



# **Water Quality Exchange STORET Central Warehouse Version Description Document**

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**Developed by:**



**Systems Engineering Center (SEC)  
1010 N. Glebe Road  
Arlington, VA 22201**



This Version Description Document has been reviewed and approved for use in the project development process. Minor changes and corrections may be made to this document without re-approval.

Ganesh Thadkamalla, Tech Lead, ITS-ESE, Lockheed Martin	<b>Date:</b>	05/31/2007
Gary Simms, QA/Testing, ITS-ESE, Lockheed Martin	<b>Date:</b>	05/31/2007
Edward Williams, Configuration Management, ITS-ESE, Lockheed Martin	<b>Date:</b>	05/31/2007
Ernestine Bryant, CTM, ITS-ESE, Lockheed Martin	<b>Date:</b>	05/31/2007



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## 1.0 INTRODUCTION

The version description document (VDD) is the primary configuration control document used to track and control versions of software to be released to the operational environment. It is a summary of the features and contents for the software build. It identifies and describes the version of the software configuration item (CI) being delivered to the customer, including all changes to the software CI since the last VDD was issued. Every unique release of the software (including the initial release) will be described by a VDD. If multiple forms of the software CI are released at approximately the same time (e.g., to different sites), each must have a unique version number and a VDD.

The VDD is part of the software CI product baseline. The VDD, when distributed, should be sent with a cover memo that summarizes, on a single page, the significant changes that are included in the release. This will serve as an executive summary for the details found in the attached VDD. The treatment should be titled, on the cover memo, as "Summary of Changes."

### 1.1 Roles and Responsibilities

The following roles and responsibilities apply to the VDD:

The Lockheed Martin Information Technology (LMIT) team is responsible in developing and maintaining this VDD. The LMIT Configuration Management (CM) team will be custodian of this VDD.

### 1.2 Acronyms and Definitions

The following acronyms and definitions are provided to ensure that the content of this document will be clear to representatives from all organizations that use it.

Acronyms	Definition
EPA	Environmental Protection Agency
RTP	Research Triangle Park
CI	Configuration Item
COTS	Commercial-off-the-Shelf
ETL	Extraction, Transformation and Loading
ITS-ESE	Information Technology Services Environmental Systems Engineering
NCC	EPA National Computing Center in Research Triangle Park, North Carolina. Formerly known as NTSD
SEC	Systems Engineering Center
STORET	STORET (acronym for STORage and RETrieval) is a repository for water quality, biological and physical data and used by state environmental agencies, EPA and other federal agencies, universities, private citizens and others. More information can be found at: <a href="http://www.epa.gov/storet/">http://www.epa.gov/storet/</a> .



Acronyms	Definition
STORETW	STORETW (acronym for <b>ST</b> orage and <b>RE</b> trieval Data <b>W</b> arehouse) is the Data warehouse component of STORET for water quality, biological and physical data and used by state environmental agencies, EPA and other federal agencies, universities, private citizens and others. More information can be found at: <a href="http://www.epa.gov/storet/">http://www.epa.gov/storet/</a> .
WQX	Water Quality Exchange



## 2.0 SCOPE

### 2.1 Identification

Identification number: 50-STORE-VDD-0054 50-0054(STORET Warehouse VDD)2007-0531.doc

Title: **STORET Warehouse Version Description Document**

Abbreviations: **STORET\_WH**

Version number: 2.0.7

Release number: 1.0

### 2.2 Applicability

EPA-RTP, Environmental Protection Agency's (EPA) Research Triangle Park (RTP) center at Durham, North Carolina will be using this application on AIX Unix, ORACLE, and Oracle Application Server environment. The Extract Transform and Load (ETL) will be run at EPA Headquarter and the warehouse is transferred to EPA-RTP

Please see section 4.2.3 for a description of the environment intended for this application.

### 2.3 System Overview

The STORET Data Warehouse Application Upgrade Project is to enhance both User Interface and Reporting sections of the application. User Interface upgrade includes enhancement of the help system and query features for the Data Warehouse Web Site. The enhancements will be in conformance with the look-and-feel of the existing Warehouse Web Site. This project does not include an overhaul of the Web Interface. Reporting upgrade includes development of Metadata Reports, Project Station Weights, Combine multiple report files into a single compressed file, and add activity comment and activity depth reference point, and Support Strategic Plan Measures.

