



**To:** Distribution

**From:** Ernestine Bryant, STorage and RETrieval (STORET), Technical Project Leader (TPL), SDC/SAIC

**Subject:** Minutes of STORET Change Control Board (CCB) Meeting

## 1.0 Purpose

A CCB Meeting was held on May 15, 2003 at the Systems Development Center (SDC). The purpose of the meeting was to review and address the status of the STORET Project activities, resolve project issues, and ensure that changes are within the Task Order scope and are processed in a visible and traceable manner.

## 2.0 Attendees

### SDC

Ernestine Bryant  
Stephen Smith  
Blythe Norris  
Joseph Wilson  
Ganesh Thadkamalla

### EPA

Robert King (TOPO)  
Lee Manning (ATOPO)  
Cary McElhinney

## 3.0 Discussion Topics

The following sections detail the discussions of the project tasks and associated Software Incident Reports (SIRs).

### 3.1 Administrative Items

B. King directed the project team to update the views for compatibility with the STORET version 2.0 database as referenced in section 16.8 in the Project Plan.

### 3.2 Report Module

The group discussed several alternatives to improve performance and reduce required system resources to generate an export file of result data which included:

- C Provide selectable columns similar to the Central Warehouse implementation. Because of the normalized table structure, this will be many times more complex than the Central Warehouse. This approach will also need careful design to prevent users from making choices that will still join many tables and defeat the purpose.
- C Give users access to the Central Warehouse Extract Transfer and Load (ETL) scripts. Users could then periodically refresh the warehouse tables every time additional data was added to the database. Also, the user will be limited to Physical and Chemical data only.
- C Construct several smaller result exports to minimize table joins. This approach is the most straight forward to develop, and could be directly engineered to achieve the desired purpose.
- C Database tuning. This approach has not achieved the desired results.
- C Construct printed report that can be saved as a delimited file. Using Oracle Reports built-in technology will allow for rapid report construction. Some of the logic for format triggers to hide/show columns is already in place. It may be possible to parse the query as done for printed Report Details. Report progress wheels could be displayed. A significant disadvantage was the user will likely have to run the query twice, once to the Previewer, then again to the file, and the previewed version will probably be of little utility.

The group decided to break the Report Module version 2.0 Result Details Export into a Physical and Chemical Report, a Biological report, and a Habitat Assessment report. It was initially thought that each one of these report divisions would be available as a Small, Medium, and Large version with the size signifying more represented columns of data. During the meeting, a fourth report designated as Semi-Medium was added to the Physical/Chemical division.

An initial set of proposed columns to appear in the new Result Export reports for Physical Chemical results were reviewed. Columns were added and deleted on various reports from the initial proposed set. The initial set of columns and the modifications may be seen in Attachment A.

Before modifications, each sequentially larger report included all the columns of the previously smaller report, and added additional columns to make it larger. The modifications did not make this always true, but choices were made in an effort to reduce overall report volume.

The performance statistics using the initial set of proposed columns were reviewed. A tremendous improvement in performance and required system resources had been achieved over the version 2.0 Result Detail Export. Result exports could now be achieved ranging from less than 10 seconds retrieving 2000 records using the Small report to 2.25 hours retrieving 660,000 records using the Large report. This testing had been against a database with approximately 3.5 million records, using a standard desktop Pentium 4 computer, with a temporary tablespace size set to 2 gigabytes. The Lab Remark function was currently the primary performance inhibitor in the Large report, almost tripling the amount of required time. The Lab Remark function will be analyzed to see what can be done to achieve better performance. The second, but not so nearly significant performance inhibitor, was the long text fields.

The selection parameters for the Small, Semi-Medium, and Medium reports will be Organizations, Projects, Stations, Characteristics, and Activity Start Date Ranges. The selection parameters for the Large report will be Organizations, Projects, Stations, Characteristics, Activity Start Date Ranges, and Latitude/Longitude.

A typical SQL statement will require the use of a "union" to include Portable Data Logger Results with Physical and Chemical results. This "union" will have a significant undesirable impact on performance and required system resources. Portable Data Logger Results will be included with Physical and Chemical results in some manner which will not disproportionately impact performance and resources. Creation of an additional report to provide Portable Data Logger information was agreed to be an acceptable alternative.

Field sets will be included in one or more of the result reports. This will likely require the use of a function or similar methodology as applied for Lab Remarks.

