



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

August 27, 2007

Environmental Resource Associates (ERA)  
PT Data Group  
6000 West 54<sup>th</sup> Avenue  
Arvada, Colorado 80002

To Whom It May Concern:

2007 DISCHARGE MONITORING REPORT – QUALITY ASSURANCE (DMR-QA) STUDY 27

The results of the 2007 DMR-QA Study 27 Laboratory Performance Evaluation obtained by TVA Sequoyah Nuclear Plant and supporting Laboratories are enclosed as required by NPDES Permit TN0026450.

Please contact me at (423) 843-6700 if you have any questions or comments.

Sincerely,

Stephanie A. Howard  
Principal Environmental Engineer  
Signatory Authority for  
Timothy P. Cleary  
Site Vice President  
Sequoyah Nuclear Plant

Enclosure

cc (Enclosure)

Mr. Vojin Janjic  
State of Tennessee  
Department of Environment and Conservation  
Division of Water Pollution Control  
Enforcement & Compliance Section  
6<sup>th</sup> Floor, L&C Annex  
401 Church Street  
Nashville, Tennessee 37243-1534

Chattanooga Environmental Assistance Center  
Division of Water Pollution Control  
State Office Building, Suite 550  
540 McCallie Avenue  
Chattanooga, Tennessee 37402-2013

Mr. Wayne Turnbull  
US EPA Region IV  
SESD/MTSB/QAS  
980 College Station Road  
Athens, Georgia 30605-2720

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

NRR

# USEPA

## DMR-QA 27

### NPDES PERMITTEE DATA REPORT FORM



ENVIRONMENTAL  
RESOURCE ASSOCIATES,  
The Industry Standard™

USEPA NPDES TN0026450

Permit #:

Permit Ext:

#### Permittee/Facility Name and Address

Permittee Name: TVA - Sequoyah Nuclear Plant

Facility Address: P.O. Box 2000

Mailstop: SB-2A-SQN

City: Soddy-Daisy

State: TN

Postal Code: 37384-2000

#### Certification by Permit Holder or Authorized Representative

Name of

Certifying Official: Stephanie A Howard

Phone Number: 423-843-6700

Title: Principal Environmental Engineer

Fax Number: 423-843-7080

Email Address: sahoward@tva.gov

Mailing Address: PO Box 2000

(enter only if different  
from address above)

Mailstop: SB-2A-SQN

City: Soddy-Daisy

State: TN

Postal Code: 37384-2000

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. Each reported value was produced from a single analytical run using the analytical system that routinely performs these analyses to produce compliance monitoring data required under our National Pollutant Discharge Elimination System (NPDES) Permit. Neither I nor any of my subordinates compared our results from independent analyses conducted by us or another laboratory before we reported our results to the USEPA. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:

Stephanie A. Howard

signature authority for Timothy P. Cleary,  
SON Site Vice President

Date Signed:

8/27/2007

Please make corrections in boxes above

# USEPA DMR-QA 27

## IDENTIFICATION OF ALL CHEMISTRY & WET LABORATORIES



ENVIRONMENTAL  
RESOURCE ASSOCIATES  
The Industry Standard™

USEPA NPDES TN0026450

Permit #:

Permit Ext:

### Laboratory Name and Address:

USEPA  
Assigned  
Lab Code:

"X" all boxes that apply

Lab  
Analysis

Lab  
Type

Chem

WET

In House

Contract

Name: Environmental Science Corp

Address: 12065 Lebanon Rd.



City: Mt Juliet

State: TN

Postal Code: 37122

TN00003

X

☐

☐

X

Name: Environmental Testing Solutions, Inc.

Address: PO Box 7565



City: Asheville

State: NC

Postal Code: 28802

NC01230

☐

X

☐

X

Name: TVA - Sequoyah Nuclear Plant

Address: P.O. Box 2000

Mailstop: SB-2A-SQN

City: Soddy-Daisy

State: TN

Postal Code: 37384-2000

TN00999

X

☐

X

☐

Please make corrections in boxes above



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RESOURCE ASSOCIATES®**  
The Industry Standard™

## DMRQA-27 Data Reporting Form

**NPDES Permit #: TN0026450**

**Permittee Name: TVA - Sequoyah Nuclear Plant**

Laboratory: TVA - Sequoyah Nuclear Plant

USEPA Lab Code: TN00999

Customer Number: T203302

Anal. No.	Analyte	Result	Units	Method Description	Analysis Date MM/DD/YYYY	Report* For DMRQA
<b>pH</b>						
0019	pH	5.77	S.U.	EPA 150.1	08/23/2007	<input checked="" type="checkbox"/>
<b>Total Residual Chlorine</b>						
0098	Total Residual Chlorine	1.24	mg/L	EPA 330.4	08/03/2007	<input checked="" type="checkbox"/>

\* For Permittee Use Only:

Place an "X" in the box to the right of each analyte that is required in routine NPDES monitoring and should be included on the final permittee report.