### 2.4 Document Overview

This document describes tracking and controlling versions of software (**STORET Warehouse**) to be released to the operational environment. It also provides instructions to deploy source code files on the production.

Also see section 1.0

### 2.5 Points of Contact

#### LM contact information:

##### **Ernestine Bryant**

Contract Task Manager  
National Environmental Information Systems Engineering Center  
1010 N. Glebe Rd., Suite 800  
Arlington, VA 22201  
Telephone: 703-647-5765 office  
Email: Ernestine.bryant@lmco.com

##### **Ganesh Thadkamalla**

National Environmental Information Systems Engineering Center



1010 N. Glebe Rd., Suite 800  
Arlington, VA 22201  
Telephone: 703-647-5705 office  
Email: ganesh.thadkamalla@lmco.com

**Edward Williams**

Configuration Management  
National Environmental Information Systems Engineering Center  
1010 N. Glebe Rd., Suite 800  
Arlington, VA 22201  
Telephone: 703-647-5608 office  
Email: edward.williams@lmco.com

**EPA contact Information:**

**Randy E. Hill**, Task Order Project Officer  
Environmental Protection Agency  
OEI/OIAA, 2843T  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460  
Telephone: 202-566-0644 Fax: 202-566-0669  
Email: Hill.RandyE@epamail.epa.gov

**Dwane Young**

Environmental Protection Agency  
OEI/OIAA, 2843T  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460  
Telephone: 202-566-0616 Fax: 202-566-0669  
Email: [young.dwane@epa.gov](mailto:young.dwane@epa.gov)

**Kevin Christian**, Assistant Task Order Project Officer

Environmental Protection Agency  
OEI/OIAA, 2843T  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460  
Telephone: 202-566-1180 Fax: 202-566-0669  
Email: [christian.kevin@epa.gov](mailto:christian.kevin@epa.gov)



### 3.0 REFERENCE DOCUMENTS

- STORET Warehouse Requirement Document (Doc. No: **08-STORET-SRS-0110**).
- STORET Warehouse Test Plan.
- STORET Warehouse Test Report.





## 4.0 VERSION DESCRIPTION

This release is an update to the STORET Data Warehouse production application.

This package contains application files and documents described in subsequent sections.

### 4.1 Inventory of Materials Released

1. 50-0054(STORET Warehouse VDD)2007-0531.doc
2. STORETWH\_PREPROD\_05\_31\_2007\_2.0.7.zipSoftware package

### 4.2 Inventory of Software Contents

The inventory of CI is quantified in subsequent paragraphs.

#### 4.2.1 Software

Workset Filename	Revision
DW_process_data_request.sql	1.13
dw_project_blob_md.sql	1.1
DW_result_download_custom.sql	1.4
DW_station_download_custom.sql	1.3
DW_station_hub_custom.sql	1.4
APP_COLUMN_NAME_UPD.SQL	1.3
DW_SYNONYMS.sql	1.5
DW_result_metadata.sql	1.7
c20-installation_instructions.txt	1.15
char_stn_table.sql	1.3
char_table.sql	1.2
lu_chartype_tables.sql	1.4
di_project_table.sql	1.4
project_rel_tables.sql	1.3
DW_user_def_hab.sql	1.4
fa_habitat_result_table.sql	1.3
fa_station_table.sql	1.4
create_storetw.sql	1.2
alter_station_project.sql	1.1
create_station_summary_view.sql	1.6
create_ws_huc_char_summary.sql	1.7
create_ws_huc_org_char_summary.sql	1.7
create_ws_huc_org_summary.sql	1.8
create_ws_station_summary.sql	1.8
insert_web_methods_data.sql	1.0
refresh_station_char.sql	1.2
ws_station_view.sql	1.0
ws_synonyms.sql	1.2
install_wh_db_changes.sql	1.2
MT_char_chartype.sql	1.1
SP_REFRESH_STATION_CHAR.sql	1.0



