



Risk Assessment for Saturator Services - Commission & Scheduled Maintenance

Revision Date : 21/09/2016

Review Date : 21/09/2017

| Risk Number | Description of Risk<br>[Cause/Event/Consequence]  | Risk Owner | Analysis Inherent Risk |        |                                    | Current Controls   | Control Owner    | Analysis Residual Risk |        |                                | Proposed / Further Controls   | Control Owner | Analysis Target Risk |        |   |
|-------------|---|------------|------------------------|--------|------------------------------------|--|------------------|------------------------|--------|--------------------------------|---|---------------|----------------------|--------|---|
|             |   |            | Likelihood             | Impact | Inherent Risk<br>[Before Controls] |  |                  | Likelihood             | Impact | Residual Risk [After Controls] |   |               | Likelihood           | Impact | Target Risk<br>[Further Controls Implemented] |
| 1           | water contamination as a result of the spillage of brine  | AM         | 2                      | 3      | 6                                  | 1. Spill kit to minimise any spillage located in service vehicle   | Service Engineer | 1                      | 2      | 2                              | spill kits located adjacent to plant on site  | Site          | 1                    | 1      | 1   |
|             |   |            |                        |        |                                    | 2. Correct operating procedures communicated to operative to minimise potential for spill  | Service Engineer |                        |        |                                |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 3. Plant designed to reduce potential spillage (max limit alarms, double skin tanks, etc.)   | AM               |                        |        |                                |   |               |                      |        |   |
| 2           | significant [immobilising] accident to lone working operative   | AM         | 2                      | 3      | 6                                  | 1. Operator always to report to site supervisor upon arrival, and to log in / out of site  | Service Engineer | 1                      | 3      | 3                              |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 2. Regular phone communication with head office advising of position   | Service Engineer |                        |        |                                |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 3. Adhesion to safe working practices as outlined in method statement  | Service Engineer |                        |        |                                |   |               |                      |        |   |
| 3           | operative contact with chemicals resulting in skin irritation / eye irritation / sickness through ingress | AM         | 2                      | 2      | 4                                  | 1. correct usage of appropriate PPE  | Service Engineer | 2                      | 1      | 2                              |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 2. Adhesion to safe working practices as outlined in method statement  | Service Engineer |                        |        |                                |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 3. First Aid Kit available on site / in service vehicle stocked with appropriate remedies and eye wash   | Service Engineer |                        |        |                                |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 4. COSHH present for all chemicals   | Service Engineer |                        |        |                                |   |               |                      |        |   |
| 4           | spillage of salt resulting in water / land contamination  | AM         | 3                      | 2      | 6                                  | 1. Telehandler operator sufficiently trained to minimise spillages   | Site             | 2                      | 1      | 2                              | redesign of plant to enable greater loading area (using alternative loading methods or loading baffles) | AM            | 1                    | 1      | 1   |
|             |   |            |                        |        |                                    | 2. removal of spilled salt post-event  | Site             |                        |        |                                |   |               |                      |        |   |
| 5           | operative injury sustained whilst working at height   | AM         | 2                      | 3      | 6                                  | 1. Use of MEWP, by trained employees, where site dictates  | Service Engineer | 2                      | 1      | 2                              | redesign plant enabling zero working at height for routine maintenance                                  | AM            | 1                    | 2      | 2   |
|             |   |            |                        |        |                                    | 2. Work at height always carried out with a harness and restraining lanyard  | Service Engineer |                        |        |                                |   |               |                      |        |   |
|             |   |            |                        |        |                                    | 3. Ladders to be used when approved and when dictated by nature of requirement (ie infrequent use for short periods of time). Permit to use by senior management to be signed in advance of tasks. | Service Engineer |                        |        |                                |   |               |                      |        |   |