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RESOURCE ASSOCIATES®**  
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## DMRQA-27 Data Reporting Form

**NPDES Permit #: TN0026450**

**Permittee Name: TVA - Sequoyah Nuclear Plant**

Laboratory: Environmental Testing Solutions, Inc.

USEPA Lab Code: NC01230

Customer Number: E559701

Anal. No.	Test Conditions / Endpoint	Result	Units	Method Description	Analysis Date MM/DD/YYYY	Report* For DMRQA
<b>Fathead minnow (Test Code 15)</b>						
0808	IC25 (ON) Growth	30.4	%	EPA 1000	06/19/2007	<input checked="" type="checkbox"/>
<b>Ceriodaphnia dubia (Test Code 21)</b>						
0767	IC25 Reproduction	30.6	%	EPA 1002	06/12/2007	<input checked="" type="checkbox"/>

\* For Permittee Use Only:

Place an "X" in the box to the right of each analyte that is required in routine NPDES monitoring and should be included on the final permittee report.



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





# WP-150 Data Reporting Form

**NPDES Permit #: TN0026450**

**Permittee Name: TVA - Sequoyah Nuclear Plant**

Laboratory: Environmental Science Corp

USEPA Lab Code: TN00003

Customer Number: E552301

Anal. No.	Analyte	Result	Units	Method Description	Analysis Date MM/DD/YYYY	Report* For DMRQA
<b>Hardness</b>						
0072	Non-Filterable Residue (TSS)	76.0	mg/L	EPA 160.2	08/01/2007	<input checked="" type="checkbox"/>
<b>Complex Nutrients</b>						
0035	Total phosphorus as P	4.02	mg/L	EPA 365.2	08/02/2007	<input checked="" type="checkbox"/>
<b>Oil &amp; Grease</b>						
0104	Oil & Grease (Gravimetric)	22.	mg/L	EPA 1664A SPE	08/13/2007	<input checked="" type="checkbox"/>
<b>Trace Metals</b>						
1025	Boron	1450.	µg/L	EPA 200.7	08/02/2007	<input checked="" type="checkbox"/>
0007	Copper	117.	µg/L	EPA 200.8	08/09/2007	<input checked="" type="checkbox"/>
0008	Iron	515.	µg/L	EPA 200.7	08/02/2007	<input checked="" type="checkbox"/>

\* For Permittee Use Only:

Place an "X" in the box to the right of each analyte that is required in routine NPDES monitoring and should be included on the final permittee report.



Permittee: TVA - SQNEPA Lab code: TN00999Permit Number: TN0026450**Chemistry/Microbiology/Analyte Checklist****DMR-QA Study 27**

NPDES Testing Required	PT Samples Ordered	Analyte Test	Test Completed/Reported	
			On-Site Lab	Contract Lab
<input type="checkbox"/>	<input type="checkbox"/>	Microbiology	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	E.coli	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fecal Coliform, MF or MPN	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Total Coliform, MF or MPN	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Trace Metals	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Aluminum	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Antimony	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Arsenic	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Barium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Beryllium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Cadmium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Chromium, total	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Chromium, hexavalent	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Cobalt	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Iron	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Lead	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Manganese	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Mercury	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Molybdenum	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Nickel	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Selenium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Silver	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Thallium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Vanadium	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Zinc	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Demands	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5-day BOD	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5-day Carbonaceous BOD	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	COD	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	TOC	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Minerals	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Alkalinity, total (CaCO <sub>3</sub> )	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Chloride	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fluoride	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Hardness, total (CaCO <sub>3</sub> )	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Specific conductance (25°C)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Sulfate	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Total Dissolved Solids (180°C)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Nutrients	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Ammonia as N	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Nitrate as N	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Nitrite as N	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Orthophosphate as P	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Total Kjeldahl-Nitrogen as N	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Total Phosphorus as P	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Misc. Analytes	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Non-Filterable Residue (TSS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Oil and Grease	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	pH	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Total Cyanide	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Total Phenolics (4-AAP)	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Total Residual Chlorine	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Settleable Solids	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Turbidity	<input type="checkbox"/>	<input type="checkbox"/>

Stephanie A. Howard  
Print Name8/27/07  
DateStephanie A. Howard Principal Environmental Engineer  
Signature/Title