Workset Filename	Revision
SP_REFRESH_STATION_CHAR_NEW.SQL	1.0
SP_REFRESH_WS_HUC_CHAR_SUMMARY.SQL	1.0
SP_REFRESH_WS_HUC_ORG_SUMMARY.SQL	1.0
SP_REFRESH_WS_ORG_CHAR_SUMMARY.SQL	1.0
SP_REFRESH_WS_STATION_DATA.SQL	1.0
SP_REFRESH_WS_STATION_SUMMARY.SQL	1.0
SP_REFRESH_WS_TABLES.sql	1.0
SP_REFRESH_WS_TABLES_NEW.SQL	1.0
SP_RUN_WATERSHED_TAB_REFRESH.SQL	1.0
sp_sequence_synch.sql	1.2
wh_ETL_synonyms.sql	1.0
WH_grants.sql	1.0
wh_mod_attr.sql	1.0
WH_new_attr.sql	1.0
wh_new_obj.sql	1.0
wqx_chartype_assignments.sql	1.0
analyze_appl_objects.sql	1.0
analyze_objects.sql	1.0
APP_COLUMN_NAME.sql	1.4
DW_storet_help.html	1.4
lat_long_ex.gif	1.0
DW_batch_activity_report.sql	1.0
DW_data_requests_table.sql	1.1
DW_glob_var.sql	1.1
DW_GRANTS.sql	1.3
DW_PERMISSIONS.sql	1.1
DW_schedule_batch_jobs.sql	1.0
DW_batch_download_pickup.sql	1.0
DW_bio_result_criteria_geo.sql	1.2
DW_bio_result_criteria_project.sql	1.2
DW_bio_result_criteria_station.sql	1.0
DW_blob_download.sql	1.0
DW_blob_handler.java	1.0
DW_bottom_of_page.sql	1.2
DW_char_alias_popup.sql	1.0
DW_char_select.sql	1.0
DW_community_select.sql	1.0
DW_counties_popup.sql	1.0
DW_date_select.sql	1.0
DW_display_calendar.sql	1.0
DW_exec_os.java	1.0
DW_extref_popup.sql	1.0
DW_geo_select.sql	1.0
DW_hab_result_criteria_geo.sql	1.2
DW_hab_result_criteria_project.sql	1.2
DW_hab_result_criteria_station.sql	1.0
DW_home.sql	1.0
DW_huc_popup.sql	1.0



<b>Workset Filename</b>	<b>Revision</b>
DW_mail_pkg.sql	1.0
DW_medium_select.sql	1.0
DW_monthly_stats.sql	1.0
DW_process_batch_requests.sql	1.0
DW_process_data_request_list.sql	1.0
DW_process_pendingbatch_imm.sql	1.0
DW_proj_popup.sql	1.0
DW_project_select.sql	1.0
DW_record_data_request.sql	1.1
DW_report_pending_requests.sql	1.0
DW_result_count.sql	1.4
DW_result_criteria_geo.sql	1.2
DW_result_criteria_project.sql	1.2
DW_result_criteria_station.sql	1.0
DW_result_download_zip.sql	1.3
DW_result_hub_custom.sql	1.7
DW_selection_criteria.sql	1.0
DW_selection_criteria_station.sql	1.0
DW_station_count.sql	1.2
DW_station_download_zip.sql	1.0
DW_station_popup.sql	1.0
DW_station_select.sql	1.0
DW_top_of_page.sql	1.1
DW_storet.js	1.0
column_comments.sql	1.2
cr_appl_inde.sql	1.0
di_act_medium.sql	1.0
di_activity_intent.sql	1.0
di_activity_matrix.sql	1.0
di_biopart.sql	1.0
di_community_sampled.sql	1.0
di_date_table.sql	1.0
di_group_type.sql	1.0
di_subject_taxon.sql	1.0
db_tables.sql	1.0
drop_temp_tables.sql	1.0
estry_tables.sql	1.2
create_bio_temp_tables.sql	1.1
fa_bio_result_const.sql	1.0
fa_bio_result_data1.sql	1.3
fa_bio_result_data2.sql	1.1
fa_bio_result_drop_cols.sql	1.0
fa_bio_result_index.sql	1.0
fa_bio_result_table.sql	1.1
update_bio_temp_tables.sql	1.0
update_bio_temp_tables2.sql	1.0
fa_blob.sql	1.1
create_habitat_temp_tables.sql	1.0