### **3.3 Central Warehouse**

Beta release C1.1B.3 of the Central Warehouse had been installed at Research Triangle Park (RTP). The Central Warehouse tables created during the test run of the updated ETL scripts had been migrated to the Intranet (VALLEY/CANYON) environment at RTP to support application testing. The accompanying Web interface had also been installed.

Following initial testing, the entire warehouse structure was migrated to the MOUNTAIN/ZION production environment. A link to the C1.1B.3 release will not be

supplied on the main STORET page. The link will be provided to a select group for feedback.

Application improvements implemented since the C1.1B.3 release were discussed. They include:

- C Station Alias and Station Name search functionality.
- C Improved Netscape support.
- C Implementation of Help.
- C The addition of long text fields to reports.
- C Additional JavaScript error checking and form validation.

The overall Central Warehouse timeline was discussed. The release planned for May 22, 2003 will be postponed so that the ETL scripts and Web interface can be updated for STORET v2.0 data model compatibility. In addition, the scope of the next release will be revisited over the next few weeks to determine what new functionality will be supported. A revised timeline will be developed following these discussions.

The activities, currently in progress, to upgrade the current Central Warehouse ETL software and Web interface for STORET v2.0 compatibility are:

- C Establishing a development environment with production v2.0 sample data.
- C Mapping v2.0 data for all Central Warehouse report columns.
- C Analyzing the logic of the Station, Regular Results, Biological Results, and Habitat Result views to help establish business rules for the v2.0 compatible ETL software.

The next release will:

- C Include all types of STORET Result data (physical/chemical, biological, and habitat) and Station details information.
- C Be fully STORET v2.0 compatible.
- C Focus on data delivery functionality.

Additional possible functionality enhancements for the new release were brain stormed and the following list compiled. The items to be included in the next release will be determined during future design sessions.

- C Create the ability to download all results associated with an Activity that contains at least one result matching the selected search criteria.
- C Provide an additional Result search criteria page which contains Activity Medium and Sample Matrix.
- C Create the ability to retrieve all Results for an Organization from the Results by Project page, and change page name to Results by Organization and Project.
- C Create the ability to ZIP (i.e., compress) Result report files before downloading.
- C Add columns that are new to the v2.0 data model such as Quality Assurance/Quality Control (QA/QC) Indicator.

The release will be part of a transition strategy for the STORET web site that will involve updating all web resources to STORET v2.0 compatibility. This may include the decommissioning of the current STORET Web Application, and the establishment of Portable Document Format (PDF) Meta-data reports that will be used to supplement the data provided by the Central Warehouse Station and Result data reports.

The Central Warehouse report designs were analyzed to identify changes that will be made for the v2.0 compatible release. In addition to adding new columns to the reports, some columns were marked for deletion. In most cases, these can be derived from keys that exist in the fact table, or added at a future date. This matter will be discussed in more detail during future meetings.

Column groups were also added to the reports to simplify report customization and reduce the amount of screen space required by the report customization pages. A column group clusters two or more related columns under a single title. When a user selects a column group, all of the columns that comprise that group are selected.

The Central Warehouse Station Report (see Attachment B) was discussed in detail and the following changes were made:

- C The column Surface Water/Ground Water (SW/GW) Indicator was added after Secondary Type. Rules for populating this column will be determined in future meetings.

- C The column Well Name was added after Well Number.
- C The column Point Name was added after Point Sequence Number.
- C The column North American Industry Classification System (NAICS) Code was added after Pipe Number. This column will most likely be populated by a function that will select only the top four NAICS Codes for a Station.
- C The column Station Document/Graphic Name was added as the last column in the Report.
- C The following Spring columns were added after the NAICS Code: Spring Type Improvement, Spring Type Code, Spring Type Name, and Spring Other Name.
- C The following columns were removed from the report: Country Code, Federal Information Processing Standard (FIPS) State Code, State Postal Code, FIPS County Code, and Reach File Version 3.0 (RF3) River Reach Code.
- C The names of the columns Organization ID and Organization Name were changed to Org ID and Org Name respectively for consistency with other reports.
- C The column group Lat/Long was added after Point Name with the following columns: Latitude and Longitude.
- C The column group Lat/Long Info was added after Lat/Long with the following columns: Horizontal Datum, Geopositioning Method, and Map Scale.
- C The column group Reach File Version 1.0 (RF1) Info was added after Hydrologic Unit Name with the following columns: RF1 Segment Code, RF1 Segment Name, and RF1 Mileage.
- C The column group Additional Elevation Info was added after Elevation with the following columns: Elevation Datum and Elevation Method.
- C The column group Estuary Info was added after National Resource Conservation System (NRCS) Watershed ID with the following columns: Primary Estuary and Secondary Estuary.

