DETAILED SCOPE OF SUPPLY

Equipment Supply

1. Quicklime extraction and dosage system
2. Sludge mixing system with quicklime
3. Lime silo
4. All necessary Accessories
5. All necessary Spare Parts
6. Ordinary and Special Tools
7. Technical Alternative Options

Service Supply

1. Cost of transportation of the Goods, Cost of Installation, Commissioning and Training of the Staff

Please see bellow preferable technical Specifications for Main Equipment

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| **TECHNICAL DATA SHEET** | | |
| **PROJECT** | Lime Dosing System for GSTP Georgia | |
| **EQUIPMENT** | QUICKLIME EXTRACTION AND DOSAGE SYSTEM. |
| **SERVICE** | DEWATERED SLUDGE | |

**Features**

- Flow: 300 to 400 kg/h.

- Bulk density: 0,90 kg/l.

**Isolation Register PN 10 DN 200**

- 1 ut Isolation register PN 10. DN 200.

- 2 uts Sliding plates slot plugs.

- 2 uts sliding plates.

**Arch breaker ZDM400**

- 2 uts Turning half-flanges.

- 1 ut Arch breaker body, Ø400 mm.

- 1 ut Inspection door, fitted with transparent window.

- 1 ut Bottom base plate with opening for conveyor inlet.

- 1 ut Arch breaker turbine fitted with lower hub flexible metallic blades.

- 1 ut Feeder admission doser.

- 1 ut Geared motor with motor 0,55 kW, 380 VAC, 50 Hz, 1.500 rpm, IP55.

**Dosing Screw DDMR 40 S.C.F-AB, L= 1 m**

- Fixing flange for the conveyor tube.

- 1 ut Metering spiral with engagement socket motor shaft.

- 1 ut Outlet chute GU type GU Ø 150 mm with anti-blockage switch.

- 1 ut Geared motor 0,55 kW, 380 VAC, 50 Hz, 1.500 rpm, IP55.

**Metering Screw DMR 70 S.C.F-AB, L= 4 m**

- Fixing flange for the conveyor tube.

- 1 ut Metering spiral with engagement socket motor shaft.

- 1 ut Outlet chute GU type GU Ø 150 mm with anti-blockage switch.

- 1 ut Geared motor 1,10 kW, 380 VAC, 50 Hz, 1.500 rpm, IP55.

**Material**

- Carbon steel S 235 JR.

**Painting**

- Protection degree C3 (medium) cooking temperature 210 ° for 20 minutes.

- Colour: RAL 7045.

**2 Air Actuated sliding gate valves**

- Type: Slide gate valve, PN 10. DN 150.

- Actuator: Pneumatic, double acting piston linear. Open air pressure. 5 to 8 bar.

- Command: Electrovalve 5/2 ways, IP 65, 24 Vac.

* Limit position detector: 2 limit position detector confirmation valves open.

Material

- Body: Cast iron GG 25.

- Gate: Stainless steel AISI 304.

- Close: EPDM.

**Injector ID80 S.C.F-AB, L= 1 m**

- 1 ut Admission chute GU Ø 150 mm, with lower register and engine flange.

- 1 ut Clamp dosing conduit.

- 1 ut Fixing flange for the conveyor tube.

- 1 ut Metering spiral with engagement socket motor shaft.

- 1 ut Geared motor 0.75 kW, 380 VAC, 50 Hz, 1.500 rpm, IP55.

- Material: Stainless steel AISI 304.

**Finishes**

- As per manufacturer´s standard.

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| **TECHNICAL DATA SHEET** | | |
| **PROJECT** | Lime Dosing System for GSTP Georgia | |
| **EQUIPMENT** | SLUDGE MIXING SYSTEM WITH QUICKLIME |
| **SERVICE** | DEWATERED SLUDGE | |

**Features**

- Capacity: 7 m3/h.

**Hopper admission**

- Hopper product inlet.

- Level detector.

**Corps**

- Rectangular geometry in a horizontal arrangement, with double cradle artesa.

- An inlet chute.

- An outlet chute.

- Screw cap with inspection log and vent pipe.

