ZDHC Roadmap to Zero Programme

Zero-Liquid Discharge (ZLD) Sampling Interim Guidance

February 2019 v1.0

Wastewater treatment systems employing zero-liquid discharge (ZLD) are defined as those where:

- No liquid wastewater is discharged from the system.
- The only water leaving is that as vapour and trapped in sludge/crystallised brine.

Wastewater used for on-site irrigation or used for other non-process operations is NOT a form of ZLD.

For such systems if the following Testing Protocol is followed the system will be considered as following the ZDHC Wastewater Guidance:

- Raw (untreated) wastewater is tested for ZDHC MRSL v1.1 chemistries. (Tables 2A-2N + As, Cd, Cr(VI), Pb, Hg).
- Any sludge or solids from the ZLD process are tested for ZDHC MRSL v1.1 chemistries. (Table 3).
- Collect a sample of incoming fresh (makeup) water. Hold for analysis and if there are any detected MRSL chemicals in the raw wastewater or sludge/solids analyse this sample for ZDHC MRSL v1.1 chemistries (Tables 2A-2N + As, Cd, Cr(VI), Pb, Hg).
- Any liquid stream that contacts the environment or is sent for disposal should be tested against the ZDHC Wastewater Guidelines. This is as any facility with any liquid stream is not considered as a ZLD Facility.

There is no need to test the clean water (RO Permeate) returning from the ZLD to the manufacturing process.

In the event, that a wastewater discharge exists, whether from a process at the facility that is not ZLD or any other source, it must be tested as per the entire ZDHC Wastewater Guideline for conventional and MRSL parameters.