The Central Warehouse Regular Result Report (see Attachment C) was discussed in detail and the following changes were made:

- C The columns Geopositioning Method and Horizontal Datum were dropped from the Station Location Info section.
- C The column group Station Location Info was added to the Basic Station Info section.
- C The following columns were moved from the Station Location Info section to the Station Location Info column group: Station Latitude, Station Longitude, State, County, and Hydrologic Unit Code (HUC). This group will be selected by default.
- C The Station Location Info section was deleted from the report.
- C The following columns were removed from the Basic Activity Info section: Field Procedure ID, Field Procedure Name, Gear Config ID and Gear Config Name.
- C The Sample Handling Info section and all of its columns (i.e., Container Type, Container Color, Temp. Pres. Type, and Sample Handling Desc.) were removed from the report.
- C The column group Additional Activity Location Info was added to the Actual Activity Location Info section with the following new columns: Geopositioning Method, Horizontal Datum, and Map Scale.
- C The order of the Actual Activity Location Info section was changed to: Actual Location Point Type, Actual Point Sequence #, Actual Point Name, Actual Activity Latitude, Actual Activity Longitude, Well Number, Pipe Number, Additional Activity Location Info.
- C The section Activity Meta Data was added with the following columns: Sample Collection ID, Field Gear ID, Field Gear Config ID, and Sample Pres. ID.
- C The following columns were removed from the Basic Result Info section: Result Std Value and Result Std Unit.
- C The name of the column Result Type was changed to Value Type.
- C The name of the column Result Statistic was changed to Statistic Type.
- C The name of the column Result Numeric Value was changed to Result Value as Number.
- C The name of the column Result Text Value was changed to Result Value as Text.

- C The name of the column Text Result was changed to Result Free Text.
- C The column order of the Basic Result Info section was changed to: Characteristic Name, Sample Fraction, Value Type, Statistic Type, Result Value as Text, Result Value as Number, Units, Result Comment, Result Free Text, Weight Basis, Temperature Basis, Duration Basis, Particle Size Basis, Distance Measured From, and Distance Measured To.
- C The column Analytical Proc. Acronym was added to the beginning of the Analytical Proc. Info section.
- C The following columns were removed from the Analytical Proc. Info section: Analytical Proc. Name, Sample Prep. Proc., and Proc. Exception.
- C The column Additional Analytical Proc. Info was added to the Analytical Proc. Info section.
- C The following columns were moved from the Basic Lab Info section to the Additional Analytical Proc. Info column group: Detection Limit, Detection Limit Descript., Lower Quantification Limit, and Upper Quantification Limit.
- C The columns Dilution Ind, Recovery Ind, and Correction Ind were moved from the Result QA Info section to the Basic Lab Info section.
- C The column group Other Lab Info was added to the Basic Lab Info section with the following columns: Lab ID, Lab Name, Lab Cert., Lab Batch ID, and Analysis Date.
- C The column order of the Basic Lab Info section was changed to: Lab Remark, Dilution Ind, Recovery Ind, Correction Ind, and Other Lab Info.
- C The column Correction for Bias Ind was added to the Result QA Info section.
- C The column order of the Result QA Info section was changed to: No. of Reps., Precision, Bias, Conf Level, and Correction for Bias Ind.

The Central Warehouse Biological Result Report (see Attachment D) was discussed in detail and the following changes were made:

- C The name of the Basic Trawl Info section was changed to Net Tow.



- C The following columns were removed from the Net Tow section: Trawl Start Point Type, Trawl Start Point Seq., Trawl Stop Point Type, and Trawl Stop Point Seq.
- C The following columns were added to the Net Tow section: Fished Duration Measure, Fished Duration Unit, Boat Speed, Boat Speed Unit, Fished Distance, Fished Distance Unit, Rel. Current Dir., Rel. Wind Dir., and Trawl Comment.
- C A Basic Electroshock Info section was added with the following new columns: Voltage Measure, Current Type Code, Amperage Measure, Pass Count, Pass Length Measure, Pass Length Unit, Pulse Rate Measure, Electroshock Comment, Total Energzd Time, and Energzd Time Unit.
- C A Net Non-Tow section was added with the following new columns: Sampling Duration, Sampling Duration Unit, Orientation to Current, Rel. Current Dir., Rel. Wind Dir., and Trap Net Comment.
- C The column group Characteristic Group Info was added to the Bio Result Info section with the following columns: Bio Result Group ID, Bio Result Group Type, Bio Result Group Subject Taxon, and Bio Result Group Desc.
- C The column group Single Taxon Group Summary Info was added to the Bio Result Info section with the following columns: Number in Group and Group Count Type.
- C The column group Multi-Taxon Pop. Census Info was added to the Bio Result Info section with the following columns: Feeding Group, Pollution Tolerance, Trophic Level, Habit, Voltinism, Cell Shape, and Cell Form.
- C The column group Single Taxon Frequency Class Info was added to the Bio Result Info section with the following columns: Phys/Bio Ind, Bio Result Group ID (sex), Bio Result Group ID (lifestage), Bio Result Group Class Var, Class Prim Desc, Class Sec Desc, Class Lower Bound, Class Upper Bound, and Units.
- C The column group Single Taxon Individual Info was added to the Bio Result Info section with the following columns: Number in Group and Bio Individual Number.

