

Rami Izhiman

From: Khalil Abed
Sent: Tuesday, April 4, 2023 8:59 AM
To: Shadi Hindaileh
Subject: RE: Corrologic AST Solution for Storage Tanks at Bab Far North Field Project
Attachments: 0113 Rev 02 System Description.pdf; CorroLogic_Dispensing_System_CME.PDF; 0017 System Drawing.pdf; Evaluation of Impressed Current Protected Tanks in Presence of VpCI.pdf; Compatibility between CP and CorroLogic Technology.pdf; Specifications Excerpt example.pdf; GTC-NDT-20-010-R1-CORTEC Filter Investigation.pdf; 0002 Rev A Technical Report Crush Test of Drip Irrigation Tubing under Static Load.pdf

Dear Shadi,

Below are my notes:

1. Avoid using salutation such as Dear Gentlemen. It is casual and more for internal use than external. It is better to mention their names in the salutation preceded with a title like Mr. or Ms.
2. There is more value in actioning and answering the meeting minutes than listing them. If you want to include the minutes of the meeting, you can do so in an attachment to keep the body of the email for the core message.
3. The email is not written in a way to link the queries raised in the meeting and the provided information.
4. It is always better to separate the topics to avoid confusion of the reader. The nitrogen blanketing is not related to dispensing system topic and the subject of the email. It is related to pipeline preservation or internal preservation of tanks. Let's send a separate email to them on this topic.

I would suggest the following writeup:

Dear Mr. Sajid and Mr. Pranary,

It was a pleasure meeting you last Thursday in your office. During the meeting we introduced Cortec CorroLogic AST Dispensing System for providing protection against soil-side corrosion on aboveground storage tanks. CorroLogic AST Dispensing System is designed to be integrated into the tank foundation to provide protection for aboveground storage tank bottoms against soil-side corrosion during construction and pre-commissioning phase as well as operation. For more information on this, please find attached the following documents:

1. System description
2. Dispensing system datasheet
3. Typical drawing

Our VpCI technology injected through the dispensing system has been designed to provide synergetic effect when used on CP protected tanks and it has been proved that it can reduce the corrosion rate as low as 0.29 mpy. Attached you can find two papers that discuss the interactions between CorroLogic VpCI and CP.

The System has been successfully specified and installed on more than 35 tanks across the region since its launch in 2016. Attached is an excerpt from a bid document on how the system was specified by a leading consulting company for a project in Saudi. It is also worth noting that the system has been specified by CPE for ADNOC Das Island tank farm project recently.

I have also appended additional information related to the queries raised about how we ensure that the orifices in the dispensing system don't get clogged and that the system is capable of withstanding the hydrostatic forces coming from the fluid stored in the tank upon commissioning. Attached are the following test reports related to these topics:

1. GTC-NDT-20-010-R1 report shows that dispensing system was able to effectively dispense the vapor phase corrosion inhibitor liquid in 95% and 98% compacted sand using geotextile sock with gravel size between 5 to 10 mm.
2. Crush Test Report shows that the dispensing ring was able to withstand the compressed sand as well as loading of up equivalent to a steel tank 20 meter high filled with water (heavier than hydrocarbon)

Please provide us with the list of tanks in Bab Far North Projects to include tank TAG number, service description, operating temperature and diameter, to submit for your technical and commercial proposal for your further evaluation.

Should you have questions or require further clarification, please don't hesitate to contact us.

Sincerely,

Khalil Abed

Cortec Middle East



Environmentally Safe VpCI®/MCI® Technologies

Tel. +971 4 434 0669

Fax. +971 4 434 0668

Mob (UAE).+971 50 55 76150

Mob (KSA). +966 55 73 70020

P.O. Box 115133

Dubai, United Arab Emirates

www.cortec-me.com

From: Shadi Hindaileh <shindaileh@cortec-me.com>

Sent: Friday, March 31, 2023 11:34 AM

To: Khalil Abed <kabed@cortec-me.com>

Subject: Corrologic AST Solution for Storage Tanks at Bab Far North Field Project

Dear Khalil,

Below is the email draft I have and the below documents e) and f) I was unable to get

Dear Gentlemen,

It was great meeting with both of you yesterday. I am listing down the minutes of meeting:

- Sajid has raised questions regarding the Corrologic AST Dispensing system's track record, years in service, tank size limitations, historical ER probes readings. Also asked if extra ER probes are needed when ER probes are already installed for CP.
- Sajid has doubts about the impact of VPCI on preserving the wet/humid pipe internals post hydrotesting, during dry layup
- Khalil will share a paper by Bavarian on the effect of VPCI to protect pipe internals after the hydrotesting and during the dry layup so it may be specified to be mixed with the Nitrogen in the EPC tendering documents.
- Khalil explained the Corrologic AST Dispensing system components and limitations, track record and field corrosion rates reduction, elevated temperature limits, tank size range executed
- Pranay asked about design life of Corrologic AST and the impact of loading/offloading the tank on VPCI containment and maximum operating temperature

- Khalil has requested the contact of the structural team leader and been advised by Sajid to meet Abdel Fattah – to keep him aware of the Corrologic AST system
- The project with the tanks and pipeline scope will be tendered in May, so Cortec once receives the needed information on the tanks and pipeline will send the techno commercial proposal for the estimation department withing 2-3 working days

As requested, find attached :

- Typical Dispensing system Drawing
- Description of AST Dispensing system (General Technical Proposal)
- 3 papers on VPCI compatibility with CP
- Effectiveness of Vapor Corrosion Inhibitors Compared with Nitrogen Blanketing, By Bavarian
- Report on loading compression impact on VPCI containment
- Temperature limit for using VPCI

Dear Pranay,

Can you please send me the details of the said tanks, so we can prepare the techno commercial offer for the Proejct estimation team :

Tank number	Description	Operating temperature	Diameter
-------------	-------------	-----------------------	----------

And the diameter and length of the pipeline for the estimation of adding VPCI to the nitrogen for dry layup post hydrotesting.

Regards

Shadi Hindaileh, P.E., PMP
Durability Specialist
Specifications Manager



Certificate No:CL18020610

Tel. [+971 4 434 0669](tel:+97144340669)

Fax. [+971 4 434 0668](tel:+97144340668)

Mob. [+971 56 808 5423](tel:+971568085423)

P.O. Box 115133

Dubai, United Arab Emirates

www.cortec-me.com

