Case Study

Inovyn Settler Tank

2.5m tonnes of salt are extracted from the Holford Brinefield at Inovyn's Northwich site every year. Brine settler tank 16 is a critical component of the processing plant. The tanks are supported on reinforced concrete plinths.

Location
Northwich, UK

Client
Inovyn

Completed
2018

Structure
Brine Settler Tank Plinths

The Problem Identified

Over time the reinforced concrete plinths had become contaminated with chloride ions from the brine processing, leading to expansive reinforcement corrosion and cracking and spalling of the concrete. If left to deteriorate, the plinths would eventually need replacing at a significant cost and with disruption to plant operations.

The Solution Developed

Inovyn required a long life, low maintenance corrosion protection system to extend the life of the tank supporting structure. The solution was to install the CPT DuoGuard™ hybrid anode cathodic protection system to the corrosion effected plinths, in conjunction with patch repairs to spalled and delaminated areas of concrete. DuoGuard zinc alloy anodes were grouted into drilled holes at approximately 400mm centres. Using an external power source, a relatively high impressed current was applied to stop active corrosion and render the steel passive. After 7 days the DuoGuard anodes were disconnected from the power source to self-generate a relatively low galvanic current, sufficient to maintain steel passivity and control corrosion for the 20 year design life of the system.

The Benefits Provided

Corrosion related deterioration of Inovyn Settler Tank plinths has been halted. After the initial 7 day power up period using an external power source, the DuoGuard system is self-powered thus minimising future maintenance requirements and associated life costs. Each plinth has a discrete connection box where anode current and steel potential can be measured and where additional impressed current can be applied in the future, if necessary.

Inovyn install

CPT Products Used

DuoGuard™

MN15 Reference Electrode

DuoCrete SD Mortar

Certificate Number 10159
ISO 9001, ISO 14001

Concrete Preservation Technologies

1 Palmer Business Court, Manor House Road, Nottingham, UK, NG10 1LZ
+44 (0) 115 9724 238 | general@cp-tech.co.uk | cp-tech.co.uk