Note: In addition, all changes made to the Regular Result Report were inherited by the Biological Result Report.

The report design changes listed above will be reviewed and discussed in more detail at the next meeting.

A demonstration was given showing how an Extensible Markup Language (XML) data feed could be used to add Station or Result data to the Central Warehouse using standard XML and Oracle technology. The demonstration was followed by a brief discussion of Web Services and how the Central Warehouse could integrate with Window to My Environment. Continued discussions of these topics are planned for future meetings.

### **3.4 STORET version 3.0**

The various items listed below were periodically raised regarding Joint Requirements Planning (JRP) and Joint Application Design (JAD) preparation and anticipated changes.

- C The focus of the JRP will be the “What” for STORET v3.0 (i.e., requirements, business rules), not the “How” (i.e., design, architecture). The STORET v2.0 server model and window flows will not be needed at this time.
- C STORET v2.0 business rules by functional area (e.g., Projects, Stations, etc.) will be distributed before the initial JRP. These rules will be evaluated for their applicability to STORET v3.0. Business rule summaries are needed for all functional areas of the system. Although the focus areas will be Trips, Sampling, and Results, it is anticipated that discussions in other areas will be required. The project team will prepare drafts of these business rule listings for review. Business rules associated with Security, System Administration, and Batch will be excluded from the JRP discussion.
- C At the end of the JRP, the project team will present a quick demonstration of the “look and feel” of Oracle Forms. Emphasis will be placed on the radical new, modularized approach to the navigation process. One idea is to have a STORET program group with icons to divide the application into logical categories (e.g., Organization, Station, Project, Sampling and Results, Automated Data Loggers). This demonstration can be a simple “mock up” using PowerPoint slides.
- C B. King and L. Manning briefed their approach to STORET v3.0 Central Data Exchange (CDX). Potential implementation of CDX will be kept in mind during the JRP sessions.

### **3.5 Views**

The following alterations will be made to the STORET Views:

#### Station details view

- C Include Point Name.

- C Update Latitude and Longitude calculations to use Decimal Degrees.
- C Remove RF3 River Reach Indicator.
- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include Binary Large Object (BLOB) titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Station visit details view

- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include BLOB titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Activity details view

- C Include Point Name for Station Latitude/Longitude and Activity Latitude/Longitude.
- C Update Latitude/Longitude calculations to use Decimal Degrees for Station Point of Record (POR) Latitude/Longitude and Activity Latitude/Longitude.
- C Include up to four assigned Projects as a concatenated value for each Activity row. Use TSRAFAPRA and TSMPROJ tables.
- C Include a single Activity Latitude/Longitude and associated Point Name using the following retrieval criteria for Actual Activity Location:
  - S Activity Location Point.
  - S If Activity Location Point not found, use Trawl Stop Point.
  - S If Trawl Stop Point not found, use Station Location Point.
- C Include Sample Matrix next to Medium Type.
- C Add Chain of Custody ID and QC Indicator. Place QC Indicator next to Activity ID.