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|-------------|---|------------|------------------------|--------|---------------------------------|---|------------------|------------------------|--------|--------------------------------|---|---------------|----------------------|--------|--|---|
|             |   |            | Likelihood             | Impact | Inherent Risk [Before Controls] |   |                  | Likelihood             | Impact | Residual Risk [After Controls] |   |               | Likelihood           | Impact | Target Risk [Further Controls Implemented] |   |
| 6           | physical danger to operative from additional site activities    | AM         | 3                      | 2      | 6                               | 1. Correct use of PPE (high visibility clothing and safety boots especially)  | Service Engineer | 2                      | 1      | 2                              |   |               |                      |        |  |   |
|             |   |            |                        |        |                                 | 2. ensure site operatives are aware of service engineers presence through initial site meeting                                    |                  |                        |        |                                |   |               |                      |        | Service Engineer                           |   |
|             |   |            |                        |        |                                 | 3. Use of traffic cones to section off workplace where necessary - client to provide.   |                  |                        |        |                                |   |               |                      |        |  |   |
| 7           | personal injury / plant damage as a result of inclement weather | AM         | 2                      | 3      | 6                               | 1. Postponement of operations if deemed safest course of action   | Service Engineer | 2                      | 1      | 2                              | relocation of plant to covered / internal location      | Site          | 1                    | 1      | 1  |   |
| 8           | personal injury from working with electrical plant              | AM         | 2                      | 3      | 6                               | 1. All install and repair electrical work carried out with electrical power isolated  | Service Engineer | 1                      | 3      | 3                              | All electrical work carried out by subcontracted party. |               |                      | 1      | 2  | 2 |
|             |   |            |                        |        |                                 | 2. VED Insulated tools to be used for all electrical operations   |                  |                        |        |                                |   |               |                      |        |  |   |
|             |   |            |                        |        |                                 | 3. Operator trained in basic electrical fault diagnosis.  |                  |                        |        |                                |   |               |                      |        |  |   |
|             |   |            |                        |        |                                 | 4. More complex faults and diagnostics to be attended by specialist electrical engineer.  |                  |                        |        |                                |   |               |                      |        |  |   |
| 9           | danger to operative from working inside the saturator tank      | AM         | 3                      | 3      | 9                               | 1. All work required inside the tank will be carried out by appropriately trained sub-contractor and not attending site engineer. | Service Engineer | 1                      | 3      | 3                              | All electrical work carried out by subcontracted party. |               |                      | 1      | 2  | 2 |
|             |   |            |                        |        |                                 | 2. tank access hatch only to be used for inspection and for access to immediate tank-internal components where applicable         |                  |                        |        |                                |   |               |                      |        |  |   |
|             |   |            |                        |        |                                 | 3. Liquid level will need to be sufficiently low to enable tank hatch opening.  |                  |                        |        |                                |   |               |                      |        |  |   |
|             |   |            |                        |        |                                 | 4. No noxious chemicals present within tank in correct operation.   |                  |                        |        |                                |   |               |                      |        |  |   |

Risk Matrix

|                   |   |   |            |               |             |
|-------------------|---|---|------------|---------------|-------------|
| probable          | likely to occur each year               | 3 | 3          | 6             | 9           |
| possible          | likely to occur in a 10 year period     | 2 | 2          | 4             | 6           |
| remote            | not likely to occur in a 10 year period | 1 | 1          | 2             | 3           |
| <b>ESTIMATION</b> | <b>DESCRIPTION</b>                      |   | 1          | 2             | 3           |
|                   | Likelihood                              |   | <b>LOW</b> | <b>MEDIUM</b> | <b>HIGH</b> |
|                   |   |   | Impact     |               |             |

|            |               |          |                   |
|------------|---------------|----------|-------------------|
| Created By | Andrew Manson | Position | Technical Manager |
| Signed     |               | Date     | 21/09/2016        |

|             |             |          |                     |
|-------------|-------------|----------|---------------------|
| Approved By | Angus Craig | Position | Commercial Director |
| Signed      |             | Date     | 21/09/2016          |