<b>Workset Filename</b>	<b>Revision</b>
fa_habitat_result_const.sql	1.0
fa_habitat_result_data1.sql	1.2
fa_habitat_result_data2.sql	1.1
fa_habitat_result_drop_cols.sql	1.0
fa_habitat_result_index.sql	1.0
update_habitat_temp_tables.sql	1.0
create_temp_tables.sql	1.1
fa_regular_result_const.sql	1.0
fa_regular_result_data1.sql	1.3
fa_regular_result_data2.sql	1.1
fa_regular_result_drop_cols.sql	1.0
fa_regular_result_index.sql	1.0
fa_regular_result_pdl_data1.sql	1.4
fa_regular_result_table.sql	1.1
update_temp_tables.sql	1.0
fa_station_drop_cols.sql	1.0
etl_glob_var.sql	1.0
f_biopt.sql	1.0
f_char_name.sql	1.0
f_createflbrmk.sql	1.0
f_createfNAICS.sql	1.0
f_estry.sql	1.0
f_fieldset.sql	1.0
f_mad.sql	1.0
f_prmvl.sql	1.0
f_station_visited.sql	1.0
gen_idxstrg.sql	1.0
gen_tblstrg.sql	1.0
geo_tables.sql	1.0
lu_char_alias.sql	1.0
lu_station_alias.sql	1.0
mad_tables.sql	1.0
stn_std_datum.sql	1.0
materialized_views.sql	1.0
citation_table.sql	1.4
co_op_addr.sql	1.2
co_op_eaddr.sql	1.2
co_org_table.sql	1.3
lab.sql	1.3
lab_addr.sql	1.2
lab_analytical_proc.sql	1.3
lab_eaddr.sql	1.2
lab_sample_prep_proc.sql	1.3
org_elec_addr.sql	1.4
org_phy_addr.sql	1.3
program_table.sql	1.3
project_rel_tables.sql	1.0
sample_collection_proc.sql	1.3



Workset Filename	Revision
sample_gear.sql	1.4
sample_preservation.sql	1.4
org_tables.sql	1.2
performance_tuning.sql	1.0
statn_types_tables.sql	1.0
storet1_grants.sql	1.0
storet_grants.sql	1.0
table_comments.sql	1.0
tbs_coalesce.sql	1.0
unit_conversion.sql	1.0
update_TSRUOM.sql	1.0

#### 4.2.2 Database

##### Development/QA:

Database Version: Oracle 9.2.0.7  
Database Name: STORET@ESE-OK  
Schema Name: STORETW, STORETWEB, STORET1, STORET  
Application Servers: ESE-PA  
Production Platform: IBM AIX Version 5.2 and Windows 2003

##### Staging:

Database Version: Oracle 10.1.2, Oracle 9.2.0.7  
Database Name: STORMOD@PERCHERON  
Schema Name: STORETW, STORETWEB, STORET1, STORET  
Application Servers: QUARTER  
Production Platform: IBM AIX Version 5.2

##### Production:

Database Version: Oracle 10.1.2  
Database Name: STORMODA/STORMODB@SHIRE (Whichever is online)  
Schema Name: STORETW, STORETWEB  
Oracle Application Server machine: Azteca  
Production Platform: IBM AIX Version 5.2

#### 4.2.3 Operating System and Environment

Development/QA @ SEC		
Ese-PA (App Server)	Ese-OK (DB Server)	(App. Server 3)