- C Include one Cooperating Organization name. Include the first one retrieved from the database.
- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include BLOB titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Result details view - Regular

- C Include Point Name for Activity Latitude/Longitude.
- C Update Latitude/Longitude calculations to use Decimal Degrees for Activity Latitude/Longitude.
- C Include a single Activity Latitude/Longitude and associated Point Name using the following retrieval criteria for Actual Activity Location:
  - S Activity Location Point.
  - S If Activity Location Point not found, use Trawl Stop Point.
  - S If Trawl Stop Point not found, use Station Location Point.
- C Include Sample Matrix next to Medium Type.
- C Include Data Line Number and Name for Portable Data Loggers.
- C Add Bias and Confidence Level Corrected for Bias.
- C Drop all non-regular related columns.
- C Include Medium Type of "Other".
- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include BLOB titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Result details view - Habitat

- C Include Point Name for Activity Latitude/Longitude.
- C Update Latitude/Longitude calculations to use Decimal Degrees for Activity Latitude/Longitude.
- C Include a single Activity Latitude/Longitude and associated Point Name using the following retrieval criteria for Actual Activity Location:
  - S Activity Location Point.
  - S If Activity Location Point not found, use Trawl Stop Point.
  - S If Trawl Stop Point not found, use Station Location Point.
- C Add Bias and Confidence Level Corrected for Bias.
- C Drop all non-habitat related columns (e.g., Medium), but keep all columns used for both system-defined and user-defined habitats.
- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include BLOB titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Result details view - Biological

- C Include Point Name for Activity Latitude/Longitude.
- C Update Latitude/Longitude calculations to use Decimal Degrees for Activity Latitude/Longitude.
- C Include a single Activity Latitude/Longitude and associated Point Name using the following retrieval criteria for Actual Activity Location:
  - S Activity Location Point.
  - S If Activity Location Point not found, use Trawl Stop Point.
  - S If Trawl Stop Point not found, use Station Location Point.
- C Include Sample Matrix next to Medium Type.

- C Add Bias and Confidence Level Corrected for Bias.
- C Drop all non-biological related columns.
- C Include Habit & Voltinism.
- C Change data types (e.g., CHAR to VARCHAR2).
- C Change attribute lengths (e.g., IS\_NUMBER columns increased from 8 to 12).
- C Include BLOB titles.
- C Update view definitions to implement look up relations to TSMPRMVL table.

Project station assignement details view (NEW)

- C This view will include Project Station Assignments that have Project Station Weight (PSW) information.
- C The view will include the following columns: Organization ID, Organization Name, Project ID, Project Name, Station ID, Station Name, PSW columns (i.e., weight, weight\_unit\_code, stratum, category, site\_status, admin\_year, and comment\_text).

Others

- C Drop the all\_result\_details view.

**4.0 Action Item Summary**

Number	Description	Date Issued	Status	Assignment	Date Completed
02-0020	Determine order of Station Types.	11/20/2002	Open	B. King	
02-0021	Research the possibility of an 8-character Beach ID.	12/12/2002	Closed	B. King	02/27/2003
03-0001	Add Citation IDs to the Data Entry Application v2.0 DEMOTEST.	02/27/2003	Closed	B. King	03/06/2003
03-0002	Send PDF of Server Model to B. King	02/27/2003	Closed	B. Norris	03/06/2003

Number	Description	Date Issued	Status	Assignment	Date Completed
03-0003	Provide sample batch files containing new functionality to B. King.	02/27/2003	Closed	B. Norris	03/06/2003
03-0004	Verify number of characters in Total Number in Group field on Single Taxon Group Summary Data Entry Window (3 characters?).	03/19/2003	Closed	S. Smith	04/16/2003
03-0005	Load Central Warehouse at EPA.	04/16/2003	Closed	J. Wilson	04/22/2003
03-0006	Provide "no rows" export of Central Warehouse.	04/16/2003	Closed	J. Wilson	04/18/2003

## 5.0 Next Meeting

The next meeting was not scheduled.

## 6.0 Distribution to EPA & SDC Interested Parties

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## 7.0 Approval of Minutes as Submitted or Revised

\_\_\_\_\_  
Robert E. King  
Task Order Project Officer

\_\_\_\_\_  
Date



**ATTACHMENT A**

STORET Report Module Result Export Reports



**STORET Report Module Result Export Reports**

Table	Attribute	Column Name	Small	Semi-Med	Medium	Large
TSMORGAN	ORG_ID	Org ID	X	A	X	X
	NAME	Org Name	X		X	X
TSMSTATN	IDENTIFICATION_CD	Station ID	X	A	X	X
	NAME	Station Name	X		X	X
TSRFDACT	START_DATE	Act Start	X	A	X	X
	START_TIME	N/A	X	A	X	X
	START_TIME_ZONE	N/A	X	A	X	X
TSRTRIP	ID_CODE	Trip ID		A	X	X
TSRSTVST	ID_NUMBER	Vst#		A	X	X
TSRFDACT (cont.)	ID_CODE	Activity ID	X	A	X	X
	REPLICATE_NUMBER	Rep#	X	A	X	X
	MEDIUM_TYPE_NAME	Act Medium	X	A	X	X
TSRMATRX	NAME	Sample Matrix	A	A	A	X
TSRFDACT (cont.)	TYPE_NAME	Act Type	X	A	X	X
	CATEGORY_TYPE_NAME	Act Category	X	A	X	X
	QC_INDICATOR	QC Activity	X	A	X	X
	INTENT_TYPE_NAME	Act Intent				
	COMMUNITY_NAME	Act Community				
TSRCHAR TSRFDACT (cont.)						
TSRBIOPT						
TSMALP	POINT_NAME	Point Name				X

