOS	CRT 16-4	Grundfos	Impeller: Titanium		WE1-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
WE1-3B1-000	REGENERATION NaOH VESSEL		B07			Ticomm & Promaco			WE1-001
WE1-3M2-000	PUMP MOTOR								WE1-001
WE1-3P2-000	REGENERATION NaOH PUMP	DN50/40	P21	SPEC	BCM 40	Pro-Rap			WE1-001
WE1-4B1-000	REGENERATION HCl VESSEL		B07			Ticomm & Promaco			WE1-001
WE1-4M2-000	PUMP MOTOR								WE1-001
WE1-4P2-000	REGENERATION HCl PUMP	DN50/40	P21	SPEC	BCM 40	Pro-Rap			WE1-001
Functional Area: WN1 => Process water – Neutralization									
WN1-1B1-000	NEUTRALIZATION	15 m3	B06			Ticomm & Promaco			WN1-001
WN1-1M2-000	MIXER MOTOR	5KW							WN1-001
WN1-1R2-000	NEUTRALIZATION MIXER					TMR			WN1-001
WN1-1M2-000A	PUMP MOTOR								WN1-001
WN1-1P2-000A	NEUTRALIZATION PUMP		P10	GRUNDFOS	CRT 16-4	Grundfos	Impeller: Titanium		WN1-001
WN1-1M2-000B	PUMP MOTOR								WN1-001
WN1-1P2-000B	NEUTRALIZATION PUMP		P10	GRUNDFOS	CRT 16-4	Grundfos	Impeller: Titanium		WN1-001
Functional Area: WP1 => Process water – Hydroxide Precipitation									
WP1-1B1-000	HYDROXID PRECIPITATION	15 m3				Ticomm & Promaco			WP1-001
WP1-1M2-000	MIXER MOTOR	5KW							WP1-001
WP1-1R2-000	HYDROXID PRECIPITATION MIXER					TMR			WP1-001
WP1-2B1-000	HYDROXID SEDIMENTATION	115 m3				Plasticon			WP1-001
WP1-2P2-000	SLUDGE PUMP	DN 50	P82	SANDPIPER	EH2-M	Grundfos			WP1-001
WP1-2P3-000	SLUDGE PUMP	DN 50	P82	SANDPIPER	EH2-M	Grundfos			WP1-001
WP1-3B1-000	FeCl3 TANK					Astra			WP1-001

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Item:	Description:	Process information:	Type:	Producer:	Sup. type:	Supplier:	Material:	Note:	Dwg:
WP1-3B2-000	FeCl3 TANK					Astra			WP1-001
WP1-3B3-000	H2O2 TANK					Astra			WP1-001
WP1-3B4-000	H2O2 TANK					Astra			WP1-001
WS1-1F2-000	PRESS-FILTER	SEE DRAWING WS1-001				Diemme			WP1-001
WS1-1B3-000	PRESS-FILTER BASIN								WP1-001
WS1-2F2-000	PRESS-FILTER	SEE DRAWING WS1-001				Diemme			WP1-001
WS1-2B3-000	PRESS-FILTER BASIN								WP1-001
Functional Area: WR1 => Process water – De-sulphuration regeneration									
WR1-1B1-000	De-SULPHURATION REGENERATION OXIDIZER	85 m3 %%C3.5m				GTP			WR1-001
WR1-1B2-000	ANTI-FOAM INJECTION POINT					Cover			WR1-001
WR1-1M3-000A	PUMP MOTOR								WR1-001
WR1-1P3-000A	De-SULPHURATION REGEN. PUMP	455m³/h 2.5bar DN250/200	P04	FRIATEC	RCN KU 200/315	Glynwed	Impeller: PP		WR1-001
WR1-1M3-000B	PUMP MOTOR								WR1-001
WR1-1P3-000B	De-SULPHURATION REGEN. PUMP	455m³/h 2.5bar DN250/200	P04	FRIATEC	RCN KU 200/315	Glynwed	Impeller: PP		WR1-001
WR1-2M2-000	PUMP MOTOR								WR1-001
WR1-2P2-000	De-SULPHURATION REGEN. SLUDGE PUMP		P15	FRIATEC	CPRF 65-40-250	GTP	Impeller: PE1000		WR1-001
WR1-2F3-000	De-SULPHURATION REGEN. SLUDGE FILTER					GTP			WR1-001
WR1-9B1-000	LO-CAT STORAGE VESSEL	40m³ %%C3m				Ticomm & Promaco			WR1-002
WR1-9P2-000	LO-CAT DISTRIBUTION PUMP		P83	SANDPIPER	SIF Non metallic	Asco	Polypropilene		WR1-002