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# Introduction

## Document overview

This document is the software test description of the GSWSA Inventory. It contains the description of tests committed in the GSWSA Test Report document ref. GSWSA Test Plan. These tests are executed during GSWSA Inventory Project integration and verification:

* Software Integration tests,
* Software Verification tests.

## Abbreviations and Glossary

### Abbreviations

|  |  |
| --- | --- |
| DB | Database |
| DBDD | Database Design Description |
| DBMS | Database Management System |
| ER | Entity Relationship |
| FK | Foreign Key |
| GUI | Graphical User Interface |
| HMI | Human Machine Interface |
| HTML | Hypertext Markup Language |
| ID | Identifier Description |
| MS | Microsoft |
| PK | Primary Key |
| RTM | Requirements Traceability Matrix |
| SDD | Software Design Description |
| SQL | Structured Query Language |
| SRS | Software Requirement Specification |
| SSS | Software System Specification |
| TBD | To Be Determined |
| GSWSA | Grand Strand Water and Sewer Authority |
| IT | Information Technology |
| OS | Operating System |

### Glossary

|  |  |
| --- | --- |
| SQL Server management studio | Is the software that the GSWSA Inventory will be running on. |
|  | Operating System |

## References

### Project References

| # | Document Identifier | Document Title |
| --- | --- | --- |
| R1 | 1 | GSWSA TP – van Eck |
| R2 | 2 | GSWSA DBDD |
| R3 | 3 | GSWSA SS/SSS |
| R4 | 4 | GSWSA Test Report |
| R5 | 5 | GSWSA Test Plan |

### Standard and regulatory References

|  |  |  |
| --- | --- | --- |
| # | Document Identifier | Document Title |
| STD1 | SRR\_1 | GSWSA Code of Conduct |

## Conventions

Table 341 Acronym/Conventions

|  |  |
| --- | --- |
| **Acronym** | **Definition** |

# Tests preparations

Before initiating the testing phase, ensure the preparations within this section are followed directly. If these preparations are not completed as written, issues may arise during the testing phase that may not be intentional.

## Preparation phase 1.0.0

To ensure the tests are accurate to real life performance, care will be taken to ensure the tests mimic the use cases of how the deliverable will be utilized by GSWSA once the project is completed.

Tests Affected by preparation:

* Capture Reliability Test
* Archival Reliability Test
* Analytics Support Test
* Data Modification Test
* Legacy Report Test
* Select Script Test

### Hardware preparation

GSWSA administrators are the deciding factor on hardware used in the final product. However as we (the authors and project team) are currently unware of the hardware used for the final implementation in addition to SQL Server being able to run on multiple platforms, hardware configuration and the hardware used in these tests do not currently serve as a notable factor in our testing process.

### Software preparation

To ensure the software aspect of the testing phase is prepared, two main apsects need to be verified. First, ensure SQL Server is properly installed and adjusted for the testing phase. Second, ensure the test environment if applicable is organized and setup for testing the designated scripts.

### Other test preparation

Ensure all data is inserted within the proper values and structure.

### Safety, security and privacy precautions

The deliverable database within this project will hold essential data for GSWSA. To ensure proper safety of the company's data, no live data should be used during testing. ‘Dummy’ data shall be used to ensure private information owned by the stakeholders is not released to the public or otherwise misused.

# Tests descriptions

Each test within this section ensures proper functionality of the deliverable for this project.

Tests:

1. TP-REQ-01: Capture Reliability Test
2. TP-REQ-02: Archival Reliability Test
3. TP-REQ-03: Analytics Support Test
4. TP-REQ-04: Data Modification Test
5. TP-REQ-05: Legacy Report Test
6. TP-REQ-06: Select Script Test

## Testing Phase 2.0.0

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-01** |  |
| Test description | Verify the database system capture reliability is 100% without fail. |  |
| Verified Requirement | TP-REQ-01 | Verification method: I, A, D,T |
| Initial conditions | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | Insert a new set of values into any table of the GSWSA database. |  |
| Data collection actions | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assumptions and constraints | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | Start database | Database is started |
| 2 | Insert new fields into the database | Mock entry added |
| 3 | Change expected values in the test case to match the insert fields. | Test case will determine if the inserted fields match the expected outcome. |
| 4 | Execute and verify test case results | Test should be logged and return true. |

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-02** |  |
| Test desc. | Verify the database system archiving is 100% without fail |  |
| Verif. Req. | TP-REQ-02 |  |
| Init. Cond. | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | Input a new field that is sensitive. |  |
| Data collection | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assum & constr | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and eval crit** |
| 1 | Start database | Database is started |
| 2 | Insert new sensitive field | Mock entry is added |
| 3 | Change expected values in the test case to match the insert fields. | Test case will determine if the inserted fields match the expected outcome. |
| 4 | Execute and verify test case results | Test should be logged and return true. |

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-03** |  |
| Test desc. | Verify that the database system can support data analytics |  |
| Verif. Req. | TP-REQ-03, |  |
| Init. Cond. | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | N/A |  |
| Data collection | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assum & constr | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and eval crit** |
| 1 | Start Database | Database is started |
| 2 | Display analytics | Analytics displayed |
| 3 | Execute and verify test case results | Test should be logged and return true. |

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-04** |  |
| Test desc. | Verify that database system can allow GSWSA users to modify user capabilities |  |
| Verif. Req. | TP-REQ-04 |  |
| Init. Cond. | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | N/A |  |
| Data collection | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assum & constr | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and eval crit** |
| 1 | Start database | Database is started |
| 2 | Change field capability | Field has new capability |
| 3 | Change expected values in the test case to match the insert fields. | Test case will determine if the inserted fields match the expected outcome. |
| 4 | Execute and verify test case results | Test should be logged and return true. |

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-05** |  |
| Test desc. | Verify that the database system supports the legacy report system |  |
| Verif. Req. | TP-REQ-05 |  |
| Init. Cond. | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | N/A |  |
| Data collection | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assum & constr | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and eval crit** |
| 1 | Start database | Database is started |
| 2 | Display legacy report | Display legacy report |

|  |  |  |
| --- | --- | --- |
| **Test ID** | **TP-REQ-06** |  |
| Test desc. | Verify that the database system supports GSWSA select scripts |  |
| Verif. Req. | TP-REQ-06 |  |
| Init. Cond. | Setup and run the CREATE and INSERT scripts of the GSWSA Inventory Project. |  |
| Tests inputs | N/A |  |
| Data collection | Recording and post processing of output data |  |
| Tests outputs | The test should give a Boolean true or false if it has passed/failed. |  |
| Assum & constr | N/A |  |
| Expected results and criteria | The expected result is a Boolean true value. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and eval crit** |
| 1 | Start database | Database is started |
| 2 | Run Test | Test should return true. |