Table	Attribute	Column Name	Small	Semi-Med	Medium	Large
	LAT_DIRECTION GPS_LAT_DEGREE_MSR GPS_LATMINUTE_MSR w/ translation	Latitude				X
	LONG_DIRECTION GPS_LONG_DEG_MSR GPS_LONG_MIN_MSR w/ translation	Longitude				X
TSMMD	DESCRIPTION	Horizontal Datum				X
		Geopositioning Method				X
TSRFDACT (cont.)	STOP_DATE	Act Stop			X	X
	STOP_TIME	N/A			X	X
	STOP_TIME_ZONE	N/A			X	X
	RELTV_DEPTH_NAME	Activity Rel Depth		A	X	X
	DEPTH_TO_ACTIVITY	Activity Depth	A	A	X	X
	DEPTH_TO_ACT_UN_CD	Activity Depth Unit	A	A	X	X
	UPPER_DEPTH_TO_ACT	Activity Upper Depth		A	X	X
	LOWER_DEPTH_TO_ACT	Activity Lower Depth		A	X	X
TSRDLIN	LINE_NUMBER	Line #				
	LINE_NAME	Line Name				
TSRCHAR (cont.) or TSRHCSC	DISPLAY_NAME or CHARACTERISTIC_NAME	Characteristic Name	X	A	X	X
TSRRSULT	SPECIES_NUMBER	(concatenated with taxon)				
	VALUE_MEASURE	Res Val			X	X

Table	Attribute	Column Name	Small	Semi-Med	Medium	Large
TSRUOM	SHORT_FORM_NAME	Res Unit	X	A	X	X
TSRRSULT (cont.)	VALUE_TEXT	Result Val Text	X	A	X	X
TSMGNTXT	DESCRIPTION_TEXT	Text Result		A		X
TSMPRMVL	SMPL_FRAC_TYPE_NM	Sampl Frac Type	A	A	X	X
TSRRSULT (cont.)	VALUE_TYPE_NAME	Res Type		A	X	X
	STATISTIC_TYPE_NM	Statistic Type		A	X	X
TSMGNTXT (cont.)	DESCRIPTION_TEXT	Result Comment		A	A	X
TSRRSULT (cont.)	VALUE_STATUS	Res Stat		A	X	X
	WT_BASIS_TYPE_NM	Weight		A	X	X
	TEMP_BASIS_LVL_NM	Temp		A	X	X
	DUR_BASIS_TYPE_NM	Duration		A	X	X
TSMPRMVL (cont.)	FIELD_VALUE	Habit				
		Voltinism				
TSRCLDES						
TSRLSPP	SOURCE_ACR	Smp Prep Src		A	X	X
	PREPARATION_ID	Smp Prep ID		A	A	A
	NAME	Smp Prep Name			✗	X
TSRANLPR	SOURCE_ACR	An Proc Src		A	X	X
	PROCEDURE_ID	An Proc ID		A	X	X

Table	Attribute	Column Name	Small	Semi-Med	Medium	Large
	NAME	An Proc Name			✗	X
TSMGNTXT (cont.)	DESCRIPTION	Anal Proc Exception				X
TSRLAB	ID_CODE	Lab ID			X	X
	NAME	Lab Name			X	X
TSRRSULT (cont.)	LAB_CERT_IND_CODE	Crt			X	X
	LAB_BATCH_ID_CODE	Lab Batch ID			X	X
	ANALYSIS_DATE	Anal Date			X	X
	ANALYSIS_TIME	N/A			X	X
	ANALYSIS_TIME_ZONE	N/A			X	X
TSRDQL	MIN_QUANT_LIMIT	Lwr Quan Lmt			X	X
	MAX_QUANT_LIMIT	Upr Quan Lmt			X	X
	MIN_DETECT_LIMIT	Detectn Lmt		A	X	X
TSRUOM (cont.)	SHORT_FORM_NAME	Detectn Lmt Unit		A	X	X
TSRDQL (cont.)	DESCRIPTION_TEXT	Detection Lmt Desc			X	X
TSRLBRMK	SHORT_NAME	Lab Remarks			A	X
TSRRSULT (cont.)	REF_PT_FROM_NAME	Dist Meas From				X
	REF_PT_TO_NAME	Dist Meas To				X
TSRRCI	PARTICLE_SIZE_BASIS	Particle Size				X
TSRRSULT (cont.)	REPL_ANALYSIS_NUM	Repl Ct				X
	PRECISION_AMT_TEXT	Precision				X
	CONF_LVL_PCT_MSR	Conf Level (CL)				X
	CONF_LVL_CORR_BIAS	CL Corrected for Bias				X
	BIAS	Bias				X