<b>Hardware</b> Dell x86 with 2x2.8GHz & 3.75 GB RAM  <b>Software</b> O/S: Windows 2003  Application Server: Oracle Application Server 10g Rel. 2	<b>Hardware</b> IBM P615 with 2X1.2 GHz & 6 GB RAM  <b>Software</b> O/S: AIX 5L  Database : Oracle 9.2.0.7	<b>Hardware</b>   <b>Software</b>
<b>Production @ EPA</b>		
<b>Azteca (App Server)</b>	<b>Shire (DB Server)</b>	<b>(App. Server)</b>
<b>Hardware</b> IBM Blade  <b>Software</b> O/S: Red Hat Enterprise Linux 3.0  Oracle Application Server 10g R2	<b>Hardware</b> IBM P570  <b>Software</b> O/S: AIX5.2  Oracle Database 10g rel2	<b>Hardware</b>   <b>Software</b>
<b>Staging @ EPA</b>		
<b>Quarter (App Server)</b>	<b>Percheron (DB Server)</b>	
<b>Hardware</b> IBM Blade  <b>Software</b> O/S: Red Hat Enterprise Linux 3.0  Oracle Application Server 10g R2	<b>Hardware</b> IBM P570  <b>Software</b> O/S: AIX5.2  Oracle Database 10g rel2	

#### 4.2.4 Commercial Off-the-Shelf Products

The application relies on the following Commercial Off-the-Shelf Products (COTS):

- Oracle database 10g Rel2
- Oracle Application Server 10g Rel2
- Internet Explorer 5.0 or higher

#### 4.2.5 Metadata

Please refer to CI c20-Installation\_instructions.txt header, as listed in Section 4.2.1, for database parameter settings.

### 4.3 Changes Installed

<b>Change Report</b>	<b>Description</b>
----------------------	--------------------



ESE-WQX_CR_37	Warehouse Sequence Synchronization
ESE-WQX_CR_36	Include code to delete duplicate *POINT OF RECORD stations.
ESE-WQX_CR_35	Report column name changes for Bio results downloads
ESE-WQX_CR_31	Cleanup individual result download files after performing TAR.
ESE-WQX_CR_29	Implement WQX ETL 1.0.4 database changes into the warehouse.
ESE-WQX_CR_38	Integrate Web Services database changes into Warehouse ETL
ESE-WQX_DR_39	Increase di_project attributes datalength whose source is from tsmgntxt table

#### 4.4 Interface Compatibility

The materialized views (MV\_%) and the Web Services summary tables (ws\_%) should be refreshed whenever there is a change to the result fact tables. This summary information is necessary for Web Services and Watershed Summary User Interface application.

The following scripts should be used to refresh the tables mentioned above.

```
@storetw\materialized_views.sql;  
@storetw\web_services\create_station_summary_view.sql  
@storetw\web_services\create_ws_huc_org_summary.sql  
@storetw\web_services\create_ws_huc_char_summary.sql  
@storetw\web_services\create_ws_huc_org_char_summary.sql  
@storetw\web_services\create_ws_station_summary.sql
```

#### 4.5 Adaptation Data

None

#### 4.6 Installation Instructions

- Extract Storetw and its contents from the STORETWH\_PREPROD\_05\_31\_2007\_2.0.7.zip file into c:\storetw.
- Make a backup of the DW\_GLOB\_VAR package for current production setting. This will be useful.
- Delete STORETW objects in the STORMOD database
- Follow instructions in c:\storetw\c20-Installation\_instructions.txt to Install Data Warehouse.
- Test the deployed application using [http://www.epa.gov/storet/dw\\_home.html](http://www.epa.gov/storet/dw_home.html) or [http://iaspub.epa.gov/stormodb/DW\\_home](http://iaspub.epa.gov/stormodb/DW_home)

#### Point of Contact to be consulted if there are problems:

Ganesh Thadkamalla 703-647-5705



#### **4.7 Bibliography of Reference Documents**

- STORET Warehouse Requirement Document (Doc. No: **08-STORET-SRS-0110**).
- STORET Warehouse Test Plan. Document number is not available yet.
- STORET Warehouse Test Report. Document number is not available yet.

#### **4.8 Possible Problems and Known Errors**

- The Compression of the Result data files, metadata file and related Project binary objects are performed by listing all the filenames explicitly in the UNIX tar command. The wild character is not working when issued through Oracle's Java stored procedure. The download is successfully tested for 37 project Blobs as part of Metadata Report and result download. If the string of all filename exceeds 4000 characters it may not include all the project binary objects in the compressed file.





## 5.0 APPENDICES

Not Applicable.