- Mechanic welded 304 stainless constructions.

**Mixing system**

- Two secants rotors - left step and the right step - Ø nominal: 300 mm.

- Steerable toothed pallets treated steel, helical mount.

- Assembly between bearings.

- Seal by adjustable gland.

**Drive assembly**

- Flexible coupling between rotor shaft and gear motor.

- Drag the second rotor gear.

- Protection guard.

- Parallel axis gear motor, 2,20 kW, 380 VAC, 50 Hz, IP 55, class F.

**Aspiration system and washing powder**

- Filtration system to capture and removal of lime dust and water vapor generated during.

- Dosage of quicklime to sludge treatment (hoppers or mixers closed). Horizontal Implementation.

- The dust collection is performed by aspiration and posterior spraying water on lamellae capturing. The wash water should be sent to drain and hence the treatment plant. Can be used mains water or treated water (purified), although the degree of cleaning it needs affect manual cleaning and maintenance of the system.

**Features filtration and washing**

- Power separation: 20 microns.

- Material: Polypropylene.

- Inlet and outlet diameter: 110 mm.

- Water consumption washing: 1 m3/h to 3 bars.

**Features aspiration**

- Support: Amount.

- Coupling: Amount.

- Turbine speed: 2.800 rpm.

- Noise level: 59 dB(A).

- Motor: 0,75 kW, 380 VAC, 50 Hz, IP55.

**Finishes**

- As per manufacturer´s standard.

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| **TECHNICAL DATA SHEET** | | |
| **PROJECT** | Lime Dosing System for GSTP Georgia | |
| **EQUIPMENT** | QUICKLIME SILO |
| **SERVICE** | DEWATERED SLUDGE | |

**Features**

- Geometric volume: 41,60 m3.

- Useful volume: 38,90 m3.

- Volume between levels: 30 Tn.

- Diameter: 2.400 mm.

- Product outlet flange height: 2.000 mm.

- Conical height: 1.955 mm.

- Cylindrical height: 8.500 mm.

- Hand-rail height: 1.100 mm.

- Total Height: 13.555 mm.

- Product outlet flange PN10 DN200.

- Regular cone 60 º.

- Ø 500 manhole with fast-opening watertight closing.

- Sloped roof, with tubular handrail and roof access ladder with protection.

- Filling pipe DN80.

- Support structure bolted and hot galvanized.

**Material**

- Body: Carbon steel.

**External surface treatment**

- Abrasive Blasting degree SA 2.5.

- Colour white RAL9010.

**Structure and ladder with protection**

- Galvanized hot type UNE –EN ISO 1461:1999.

**Dust collector**

- Cleaning: Air.

- Filtering surface: 24,50 m2.

- Filtering element: 7 ut of 265 g/m2.

- Body material: Stainless steel 430.

- Voltage supply: 230 Vdc / Vca.

- Filling hosepipe connection detector.

**Level detector**

- Nº of uts: 2 uts.

- Type: Turning spades.

- Output signal: Floating contact.

- Spades diameter: 125 mm.

- Motor: 24 Vca, 50 Hz, 3,80 W, IP 65.

**Under pressure – Over pressure relief valve**

- Apertura adjustment: 0,05 bar over pressure - -0,02 under pressure.

- Position: Roof.

- Material: Epoxy painted iron plastic.

**Electric control panel**

- Electric cabinet with power and manoeuvre elements for the offered equipment.

- With PLC and VFD to control dosing screw. Power supply: 230/400 VAC, 50/60 Hz, 3F+earth.

- Maximum distance between the installation and the table below 50 m.

**Features box**

- Power 400V III + PE.

- General RCCB 3p, 20A.

- Power Transformer 380 V - 24V.

- Power supply TEE.

- Power supply and transformer power supply protections.

- Security module.

- PLC Siemens.

- Module 8 SD ED + 8 x relay.

- Touch screen.

- VFD to control dosing screw.

- Motors protected with circuit breaker according to current ratings.

- Module for remote access to PLC box for troubleshooting of programming during.

**Finishes**

- As per manufacturer´s standard.