<b>Table</b>	<b>Attribute</b>	<b>Column Name</b>	<b>Small</b>	<b>Semi-Med</b>	<b>Medium</b>	<b>Large</b>
	DILUTION_IND_CODE	Dilution Ind				X
	RECOVERY_IND_CODE	Recovery Ind				X
	CORRECTION_IND_CD	Correction Ind				X
TSRBRG						
TSRCHAR (cont.)						
TSRBRG (cont.)						
TSRBRG (cont.)						
TSRCPV						
TSRBRGI						
TSRCHAR (cont.)						
TSRRCI (cont.)						
TSRRCI (cont.)						
TSRRCI (cont.)						
TSRUOM (cont.)						
TSRBRG (cont.)						
TSRHCSC						

Legend:

X = Initially proposed column in report.

✕ = Column removed at meeting.

A = Column added at meeting.





**ATTACHMENT B**

Central Warehouse Station Report



## Central Warehouse Station Report

### Station Information

<u>Organization ID</u>	FIPS State Code
<u>Station ID</u>	State Postal Code
<u>Station Name</u>	<u>State Name</u>
Organization Name	FIPS County Code
<u>Primary Type</u>	<u>County Name</u>
Secondary Type	Hydrologic Unit Code
Well Number	Hydrologic Unit Name
Pipe Number	RF1 Segment Code
Location Point Type	RF1 Segment Name
Point Sequence Number	RF1 Mileage
<u>Latitude</u>	On Reach Ind
<u>Longitude</u>	RF3 River Reach Code
Horizontal Datum	NRCS Watershed ID
Geopositioning Method	Primary Estuary
Map Scale	Secondary Estuary
Elevation	Other Estuary Name
Elevation Datum	Great Lake Name
Elevation Method	Ocean Name
Country Code	Natv American Land Name
Country Name	FRS Key Identifier

Notes:

Underlined Elements  
are selected by Default



**ATTACHMENT C**

Central Warehouse Regular Result Report



Central Warehouse Regular Result Report

Basic Org Info  
Org ID  
Org Name

Basic Station Info  
Station ID  
Station Name

Station Location Info  
Station Latitude  
Station Longitude  
State  
County  
HUC  
Geopositioning Method  
Horizontal Datum

Station Visit Info  
Visit Num  
Visit Start  
Visit Stop  
Trip ID  
Trip Name

Basic Activity Info  
Activity ID  
Activity Start  
Activity Stop  
Activity Medium  
*Activity Matrix*  
Activity Type  
Activity Category-Rep#  
Activity Intent  
Community Sampled  
Subject Taxon  
Biopart  
Field Procedure ID  
Field Procedure Name  
Gear Config ID  
Gear Config Name

Actual Activity Location Info  
Actual Activity Latitude  
Actual Activity Longitude  
Actual Location Point Type  
*Actual Point Name*  
Actual Point Sequence #  
Well Number  
Pipe Number

Activity Depth Info  
Activity Depth  
Activity Depth Unit  
Activity Upper Depth  
Activity Rel Depth  
Activity Lower Depth  
Upr Lwr Depth Unit

Sample Handling Info  
Container Type  
Container Color  
Temp. Pres. Type  
Sample Handling Descr.