Signature authority for Timothy P. Cleary, SQN Site Vice President

# WET Organisms/Test Conditions/End Points Checklist

## DMR-QA Study 27

Analyte Number	Organisms / Conditions	End Points	Test Req'd
Test Code 11/EPA Method 2000			
752	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF 20°C	LC50	<input type="checkbox"/>
Test Code 13/EPA Method 2000			
754	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF 25°C	LC50	<input type="checkbox"/>
Test Code 14/EPA Method 2000			
755	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW 25°C	LC50	<input type="checkbox"/>
Test Code 15/EPA Method 1000			
756	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF	NOEC SURVIVAL	<input type="checkbox"/>
808	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF	IC25 GROWTH	<input checked="" type="checkbox"/>
809	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF	IC25 (SN) <sup>1</sup> GROWTH	<input type="checkbox"/>
810	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF	NOEC (ON) <sup>2</sup> GROWTH	<input type="checkbox"/>
811	Fathead minnow ( <i>Pimephales promelas</i> ) - MHSF	NOEC (SN) GROWTH	<input type="checkbox"/>
Test Code 16/EPA Method 1000			
759	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW	NOEC SURVIVAL	<input type="checkbox"/>
812	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW	IC25 GROWTH	<input type="checkbox"/>
813	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW	IC25 (SN) GROWTH	<input type="checkbox"/>
814	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW	NOEC (ON) GROWTH	<input type="checkbox"/>
815	Fathead minnow ( <i>Pimephales promelas</i> ) - 20% DMW	NOEC (SN) GROWTH	<input type="checkbox"/>
Test Code 17/EPA Method 2002			
762	<i>Ceriodaphnia dubia</i> - MHSF	LC50	<input type="checkbox"/>
Test Code 18/EPA Method 2002			
763	<i>Ceriodaphnia dubia</i> - 20% DMW	LC50	<input type="checkbox"/>
Test Code 19/EPA Method 2002			
764	<i>Ceriodaphnia dubia</i> - MHSF 25°C	LC50	<input type="checkbox"/>
Test Code 20/EPA Method 2002			
765	<i>Ceriodaphnia dubia</i> - 20% DMW 25°C	LC50	<input type="checkbox"/>
Test Code 21/EPA Method 1002			
766	<i>Ceriodaphnia dubia</i> - MHSF	NOEC SURVIVAL	<input type="checkbox"/>
767	<i>Ceriodaphnia dubia</i> - MHSF	IC 25 REPRODUCTION	<input checked="" type="checkbox"/>
768	<i>Ceriodaphnia dubia</i> - MHSF	NOEC REPRODUCTION	<input type="checkbox"/>
Test Code 22/EPA Method 1002			
769	<i>Ceriodaphnia dubia</i> - 20% DMW	NOEC SURVIVAL	<input type="checkbox"/>
770	<i>Ceriodaphnia dubia</i> - 20% DMW	IC25 REPRODUCTION	<input type="checkbox"/>
771	<i>Ceriodaphnia dubia</i> - 20% DMW	NOEC REPRODUCTION	<input type="checkbox"/>
Test Code 32/EPA Method 2021			
788	<i>Daphnia magna</i> - MHSF 20°C	LC50	<input type="checkbox"/>
Test Code 36/EPA Method 2021			
792	<i>Daphnia pulex</i> - MHSF 20°C	LC50	<input type="checkbox"/>
Test Code 38/EPA Method 2021			
794	<i>Daphnia pulex</i> - MHSF 25°C	LC50	<input type="checkbox"/>
Test Code 42/EPA Method 2007			
798	Mysid ( <i>Mysidopsis bahia</i> ) 20°C	LC50	<input type="checkbox"/>
Test Code 43/EPA Method 1007			
799	Mysid ( <i>Mysidopsis bahia</i> )	NOEC SURVIVAL	<input type="checkbox"/>
816	Mysid ( <i>Mysidopsis bahia</i> )	IC25 GROWTH	<input type="checkbox"/>
817	Mysid ( <i>Mysidopsis bahia</i> )	IC25 (SN) GROWTH	<input type="checkbox"/>
818	Mysid ( <i>Mysidopsis bahia</i> )	NOEC (ON) GROWTH	<input type="checkbox"/>
819	Mysid ( <i>Mysidopsis bahia</i> )	NOEC (SN) GROWTH	<input type="checkbox"/>
Test Code 44/EPA Method 2006			
803	Inland silverside ( <i>Menidia berylina</i> ) 20°C	LC50	<input type="checkbox"/>
Test Code 46/EPA Method 2004			
804	Sheepshead minnow ( <i>Cyprinodon variegatus</i> ) 20°C	LC50	<input type="checkbox"/>
Test Code 47/EPA Method 1004			
805	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )	NOEC SURVIVAL	<input type="checkbox"/>
820	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )	IC25 GROWTH	<input type="checkbox"/>
821	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )	IC25 (SN) GROWTH	<input type="checkbox"/>
822	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )	NOEC (ON) GROWTH	<input type="checkbox"/>
823	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )	NOEC (SN) GROWTH	<input type="checkbox"/>

<sup>1</sup>Survival Number

<sup>2</sup>Original Number

**Permittee:** Provide a copy of this checklist to your in-house and contract laboratories with the selected analytes that you want them to test for during Study 27. This checklist must be included with the final data package that you are required to send to your DMR-QA coordinator and PT Provider by August 31, 2007.