Basic Result Info  
Characteristic Name  
Sample Fraction  
Result Type  
Result Statistic  
Result Numeric Value  
Result Text Value  
Units  
Result Std Value  
Result Std Unit  
Weight Basis  
Temperature Basis  
Duration Basis  
Particle Size Basis  
Result Comment  
Distance Measured From  
Distance Measured To  
Text Result

Analytical Proc Info  
Analytical Proc. ID  
Analytical Proc. Name  
Sample Prep. Proc.  
Proc. Exception

Basic Lab Info  
Lab ID  
Lab Name  
Lab Batch ID  
Lab Cert.  
Analysis Date  
Detection Limit  
Detection Limit Descript.  
Lower Quantification Limit  
Upper Quantification Limit  
Lab Remark

Result QA Info  
No. of Repts.  
Precision  
Conf Level  
*Bias*  
Dilution Ind  
Recovery Ind  
Correction Ind

Notes:

Underlined Elements  
are selected by Default

*Italics Elements* are  
New in v2.0





**ATTACHMENT D**

Central Warehouse Biological Result Report



Central Warehouse Biological Result Report

<p><u>Basic Org. Info</u>                  Org ID                  Org Name</p>	<p><u>Activity Depth Info</u>                  Activity Depth  <u>Activity Depth Unit</u>                  Activity Upper Depth                  Activity Rel Depth                  Activity Lower Depth                  Upr Lwr Depth Unit</p>	<p><u>Result Info</u>                  Lab ID                  Lab Name                  Lab Batch ID                  Lab Cert.                  Analysis Date                  Detection Limit                  Detection Limit Descript.                  Lower Quantification Limit                  Upper Quantification Limit                  Lab Remark</p>
<p><u>Basic Station Info</u>                  Station ID                  Station Name</p>	<p><u>Sample Handling Info</u>                  Container Type                  Container Color                  Temp. Pres. Type                  Sample Handling Desc.</p>	<p><u>Feeding Info</u>                  Feeding Group                  Pollution Tolerance                  Trophic Level                  Habit                  Voltinism                  Cell Shape                  Cell Form                  Bio Result Group ID                  Bio Result Group Type                  Bio Result Group Subject Taxon                  Bio Result Group Desc.                  Phys/Bio Ind.                  Bio Result Group ID (sex)                  Bio Result Group ID (lifestage)                  Bio Result Group Class Var.                  Class Prim. Desc.                  Class Sec. Desc.                  Class Lower Bound                  Class Upper Bound                  Units                  Number in Group                  Group Count Type                  Bio Individual Number                  Habitat Class Desc.</p>
<p><u>Station Location Info</u>  <u>Station Latitude</u>                  Station Longitude                  State                  County                  HUC                  Geopositioning Method                  Horizontal Datum</p>	<p><u>Basic Trawl Info</u>                  Trawl Start Point Type                  Trawl Start Point Name                  Trawl Start Point Seq.                  Trawl Start Latitude                  Trawl Start Longitude                  Trawl Start Depth                  Trawl Start Depth Units                  Trawl Stop Point Type                  Trawl Stop Point Name                  Trawl Stop Point Seq.                  Trawl Stop Latitude                  Trawl Stop Longitude                  Trawl Stop Depth                  Trawl Stop Depth Units</p>	<p><u>Result Qnty</u>                  No. of Reps.                  Precision                  Conf Level                  Bias                  Dilution Ind                  Recovery Ind                  Correction Ind</p>
<p><u>Station Visit Info</u>                  Visit Num                  Visit Start                  Visit Stop                  Trip ID                  Trip Name</p>	<p><u>Basic Result Info</u>  <u>Characteristic Name</u>                  Sample Fraction  <u>Result Type</u>  <u>Result Statistic</u>                  Result Numeric Value                  Result Text Value                  Units                  Result Std Value                  Result Std Unit                  Weight Basis                  Temperature Basis                  Duration Basis                  Particle Size Basis                  Result Comment                  Distance Measured From                  Distance Measured To                  Text Result</p>	<p>Notes:   <u>Underlined Elements</u>                  are selected by Default   <i>Italics Elements</i> are                  Now in v2.0</p>
<p><u>Basic Activity Info</u>                  Activity ID  <u>Activity Start</u>                  Activity Stop  <u>Activity Medium</u>                  Activity Matrix  <u>Activity Type</u>                  Activity Category-Repr                  Activity Intent                  Community Sampled  <u>Subject Taxon</u>                  Biopart                  Field Procedure ID                  Field Procedure Name                  Gear Config ID                  Gear Config Name</p>	<p><u>Analytical Proc. Info</u>  <u>Analytical Proc. ID</u>  <u>Analytical Proc. Name</u>                  Sample Prep. Proc.                  Proc. Exception</p>	
<p><u>Actual Activity Location Info</u>                  Actual Activity Latitude                  Actual Activity Longitude                  Actual Location Point Type                  Actual Point Name                  Actual Point Sequence fr                  Well Number                  Pipe Number</p>		



